# IV. Fallout for the industrial economies

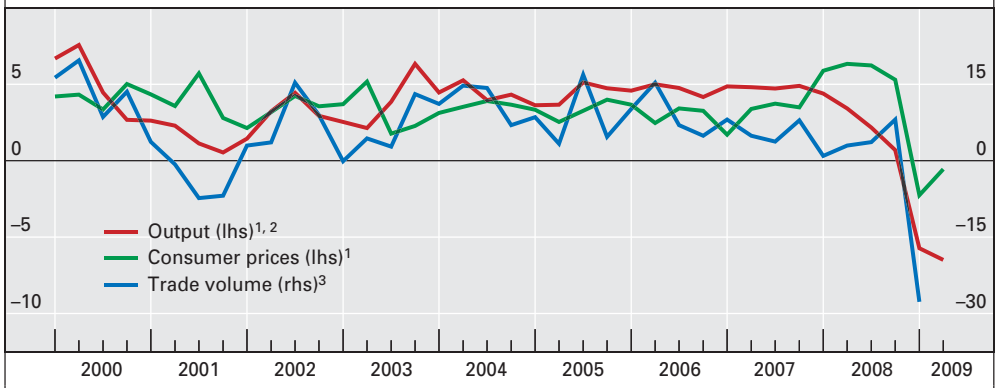
Several industrial economies began to contract in the first half of 2008. In the second half, recessionary forces became much stronger and more global. The resulting plunge in world trade was more rapid than at any time in the past half-century and hit all export-oriented economies hard (Graph IV.1). The coincidence of the end of a long global upswing, a collapse in trade and a severe financial system shock made the downturn an unusually synchronised worldwide phenomenon. With industrial production, exports and confidence becoming highly correlated across economies, global output and inflation declined sharply.

Most leading international forecasters envisage a contraction in global output of 1–2% in 2009. The United States, the euro area and Japan are in a deep recession, and growth in emerging market economies as a whole has slowed abruptly. The consensus forecast as of May is for global growth to recover but to remain well below trend through 2010. As a result, several major economies are expected to see zero or negative year-on-year inflation rates in 2009. The US current account deficit has narrowed in recent months, with a correspondingly large fall in the surpluses of Germany, Japan and countries in the Middle East. The surpluses of China and other emerging economies in Asia remain large.

The short-term outlook is highly uncertain, one reason being the difficulty in assessing the complex interaction between the real economy and the financial system, and the impact of the exceptional policy measures introduced over the past year or so. Recent policy measures should help support demand, ease downward pressures on asset prices and credit flows and lead to a return of

## Global output, trade and consumer prices

Annualised quarterly changes, in per cent




[1] Weighted average using 2005 GDP and PPP weights of: the euro area, Japan and the United States; Australia, Canada, Denmark, New Zealand, Norway, Sweden, Switzerland and the United Kingdom; China, Chinese Taipei, Hong Kong SAR, India, Indonesia, Korea, Malaysia, the Philippines, Singapore and Thailand; Argentina, Brazil, Chile, Colombia, Mexico, Peru and Venezuela; the Czech Republic, Hungary and Poland; Russia, Saudi Arabia, South Africa and Turkey. [2] First quarter of 2009 partly estimated using forecasts from JPMorgan Chase. [3] Sum of world exports and imports of goods in US dollars divided by unit values.

Sources: IMF; Bloomberg; Datastream; JPMorgan Chase; national data. Graph IV.1

confidence. But the very speed of the recent downturn could create larger than average second-round effects. In particular, if the propensity to save were to rise further in the industrial economies – as could easily happen, given the high overhang of household debt and dramatic reduction in household wealth – contractionary impulses in the global economy could be prolonged.

## Before the crisis

"Global saving glut" prior to the crisis ...

The current crisis was preceded by a major shift in global macroeconomic conditions. A key element of this shift was a significant rise in global gross saving as a percentage of GDP, from about 21½% in 2001 to almost 24½% in 2007. Most of the increase reflected the relatively high saving rate of the emerging market world, where a more than threefold rise in aggregate saving between 2001 and 2007 had lifted the marginal propensity to save to 43%. Average saving rates rose in most emerging market regions, but the trend was particularly marked in China and the Middle East (Table IV.1). In addition, in several emerging Asian economies, investment rates fell from their mid-1990s level, leading to even higher excess saving.

In contrast, the average saving rate of industrial economies fell. The decline was led by a sharp drop in the saving rate, notably in the United States. In some economies (eg Ireland, Spain, the United Kingdom and the United States), the composition of capital spending shifted markedly towards residential construction during the first half of the 2000s.

### Global gross saving and investment

As a percentage of GDP

| | Saving | | | | Investment | | | |
|---|---|---|---|---|---|---|---|---|
| | 1995 | 2001 | 2007 | 2008 | 1995 | 2001 | 2007 | 2008 |
| Advanced economies | 21.4 | 20.0 | 19.9 | 18.8 | 21.6 | 20.6 | 21.0 | 20.4 |
| United States | 16.0 | 16.4 | 14.2 | 11.9 | 18.6 | 19.1 | 18.8 | 17.5 |
| Japan | 30.5 | 26.9 | 28.9 | 26.7 | 28.4 | 24.8 | 24.1 | 23.5 |
| Germany | 21.1 | 19.5 | 25.8 | 25.7 | 22.2 | 19.5 | 18.3 | 19.3 |
| United Kingdom | 15.9 | 15.4 | 15.3 | 15.1 | 17.2 | 17.4 | 18.2 | 16.8 |
| Other[1] | 21.4 | 22.5 | 22.5 | 21.9 | 20.1 | 21.2 | 23.5 | 23.2 |
| Emerging economies | 26.8 | 26.6 | 35.4 | 36.6 | 27.6 | 25.1 | 30.2 | 31.8 |
| China | 42.1 | 37.6 | 57.6 | 59.0 | 41.9 | 36.3 | 46.6 | 49.0 |
| Other emerging Asia[2] | 31.7 | 27.6 | 32.8 | 32.1 | 32.5 | 24.2 | 28.9 | 30.1 |
| Latin America[3] | 17.0 | 18.0 | 22.8 | 22.3 | 19.2 | 20.6 | 22.2 | 22.8 |
| Middle East[4] | 24.0 | 33.3 | 49.6 | 50.8 | 20.9 | 24.8 | 26.5 | 26.7 |
| Other[5] | 22.7 | 23.0 | 23.1 | 24.3 | 23.1 | 20.2 | 23.5 | 24.3 |
| Total | 22.5 | 21.4 | 24.3 | 24.2 | 22.8 | 21.5 | 23.6 | 23.9 |

Country groups and total are calculated as the sum of saving or investment in the component countries, divided by the sum of GDP in those countries, all expressed in US dollars.

