

Chapter 1

GENERAL ASSESSMENT OF THE MACROECONOMIC SITUATION

Overview

**Growth is slowing
in response to strong
headwinds**

The odds are improving that financial market turmoil has passed its peak. Still, its fallout will continue to act as a brake on growth for considerable time to come. Other headwinds causing the on-going slowdown in activity in the OECD area are likely to continue, including cooling housing markets and high commodity prices. Weakness has been most marked in the United States. However, despite buoyancy during the first quarter of 2008 in Japan and Germany, the slowdown is set to generalise across virtually all OECD economies (Table 1.1). There is also some slowdown outside the OECD area, albeit partly induced by policies aimed at restraining inflation.

Table 1.1. **Growth is slowing sharply**

OECD area, unless noted otherwise

	Average 1995-2004	2005	2006	2007	2008	2009	2007 q4	2008 q4	2009 q4
	Per cent								
Real GDP growth¹	2.7	2.7	3.1	2.7	1.8	1.7	2.6	1.3	2.2
United States	3.1	3.1	2.9	2.2	1.2	1.1	2.5	0.3	1.9
Euro area	2.2	1.7	2.9	2.6	1.7	1.4	2.1	1.4	1.7
Japan	1.1	1.9	2.4	2.1	1.7	1.5	1.5	1.7	1.6
Output gap²	-0.3	-0.3	0.2	0.4	-0.3	-1.1			
Unemployment rate³	6.6	6.5	6.0	5.6	5.7	6.0	5.5	5.9	6.0
Inflation⁴	3.5	2.2	2.3	2.2	3.0	2.1	2.8	2.8	1.9
Fiscal balance⁵	-2.3	-3.0	-1.5	-1.5	-2.5	-2.6			

1. Year-on-year increase; last three columns show the increase over a year earlier.


2. Per cent of potential GDP.

3. Per cent of labour force.

4. Private consumption deflator. Year-on-year increase; last 3 columns show the increase over a year earlier.

5. Per cent of GDP.

Source: OECD Economic Outlook 83 database.

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**A generalised but not
uniform slowdown**

Area-wide growth, after reaching a trough of ½ per cent (annualised) in the second quarter, the lowest since the slump following the high-tech bubble, is projected to remain weak through the rest of this year. This aggregate picture masks considerable divergence in growth across countries. Indicative of such divergences, at the end of 2007 the United States, the euro area and Japan were all estimated to be running at capacity, but by the end of 2009, output will have fallen more than 2% below potential in the United States, ¾ per cent below in the euro area and remain slightly above potential in Japan. Other economies which will be among the hardest hit, judged by how far activity is below potential

output, include: those most directly affected by financial turmoil, notably Iceland; those where housing downturns are most pronounced, especially Ireland and Spain; the United Kingdom which may be more vulnerable because of the importance of financial markets and links between financial turmoil, the mortgage market and spending by households; those with closest ties to the United States, in particular Canada and Mexico; and those starting from a weak position, notably Italy. Growth in the emerging markets, while moderating, remains strong, especially in China.

Financial turmoil implies risks on both sides

Continued turbulence in financial markets has spread to new markets and institutions, reaching beyond the origin of the problems with the US subprime mortgages and derived products and leading to a generalised wariness and re-pricing of risk. Recent signs suggest that conditions in some financial markets are improving, but further financial disruption cannot be excluded, with causality likely to flow in both directions between weak activity and financial pressures. While the resulting activity risks imply a fat downside tail to the probability distribution around the projection, there are also upside risks associated with a faster dissipation of financial turmoil. Overall, the projection is best characterised as a most likely outcome.

A pick-up in inflation expectations may inhibit policy stimulus

The case for macroeconomic policy stimulus has been stronger in the United States than in Europe or Japan and both US monetary and fiscal policy have already acted forcefully. Going forward, the scope for policy support to decelerating activity depends on inflation developments. Soaring oil, food and other commodity prices have led to a sustained pickup in headline inflation rates and increases in producer price inflation suggest further impending cost pressures. In these circumstances, a ratcheting up of inflation expectations remains a potent threat.

Policy rates should remain on hold in the major regions this year

Against this background, in the United States the current accommodative monetary policy stance should be maintained until the recovery takes hold, with the policy easing being reversed promptly once financial headwinds abate. By contrast, policy rates in the euro area are currently close to neutral, and the outlook for activity and inflation, together with the presence of strong automatic fiscal stabilisers and the disappearance of past exceptional budget revenue, do not point to a need for stimulus. In Japan, output is projected to remain above potential but, even so, underlying inflation is moving into positive territory at a very slow pace suggesting that policy rates should stay put for some time to come.