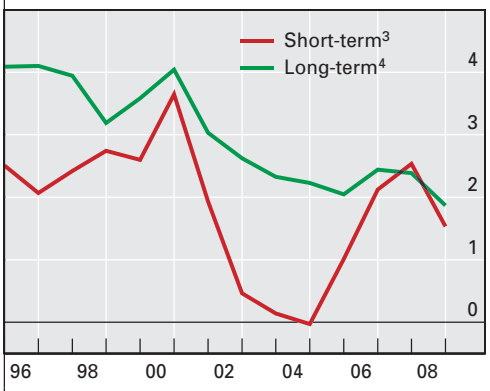
[1] Australia, Canada, Denmark, New Zealand, Norway, Sweden, Switzerland and euro area economies excluding Germany. [2] Chinese Taipei, Hong Kong SAR, India, Indonesia, Korea, Malaysia, the Philippines, Singapore and Thailand. [3] Argentina, Brazil, Chile, Colombia, Mexico, Peru and Venezuela. [4] Iran, Kuwait, Libya, Oman, Qatar, Saudi Arabia and Yemen. [5] The Czech Republic, Hungary, Poland, Russia, South Africa and Turkey.

Source: IMF, *World Economic Outlook*. Table IV.1

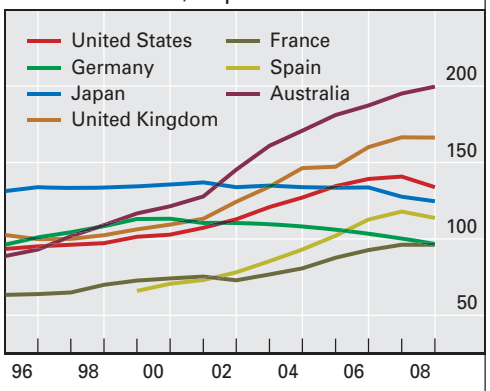
## Interest rates and household debt

In per cent

Real interest rates[1] in the G3[2]




Household debt/disposable income[5]




[1] Nominal rates less core inflation (for the United States, change in the deflator for personal consumption expenditures excluding food and energy; for the euro area, change in consumer prices excluding energy and unprocessed food; for Japan, change in consumer prices excluding fresh food). [2] The United States, the euro area (prior to 1999, Germany) and Japan; weighted average based on 2005 GDP and PPP exchange rates; annual averages. [3] Three-month money market rates. [4] Ten-year government bond yields. [5] Definition of households may differ across countries; household disposable income in net terms except for Spain and the United Kingdom (gross).

Source: National data. Graph IV.2

... contributed to major imbalances in international demand patterns ...

One effect of this pattern of spending was the concentration of consumption growth in only a few countries: the United States, in particular, contributed about one third of the increase in global consumption between 2000 and 2006. Another major consequence was the rise in the US current account deficit from a little over 3% of GDP at the end of the 1990s to a peak of 6% in 2006. By 2007, current account surpluses as a percentage of GDP had soared in countries that were major exporters of manufactured goods – in China to more than 10% of GDP; in Germany to almost 8%; and in Japan to about 5%. Current account surpluses in the Middle East were boosted by higher oil prices.

... by depressing long-term interest rates

The pre-crisis household spending boom in many advanced economies was sustained by several interrelated factors. One was a significant decline in real long-term interest rates, made possible not only by the strong rise in global saving but also by a reduction in the term premium led by increased demand for long-term securities by institutional investors, particularly emerging market central banks (Graph IV.2).[1] The expansionary impact of low long-term interest rates was magnified by easy monetary conditions in major advanced economies, where real short-term interest rates remained low or negative between 2002 and 2005.

[1] There are a number of theories on the link between global saving and long-term interest rates. According to the "saving glut" hypothesis, the real long-term interest rate must fall to establish the global equilibrium at a higher level of investment; see B Bernanke, "The global saving glut and the US current account deficit", Homer Jones Lecture, St Louis, 14 April 2005, www.federalreserve.gov. Yet another hypothesis is that financial crises and high saving in emerging markets, combined with limited financial development, created a global shortage of low-risk assets, leading to lower long-term bond rates; see R Caballero, E Farhi and P Gourinchas, "An equilibrium model of 'global imbalances' and low interest rates", *American Economic Review*, vol 98, no 1, March 2008, pp 358–93.

Household debt rose sharply ...

During the upswing, credit conditions eased the most in the United States: real long-term rates on 30-year fixed rate mortgages fell from about 5% in the early 2000s to 1–3% in 2005, and non-price lending terms were eased considerably (see Chapter III). A near doubling of real household credit growth, from an average of 4% in the 1990s to about 7.5% during 2000–06, led to a substantial build-up of household debt relative to income. Household indebtedness also increased significantly in the United Kingdom, where mortgage rates, linked to short-term interest rates, also fell sharply. Greater household leverage thus made many households highly vulnerable to negative income and asset price shocks.

... as did house prices ...

A second factor in the spending boom, partly driven by the first, was a surge in house prices in several countries. Not only did this lead to increased speculative buying of property, but it also facilitated higher borrowing against housing collateral. From the early 2000s to the peak of the housing price cycle, real house prices increased more than 90% in the United Kingdom and Spain and more than 60% in the United States (based on the Case-Shiller home price index). In several countries, the share of residential investment in GDP rose sharply above trend. In the United States, this share reached a peak of 6.2% in 2005 and the homeowner vacancy rate jumped by 50% between 2001 and 2006, to over 2.5%. Residential construction rose well above trend in Spain and Ireland (to 9% and 12% of GDP, respectively, in 2007) as well as in Australia and Canada.

... residential investment ...

... and investment in consumer durables sectors

A third factor was that the spending boom in several industrial economies may have generated excessive optimism among producers of goods and services, leading to overinvestment and a significant misallocation of resources during the pre-crisis period. In particular, a marked rise in household spending on consumer durable goods, including cars, led to a build-up of production capacity. In the United States, for instance, expenditure on consumer durables, which had picked up since the mid-1990s, accelerated during the early 2000s, with its ratio to GDP rising from about 7% in the mid-1990s to a peak of about 11% in 2007.[2] In the US automobile sector, production capacity increased by about 55% between 1996 and 2006 compared with growth of less than 25% during the preceding 10 years.

## From boom to bust

The boom ended in a sharp and synchronised global downturn ...

Since the second half of 2008, household expenditure (including on houses) in the advanced world has contracted as asset prices and confidence have fallen sharply and as credit market conditions have tightened. The following section focuses on the dynamics of the current downturn in advanced economies and the factors behind it, while Chapter V provides a discussion of how the downturn has affected emerging market economies.

Although growth has weakened considerably in the United States since mid-2007 and in other major industrial economies since early 2008, the

[2] Spending on consumer durables also has an investment element. Including this element in tangible assets raised the US household saving ratio by 2.5 percentage points during 2000–06; the increment fell to 0.5 percentage points by the final quarter of 2008.

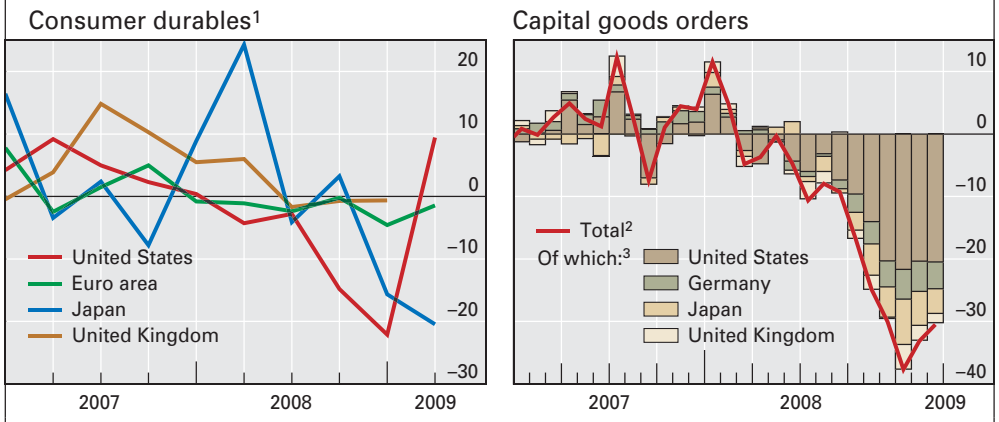
downturn became truly global only towards the end of 2008 (see Table I.1 for an overview of the stages of the crisis). Output fell at seasonally adjusted annual rates of 14% in Japan and over 6% in the United States and the euro area in the fourth quarter of 2008, followed by even larger declines in the first quarter of 2009 in Japan and the euro area (15% and about 10%, respectively). However, there have been some signs that the pace of decline in output has started to ease since March. The monthly rate of decline in industrial production slowed in the United States in April and production increased in Japan in March and April. In addition, most survey measures of manufacturing output (eg purchasing managers' indices) continued to improve in the G3 economies up to May, suggesting that the outlook for a recovery has strengthened.

... led by a rapid contraction in durables consumption ...

The downturn has been unusually deep, involving most components of spending. Private consumption contracted in all major economies in the final quarter of 2008, but nowhere as quickly as in the United States, where it plunged by an annualised 4.3%, accounting for almost half of the decline in output. The hardest hit category was spending on consumer durables, which slumped during the second half of 2008 (Graph IV.3). By the fourth quarter, the share of consumer durables expenditure in US GDP had already fallen by about 1 percentage point from its peak in 2007. The outsize fall was followed by a rebound in the first quarter of 2009, but its sustainability, in the face of large wealth losses and credit market disruption, remains uncertain (see the next section). In contrast, consumption accounted for only a small part of the drop in output in the euro area and Japan; the downturn in these economies was led instead by a major collapse of net trade, accounting for about 75% and 50% of the decline in output in Japan in the fourth quarter of 2008 and the first quarter of 2009, respectively, and for about 60% of the decline in the euro area in the final quarter of 2008.

With consumption deteriorating faster than income, household saving rates increased in several advanced economies, particularly in those where

## Change in real spending




[1] Including semi-durables; for the euro area, proxied by retail sales excluding food; quarterly changes at annual rates, in per cent. [2] Weighted average based on 2005 GDP and PPP exchange rates; changes over 12 months, in per cent. [3] Contributions, in percentage points.

Source: National data. Graph IV.3

they had been low. The United States recorded a sharp rise of almost 4 percentage points of disposable income (to 4.2%) between the last quarter of 2007 and the first quarter of 2009. Australia and the United Kingdom also saw a jump in household saving, from almost zero and a negative saving rate in the first quarter of 2008 to 8.5% and 4.8%, respectively, in the fourth quarter. The propensity to save of euro area households also increased markedly, with the saving rate rising by 1 percentage point (to 15.1%) in the final quarter of 2008.

... a sharp decline in residential investment ...

The decrease in residential investment was most rapid in the United States, where residential construction declined to a low of 2.7% of GDP in the first quarter of 2009. In Spain and the United Kingdom, the crisis further impaired an already weakened residential sector. Residential investment also started to fall in Germany towards the end of 2008, and housing starts suggest that a major housing downturn has been under way in Japan since the beginning of 2009. At the end of 2008, the ratio of residential investment to GDP still exceeded the average since 1980 in a number of industrial economies (notably Canada, Ireland and the Netherlands), suggesting that the adjustment has further to go in many cases.

... and a deep downturn in business investment

A squeeze in credit supply to commercial real estate developers, combined with low demand for office and commercial properties, accentuated the weakness in non-residential construction. Moreover, as consumer demand prospects deteriorated and overseas orders plummeted, business investment projects were either postponed or cut heavily. In the United States, for instance, non-residential fixed investment contracted by a record 38% (annualised) in the first quarter of 2009 following a 23% fall in the fourth quarter of 2008. Business investment also contracted sharply in Japan and the euro area. The steep decline in capital goods orders up to March 2009 suggests that the investment downturn remains deep (Graph IV.3).

The recession was aggravated by pressure to curb excessive inventories as actual sales fell more rapidly than expected. In addition, there is evidence that investment may have suffered because of shortages of trade credit. Surveys in the United Kingdom, for instance, suggest that interfirm trade credit suffered as payment delays increased, as the probability of business failures rose, and as firms accumulated cash to reduce exposure to volatile markets. The greater reluctance of banks and non-bank financial institutions to discount trade invoices could also have contributed to the investment downturn.

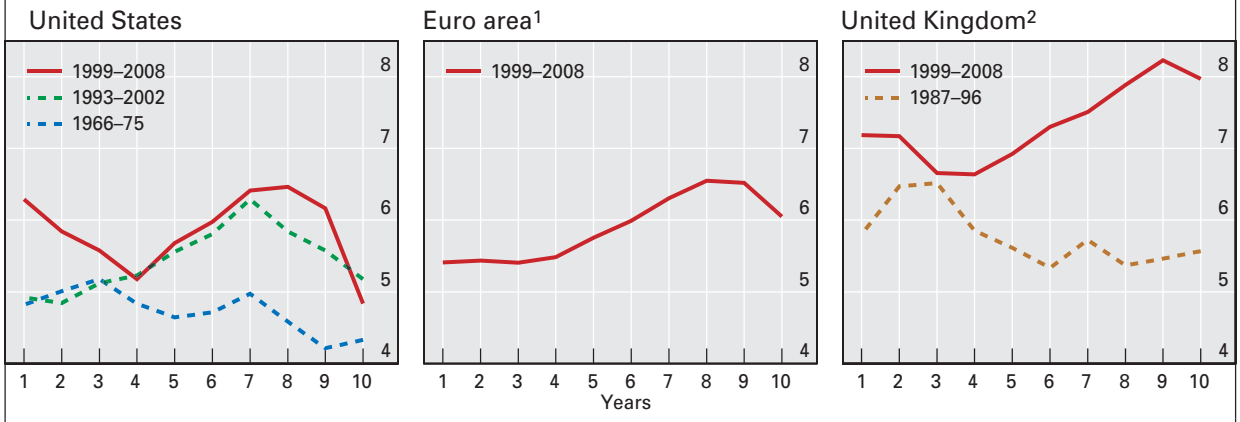
## The downturn, balance sheets and credit

### *Household balance sheets*

Very weak household balance sheets ...

A key factor leading the downturn was the severe weakening of household balance sheets as a result of the financial crisis. Equity prices fell rapidly, and the decline in nominal house prices, which had first been confined to the United States, became more widespread across advanced economies. From the second quarter of 2007 to the fourth quarter of 2008, US households lost around 20% (about $13 trillion) of their net worth; as a percentage of

## Household net wealth as a ratio of disposable income




[1] Estimates of 2008 net wealth based on changes in net worth (excluding revaluation of residential property). [2] Estimates of 2008 net wealth based on changes in net worth due to gross saving and capital transfers.

Sources: ECB; Federal Reserve flow of funds accounts; Datastream; UK Office for National Statistics; national data. Graph IV.4

disposable income, this loss was greater than the wealth accumulated over the previous five years (Graph IV.4). Wealth losses in the euro area have also become more widespread across assets and countries, far exceeding those suffered during the equity market meltdown in 2001, when rising housing wealth offset the negative effects of large equity losses.

... are having negative effects on consumption ...

Such declines in household wealth, particularly housing assets, are likely to constrain consumption for some time, although there could be forces working in the opposite direction. Falling house prices imply a reduction in the implicit rental cost of housing, offsetting some of the negative wealth effects. Moreover, lower prices make houses more affordable for prospective homeowners, reducing their need to save for a given down payment. In addition, some decline in household wealth – particularly from depreciating financial assets – may be perceived as temporary.

... particularly by reducing the value of collateral

Although researchers disagree on the estimates of the wealth effect on consumption, the impact of housing wealth is generally assumed to be significant – ranging in several studies between 3 and 7 cents per dollar in Australia, Canada, the United States and the United Kingdom. It is assumed to be relatively small for the euro area.[3] The decline in homeowner equity is likely to cause particularly large reductions in spending among households that had borrowed against housing equity to finance consumption. The fact that loose credit standards in some countries had made borrowing against collateral considerably easier during the upswing could lead to a strong negative effect as standards are tightened. It is possible that asset price declines that leave many households with large negative equity generate asymmetric wealth effects on consumption.

In addition, increased financial vulnerability stemming from such a large loss of wealth may lead households to shift away from less liquid assets

[3] See the recent review of estimates of wealth effects on consumption in European Central Bank, "Housing wealth and private consumption in the euro area", *ECB Monthly Bulletin*, January 2009.

In addition, households may invest less in durable assets ...

(houses mainly, but also durable goods) towards more liquid, financial assets. In particular, highly indebted households with substantial contractual debt obligations may increase their financial saving and reduce spending on housing, cars and other high-value consumer durables.[4]

... and increase their saving for retirement

Furthermore, the steep decline in the value of pension fund assets may force individuals nearing retirement who have defined contribution pension schemes – in which benefits are linked to the market value of assets – to increase saving or defer retirement. In the case of defined benefit plans, the large funding gaps could harm the financial position of the corporations sponsoring them and reduce their ability to provide guaranteed benefits or maintain existing employment.

But the impact is likely to vary across economies

That said, the impact of the wealth contraction is likely to vary across countries depending on institutional arrangements. Equity extraction from housing wealth was significant in Australia, Canada, the United Kingdom and the United States during the upswing, so household spending is likely to be more affected in these countries than in others. Some estimates suggest that, in the United States, about 1¾% of consumption annually was financed through home equity withdrawals during 2001–05, or 3% if withdrawals used to repay non-mortgage debts are included.[5] In the United Kingdom, home equity withdrawal has reversed, plummeting from over 7% of post-tax income in 2003 to –1% in 2008. By contrast, equity extraction played a relatively minor role in household spending in the euro area as a whole because of both a low home ownership ratio and, in some countries, a less developed mortgage market.

A key risk is a further sharp rise in household saving

Nevertheless, the fact that household debts increased so much in so many countries suggests that large wealth and income losses are likely to raise the saving rate still further in much of the advanced world. How protracted this rise might prove to be remains uncertain. In the 1970s US recession, the household saving rate went from a low of 8.0% in mid-1972 to a peak of 12.5% in mid-1975. A similar trough-to-peak rise in the saving rate was observed in the early 1980s US recession. In contrast, the 1990s and early 2000s recessions had little impact on the saving rate. The rate of household saving in the current US recession was, however, much lower at its lowest point than in previous recessions, and household indebtedness much higher at its peak. The increase in saving could thus be stronger and more protracted than in the past. Household saving rates could also rise further in Australia and the United Kingdom as well as in several euro area economies (eg Ireland, the Netherlands and Spain), where they are still below their historical averages.

### *Corporate balance sheets*

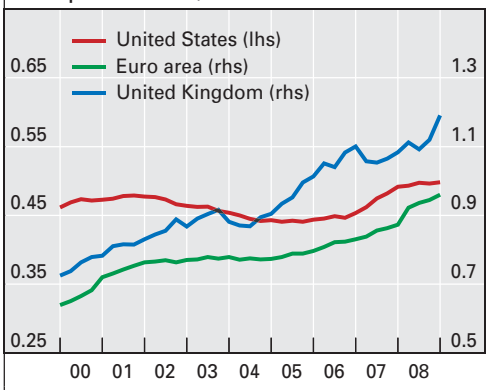
Unlike in the household sector, debt levels in the non-financial corporate sector remained fairly stable or even fell during the first half of the 2000s.

[4] This factor appears to have played an important role in the rise of US household saving following the 1970s stock market downturn; see F Mishkin, "What depressed the consumer? The household balance sheet and the 1973–75 recession", *Brookings Papers on Economic Activity*, vol 8, no 1, 1977, pp 123–74.

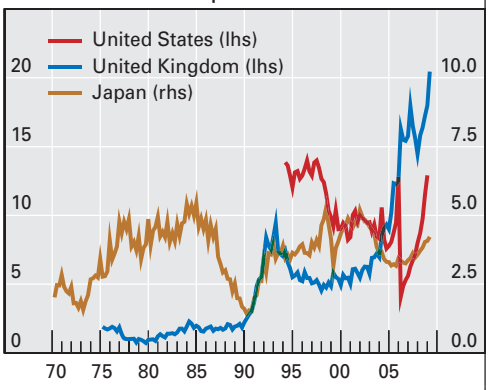
[5] See A Greenspan and J Kennedy, "Sources and uses of equity extracted from homes", *Finance and Economics Discussion Series*, 2007-20, Board of Governors of the Federal Reserve System, March 2007.

## Indicators of corporate vulnerability

Corporate debt/GDP ratio[1]




Number of bankruptcies[2]




[1] Loans and debt securities liabilities of non-financial corporations. [2] In thousands; for the United States, business bankruptcy filings; for the United Kingdom, bankruptcy orders; for Japan, business failures.

Sources: Datastream; national data. Graph IV.5

Between 2005 and 2008, however, corporate debt levels as a percentage of GDP rose considerably (Graph IV.5). The crisis further weakened balance sheets by sharply reducing profitability as well as the value of corporate investments. In addition, widening credit spreads cut the access of many firms to capital markets, leading to major funding problems.

Corporate balance sheets have also weakened ...

During 2008, US non-financial non-farm corporations suffered an aggregate decline in net worth of 7%; this was led by a sharp decrease in the value of their real estate assets (down 12.8%) and a somewhat smaller decline in their financial net worth (down 5.3%). In contrast, net financial worth (excluding equity) of euro area and Japanese non-financial corporate firms deteriorated much more rapidly, falling by about 50% in 2008. Corporate sector distress has risen to very high levels, with the number of corporate bankruptcies approaching or exceeding historical peaks in many industrial economies (Graph IV.5).

... in all major industrial economies ...

The weakening of corporate financial positions and profitability seems likely to reduce business investment, with feedback effects on the economy and balance sheets. The severity of such negative financial accelerator effects depends on the structure and the initial strength of corporate balance sheets. In the euro area and the United Kingdom, outstanding gross corporate financial liabilities (including debts, trade credits and other liabilities) were about 130% of GDP at the end of 2008. That level, which is well above the 1990s average, represents a heightened vulnerability to adverse financial shocks. Although US corporate financial liabilities have also risen, reaching 90% of GDP by the end of 2008, they do not seem to be excessive relative to the 1990s average.

... raising the likelihood of further cuts in investment

*The downturn in the credit cycle*

The crisis has provoked a sharp turn in the credit cycle. Sizeable policy rate cuts have helped bring down interest rates on funds borrowed by households and businesses over the past year. But the impact of interest rate reductions

Moreover, tighter lending standards are reducing credit availability ...

on credit flows has been muted by a sharp tightening of non-price lending standards by banks (see Chapter III).

... particularly to households, but increasingly to businesses ...

Aggregate private credit growth in many advanced economies fell over the past year or so, most dramatically in residential credit markets. Nominal housing credit (excluding home equity loans) contracted at an annual rate of 1–2% from the second quarter of 2008 to the first quarter of 2009 in the United States, and it stopped growing in the euro area by March 2009. Consumer credit slowed significantly in many advanced countries, the exception being the United States, where it grew at an annual rate of 9% in the first quarter of 2009. Although business credit continued to expand in many countries, it was probably driven by an increase in the use of existing credit lines rather than by new lending.

... reinforcing spending cuts

While the credit squeeze has been holding back potential first-time home buyers and other credit-constrained consumers, declines in income appear to have made more households credit-constrained. The disappearance of alternative financing offered in the past by non-bank lenders has tended to magnify such effects. Business investment has also suffered – recent lending surveys report significant cuts in new credit lines to firms, particularly in the United States. In addition, with growth weakening and balance sheet positions deteriorating rapidly, the credit downturn is being exacerbated by a substantial reduction in credit demand as firms scale back investment plans and households reassess their income and wealth prospects.

The depth of the credit downturn is highly uncertain

The depth and duration of the credit downturn will thus depend on how banking system deleveraging (see Chapter III) interacts with balance sheet adjustments by firms and households. While such interaction is hard to predict, past credit and financial crises can provide some guidance.

Past US cycles suggest a prolonged impact on credit and spending ...

It is useful to compare the current US credit cycle with previous US cycles, even though their proximate causes are different. In particular, the early 1990s credit market downturn provides an interesting benchmark (Graph IV.6). Even though losses from the reduced value of commercial property were modest, real private credit fell for 14 consecutive quarters beginning in the third quarter of 1990. The ratio of credit to GDP also contracted during this period. The close link between the credit and household spending cycles was notable, although the credit contraction ultimately proved to be more protracted than declines in household spending. In addition, non-residential investment weakened considerably in the 1990s downturn.

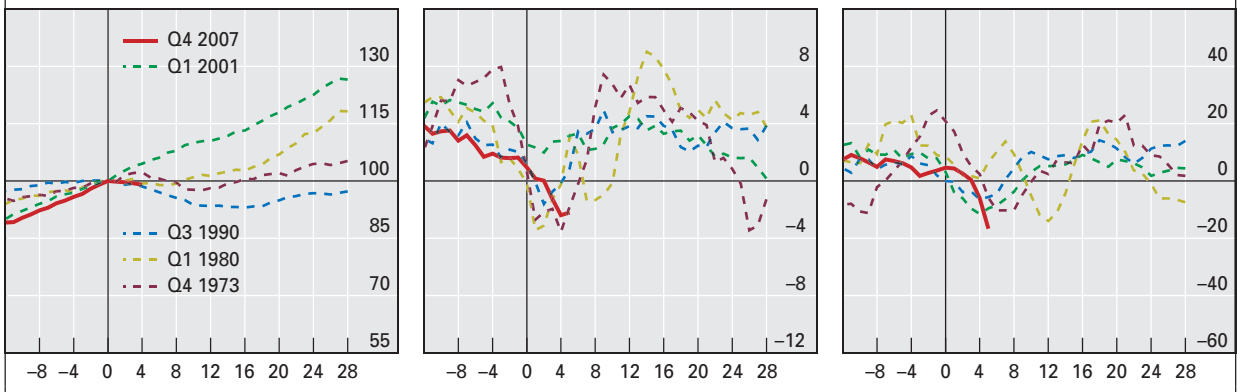
... as in the Nordic banking crises ...

Another useful point of reference is provided by the 1990s Nordic banking crises, in which the booms and busts of real estate prices also played a key role. The Nordic crises precipitated a contraction in the credit/GDP ratio in the region that lasted five to seven years and were followed by a protracted decline in spending. In Norway and Sweden, household spending and business investment both weakened well before the peak in the output cycle and contracted for several years following the crises. Even so, as discussed in Chapter VI, differences in crisis resolution regimes also matter. By the time authorities intervened in the Nordic crises, credit and economic activity had already deteriorated significantly. By contrast, the authorities have intervened

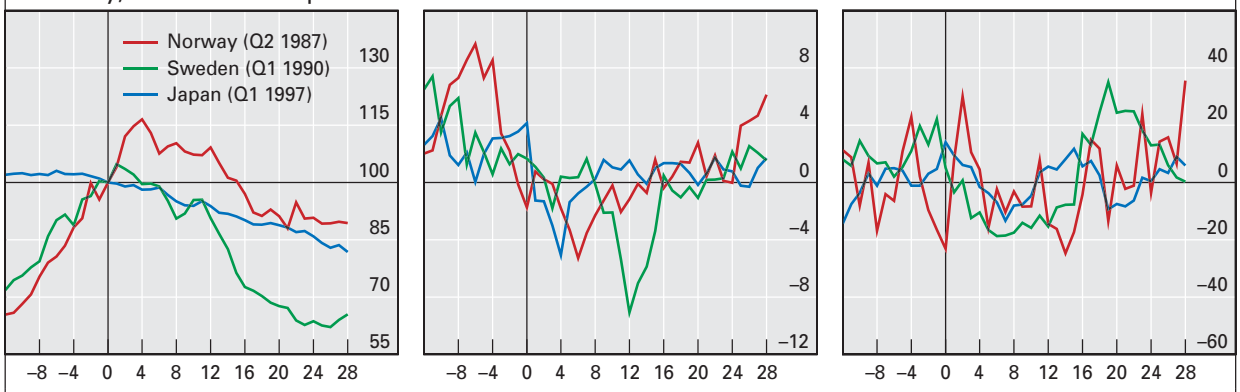
## Credit and spending over selected business cycles[1]

Private credit/GDP[2] | Real household spending[3, 4] | Real non-residential investment[3, 5]

United States




Norway, Sweden and Japan




[1] Period zero and dates in the panel legends refer to the peak of the output cycle; for the United States, peak dates are from the National Bureau of Economic Research (NBER). [2] Domestic credit to the private sector as a percentage of GDP, rebased on the peak of the business cycle. [3] Annual changes, in per cent. [4] Real private consumption plus real private residential investment. [5] Total real private fixed investment minus real private residential investment.

Sources: IMF; OECD; national data. Graph IV.6

at an early stage of the credit and business cycle in the current crisis in order to cushion the downturn.

... and the Japanese banking crisis

Of relevance to current problems in the household sector is Japan's experience in the 1990s, which illustrates the adverse interaction between a banking crisis and a large overhang of debt in the corporate sector. The collapse of asset prices in Japan in the late 1980s increased bank losses and severely weakened the balance sheets of non-financial corporations, which had debt levels exceeding 150% of GDP in 1990. This led to a protracted period of debt reduction, cuts in capital spending and weak demand for credit. With the corporate sector debt/GDP ratio falling sharply in subsequent years, the credit/GDP ratio also contracted.

*Factors accentuating and propagating the recession*

Sharp falls in employment are aggravating the downturn ...

Balance sheet and credit market adjustments have an enduring effect on the economy, but their short-run impact in the current crisis has been aggravated by several cyclical factors. One is the slump in employment triggered by

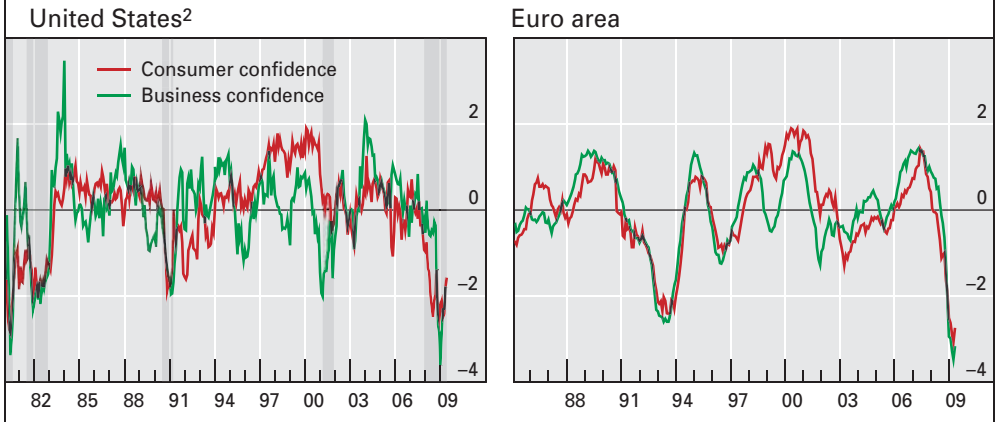
the growing threat of business bankruptcies, which has greatly added to households' financial uncertainty. In the United States, for instance, total hours worked were cut at an annualised pace of 9% in the first quarter of 2009 following an equally large cut in the preceding quarter, lifting the unemployment rate to 9.4% by May 2009. While the current US employment cycle has already proved to be quite deep by historical standards, according to May consensus forecasts the US unemployment rate is expected to be approaching 10% by 2010. In the euro area, sustained growth in the labour supply, coupled with weak demand for labour, was behind the steady increase in the unemployment rate, which reached 9.2% by April 2009.

Employment uncertainties facing euro area households could last longer than in the United States, where the employment cycle tends to be shorter. In the 1980s and 1990s downturns, for instance, employment fell for 12 and eight quarters, respectively, in the euro area compared with about four quarters in the United States. Employment in Japan has continued to be weak since the late 1990s. A marked decline in the ratio of job offers to applicants since the beginning of 2009 suggests that the employment downturn in Japan is likely to deepen further.

... as is fragile confidence ...

A second, and related, cyclical factor is the sharp weakening of consumer and business confidence (Graph IV.7). In the past, confidence tended to explain a small part of spending, after controlling for other major determinants of consumption such as income, wealth and interest rates.[6] However, if weaker confidence reflects expectations of lower future income, it may foreshadow a downward shift in future spending. A key risk is that weak confidence becomes self-fulfilling by reducing spending and employment and increasing income uncertainty.

## Confidence indicators[1]

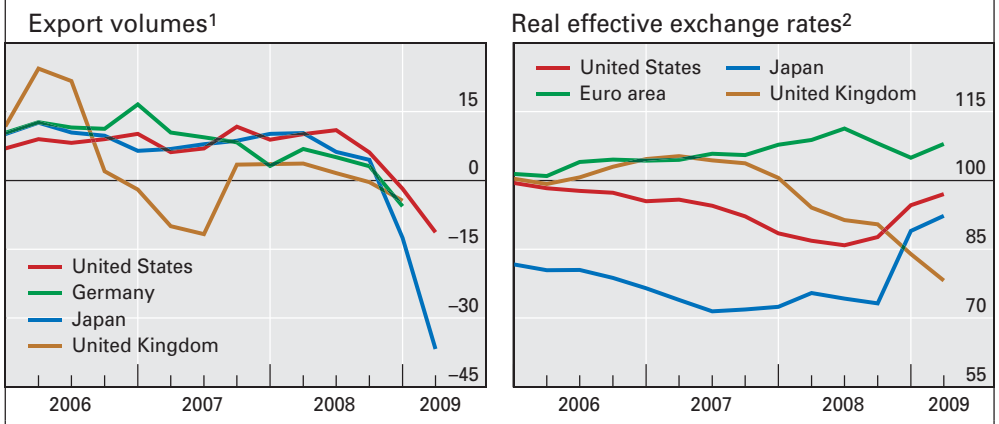



[1] Normalised data, measured as the difference between the indicator and its average (since 1980 for the United States, since 1985 for the euro area), expressed in points of standard deviation. [2] Shaded areas refer to periods of recession dated by the NBER.

Sources: Datastream; national data. Graph IV.7

[6] For recent evidence, see A Al-Eyd, R Barrell and P Davis, "Consumer confidence indices and short-term forecasting of consumption", *The Manchester School*, vol 77, no 1, January 2009, pp 96–111.

## Exports and exchange rates




[1] Annual changes for real exports of goods and services, in per cent. [2] BIS broad index, 1994–2005 = 100; quarterly averages.

Sources: National data; BIS. Graph IV.8

A third cyclical factor is the sharp decline in international trade (Graph IV.8), which has contributed to the spreading and deepening of the downturn across economies. The worldwide collapse of manufacturing demand has affected all advanced countries, but those heavily dependent on manufacturing exports, especially Germany and Japan, have been hit the hardest. Moreover, as Germany is the major hub of the European production network, its loss of export business has been felt beyond its borders. Australia and Canada have been affected by a fall in commodity prices, although the negative impact in Australia has been muted not only because the country is a net importer of oil but also because the fall in agricultural prices has been relatively modest.

... along with falling trade volumes

A fourth factor is changes in exchange rates. In particular, a sharp appreciation of the real effective value of the yen since late 2008 has depressed Japan's exports. In contrast, the tradables sector in the United Kingdom has benefited from a substantial reduction in the effective value of sterling. A real depreciation of the euro also helped euro area exports in 2008, but the exchange rate reverted to its appreciation path in the first quarter of 2009. In the United States, however, the dollar's appreciation during the second half of 2008 and the first quarter of 2009 has meant that the exchange rate, on balance, has become more neutral in the evolution of trade over the past year.

## Inflation developments in industrial economies

Headline inflation has fallen rapidly in recent months ...

The downturn has led to a sharp decline in inflation pressures in industrial economies. Not only have year-on-year headline inflation rates fallen rapidly since mid-2008 (Graph IV.9), but by the first quarter of 2009 they became negative in the United States and Japan and fell to zero in the euro area by May. Although an assessment of inflation prospects is complex under current conditions, recent disinflation has raised concerns among many observers about risks of deflation in the short run.

... led by the slump in commodity prices ...

Two major factors are responsible for current disinflation pressures. One is the 55% decline in oil prices between mid-2008 and May 2009, which has led to a marked reduction in import prices in many oil-importing countries. In addition, forecasts of global oil demand for 2009 have been revised downwards. In May 2009, the International Energy Agency expected a decrease in world oil demand of 2.6 million barrels per day in 2009 compared with 2008, the sharpest single-year fall since 1981. Metal prices, which started to decline in 2007, dropped more sharply in the second half of 2008 and in early 2009. Food prices have also fallen, although not as dramatically as oil prices because of their relatively weak link to global growth. Softening demand has also resulted in substantially lower shipping rates.

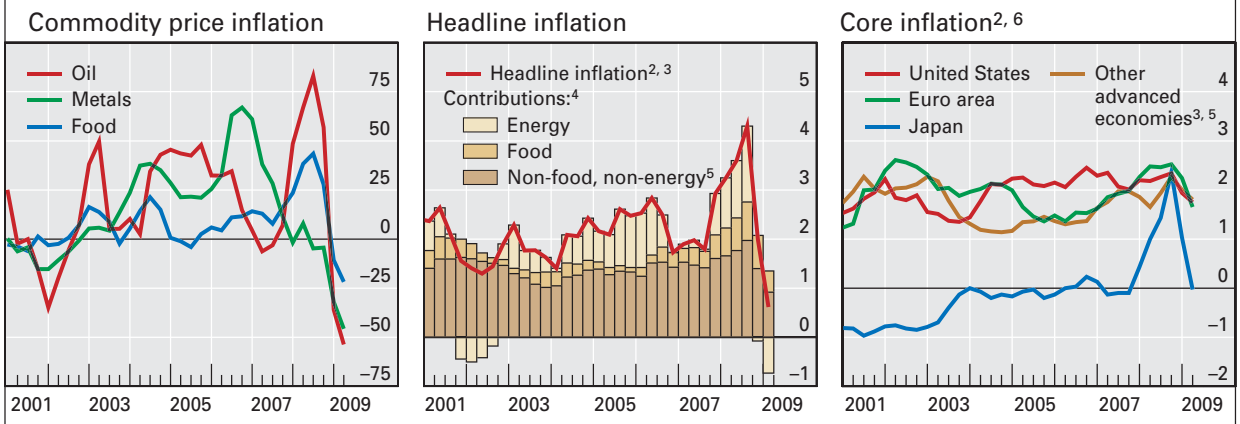
... and considerable economic slack

The second factor is that downward pressures on prices have been accentuated by considerable economic slack. Capacity utilisation in manufacturing has fallen particularly heavily in the major advanced economies. Notwithstanding the substantial uncertainties involved, the projected output and unemployment gaps suggest that the level of economic slack is expected to remain high in 2009 and 2010. Core inflation has declined sharply in Japan since the beginning of 2009, although it remained relatively more stable in the United States and the euro area up to April 2009 (Graph IV.9). There is a risk that the unusually synchronised downturn, combined with a possible jump in household saving, could well aggravate disinflation pressures over the next year or so.

Prospects for inflation are uncertain

Yet there is considerable uncertainty regarding inflation prospects. First, the timing and extent of the impact on spending of recent stimulus measures remain unclear. Developments since the beginning of 2009 have somewhat reduced downside risks to growth forecasts. In addition, there is no reliable estimate of the macroeconomic impact of the large-scale, unconventional monetary policies recently introduced by central banks.

## Inflation in commodity and consumer prices[1]




[1] Changes over four quarters, in per cent unless otherwise stated. [2] In selected advanced economies: Australia, Canada, Denmark, the euro area, Japan, New Zealand, Norway, Sweden, Switzerland, the United Kingdom and the United States. [3] Weighted average of CPI changes using 2005 GDP and PPP weights. [4] In percentage points. [5] Headline inflation excluding food and energy. [6] For the United States, change in the deflator for personal consumption expenditures excluding food and energy; for the euro area, change in consumer prices excluding energy and unprocessed food; for Japan, change in consumer prices excluding fresh food.

Sources: IMF; OECD; Datastream; national data; BIS calculations. Graph IV.9

## The impact of the current crisis on potential output

Estimates of potential output and the output gap help monetary authorities gauge the current state of the economy. Potential output is usually defined as the maximum level of output that an economy can achieve without causing inflationary pressure, and is largely determined by supply side factors, including technological progress, demographic trends and institutional arrangements in labour and financial markets. Yet potential output is unobservable and thus has to be estimated. Even in normal times, uncertainties surrounding potential output estimates can be considerable because changes in structural factors might be hard to detect. In addition, frequent and sometimes substantial revisions of data on GDP and its major components diminish the usefulness of potential output estimates for real-time policymaking. For example, mean absolute revisions to US GDP growth have tended to be large, ranging from 0.5 (first annual revision) to 1.3 percentage points (third). Around cyclical turning points, mean absolute revisions are substantially larger, often well over 2 percentage points.

A key question in the current conjuncture is to what extent potential output might be affected by the ongoing financial crisis. Several factors are likely to have an impact on the level of potential output, its growth rate, or both. First, the crisis could lead to a severe disruption of the credit intermediation process for years to come, reducing credit availability and increasing risk premia. Second, potential output could be adversely affected by a possible rise in structural unemployment. The protracted nature of the current crisis implies that a non-negligible proportion of workers could permanently drop out of the effective labour force. The natural rate of unemployment could therefore be markedly higher in some countries following the global recession, as many jobs might have vanished forever in industries such as automobile manufacturing and financial services. In the United States, "permanent" layoffs (of workers not expected to ever regain the same job) rose to a record 52.9% of the unemployed in May 2009.

Third, the financial crisis could have a negative impact on total factor productivity by sharply reducing funding for research and development activities. In Japan, for instance, a fall in the growth rate of total factor productivity and a drop in average hours worked per week from 44 to 40 between 1988 and 1993 were found to have led to a change in the slope and level of the steady state growth path (Hayashi and Prescott (2002)). Fourth, the global nature of the current downturn and the high degree of global economic integration could magnify the impact of the crisis on potential output. Given the significant increase in cross-border lending and investment in the past decade, a financial crisis in one country or region could result in large negative effects on other economies. If factors of production are not perfectly mobile, a loss of export markets in some countries could, for instance, render a significant part of their capital stock and labour force idle for an extended period of time, leading to a decline in potential output.

Evidence based on past crises provides some illustrative guidance about the likely effects of the current episode on potential output. In a panel study of output behaviour in 190 countries, Cerra and Saxena (2008) found large and persistent actual output losses associated with financial crises, with output falling by 7.5% relative to trend over a period of 10 years in the event of a banking crisis. Based on the same methodology and using data for 30 OECD economies from 1960 to 2007, Furceri and Mourougane (2009) found that, on average, a financial crisis could lower potential output by between 1.5% (OECD production function-based measures) and 2.1% (measures based on the Hodrick-Prescott filter) within five years. More severe crises (Spain in 1977, Norway in 1987, Finland and Sweden in 1991, and Japan in 1992) were estimated to have a far greater negative impact on potential output (3.8%).

Empirical studies also indicate significant negative impact of financial crises on the growth rate of potential output. Haugh et al (2009), for instance, examined six major banking crises (Spain in 1982, the United States in the 1980s, Finland, Norway and Sweden in 1991, and Japan in 1997). They found that actual output losses were much greater in downturns associated with a major banking crisis. Compared with the preceding five-year period, they found that the growth of potential output in the five years after the onset of a banking crisis was reduced by 0.9, 0.5, 0.4 and 0.3 percentage points in Norway, Finland, Japan and Sweden, respectively.

To a large extent, the impact of the current crisis on potential output will depend on how soon and how effectively government policy measures succeed in restoring credit market intermediation while minimising any distortionary effects they may generate. Steps designed to safeguard labour market flexibility and to boost long-term productivity growth could also play a significant role in supporting potential output.

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Hayashi, F and E Prescott (2002): "The 1990s in Japan: a lost decade", *Review of Economic Dynamics*, vol 5, no 1, January, pp 206–35.

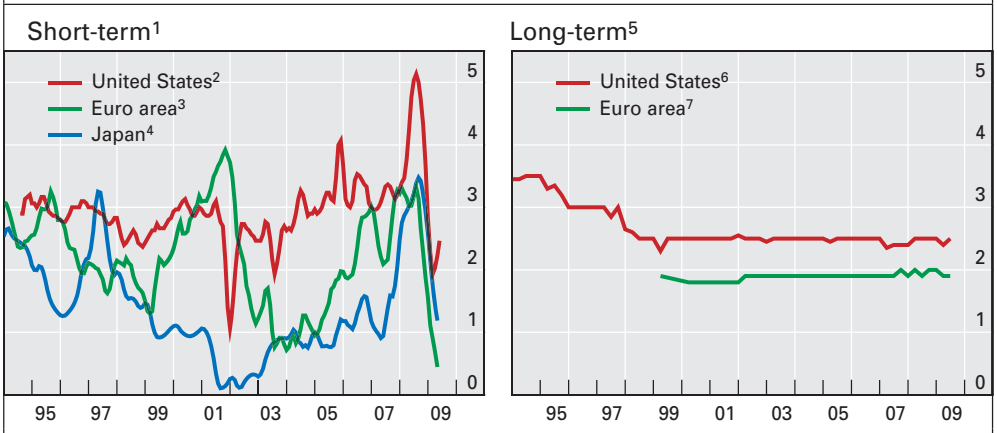
Second, potential output may be significantly reduced by the disruption in the credit intermediation system, falling trade and investment, and a possible rise in structural unemployment rates associated with the financial crisis (see box). If so, the output gap might be less negative than current trends would suggest, leading to an overestimation of disinflation pressures. Following the early 1970s oil price shock, for instance, the adverse impact of higher oil prices on potential output may well have been underestimated in advanced economies, leading to an underestimation of inflationary pressures.

In addition, labour costs are still rising

Third, recent wage developments do not suggest that a downward wage-price nexus has developed, at least in the G3 economies. Unit labour costs, for instance, rose by 4.8% in the euro area in the fourth quarter of 2008 year on year. In the United States, unit labour costs have also tended to rise at a faster rate in 2009 (2.2% in the first quarter, up from 1.6% in the fourth quarter of 2008). The rise in unit labour costs may partly reflect a cyclical downturn in productivity as well as the lagged adjustment of employment to a fall in

## Inflation expectations

In per cent




[1] Based on consumer surveys for one-year-ahead inflation; three-month moving averages. [2] Median expected inflation. [3] Based on a diffusion index; figures are normalised by mean and variance of actual HICP inflation. [4] As of mid-2004, figures are calculated from shares of ranges in the questionnaire. [5] Based on surveys of professional forecasters. [6] Ten-year-ahead inflation. [7] Five-year-ahead inflation.

Sources: European Commission; Cabinet Office, Government of Japan; Datastream; University of Michigan; national data; BIS calculations. Graph IV.10

output, but it is also likely to reflect the degree of wage flexibility in an economy. In the euro area economies, for instance, firms' ability to reduce labour costs may be constrained by a degree of downward nominal wage rigidity.

Much depends on expectations about inflation

Such uncertainties highlight the key role of expectations in inflation prospects. Short-term inflation expectations of households in the G3 economies have fallen markedly since mid-2008, but long-term expectations have remained relatively stable (Graph IV.10). One downside risk is that a further sharp reduction in short-term inflation expectations, combined with doubts about the capacity of policy to arrest the downturn, may lead households to postpone spending, resulting in a larger than projected fall in the inflation rate or even a sustained period of declining prices. But if agents base their spending decisions on steadier expectations about long-term inflation, the risk of deflation will be considerably reduced. Also, a danger exists that long-term inflation expectations will rise if private agents come to believe that public debt burdens will not be manageable without higher inflation to erode that debt.[7]

## Summing up

The global financial crisis has led to an unprecedented recession accentuated by rapid declines in trade volumes, large employment cuts and a massive loss of confidence. How deep and prolonged the downturn will be is uncertain. In the industrial countries, there are some signs that the rapid pace of decline in spending witnessed since the fourth quarter of 2008 has started to ease. But a strong, sustained recovery in those countries could be difficult given attempts by households and financial firms to repair their balance sheets. Nevertheless, substantial fiscal stimulus and exceptional monetary easing in many countries should help bring the recent contraction to an end. The policymakers' task in the near term will be to ensure a sustained recovery. In the medium term, however, it will be to ensure that policies are adjusted sufficiently to maintain the stability of long-term inflation expectations.

[7] See H Hannoun, "Long-term sustainability versus short-term stimulus: is there a trade-off?", speech at the 44th SEACEN Governors' Conference, Kuala Lumpur, 7 February 2009.