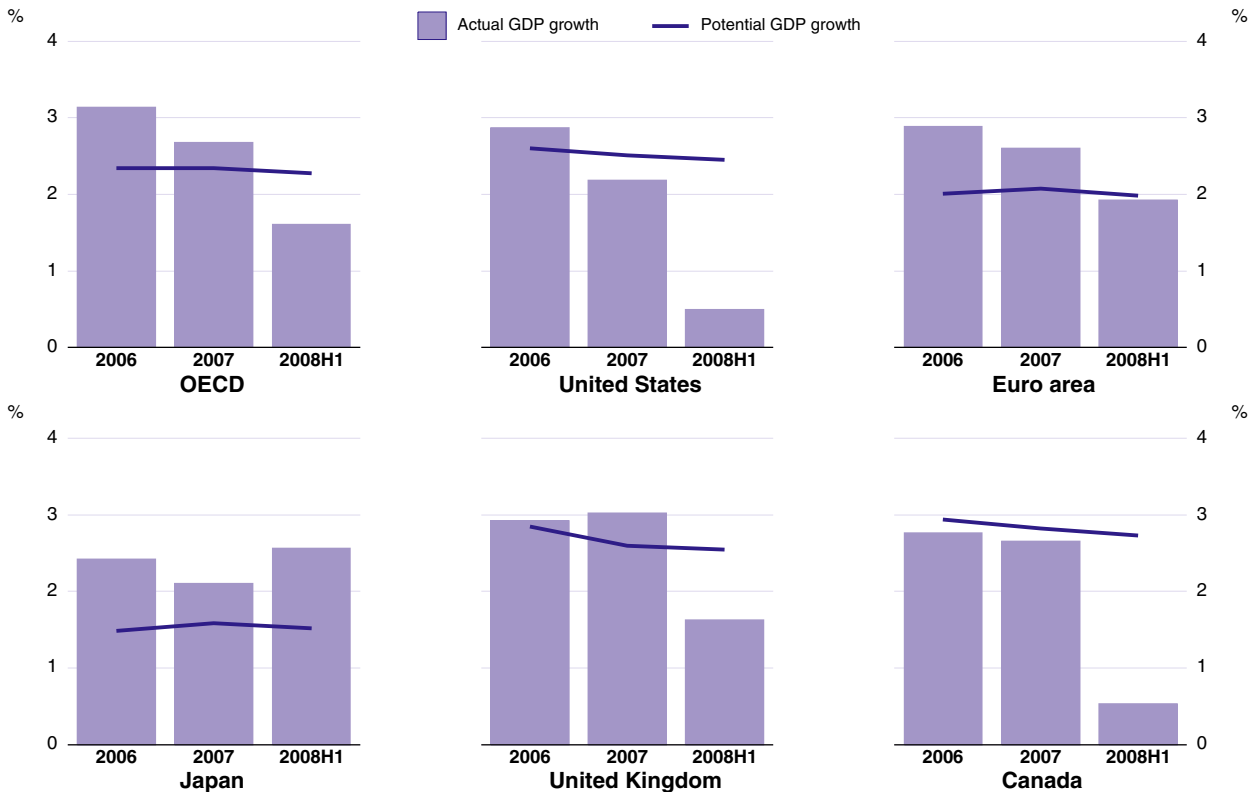
Recent developments

Growth is now slowing in the OECD area

The US slowdown has broadened


Activity has decelerated in a highly differentiated manner across most of the OECD area (Figure 1.1). The US economy has been very weak and growth might be negative in the second quarter of the year. The housing market remains massively oversupplied, with residential construction continuing to plunge at steep rates and house prices declining. Private consumption weakened significantly in the first part of 2008 as high inflation, driven by gasoline and food prices, reduces consumers' purchasing power, tighter credit begins to bite and falling house prices weighed on households' wealth and collateral. Business investment, which began decelerating last year, declined in the first quarter of 2008, reflecting the weakening of actual and prospective demand. By contrast, exports have remained relatively strong, benefitting from dollar depreciation and hitherto strong world trade growth. This, together with subdued imports, has led to a significant fall in the US current account deficit to just below 5% of GDP by the end of 2007, down from 6½ per cent in the middle of 2006.

Figure 1.1. **A generalised, but differentiated, slowdown**



Note: The value for 2008H1 is based on an annualised growth rate between 2007H2 and 2008H1 and is partly estimated.

Source: OECD Economic Outlook 83 database.

StatLink  <http://dx.doi.org/10.1787/363388866383>

The euro area has been relatively resilient

Activity in the euro area has held up well to date, with growth in the first quarter picking up to an annualised rate of 3% due to surprising strength in Germany and, to a lesser extent, France. However, much of the positive surprise in Germany may reflect temporary factors,¹ implying a “pay-back” subtraction from growth in the second quarter. Private consumption in the euro area continues to be sluggish in the face of rising inflation, driven by strong increases in energy and food prices. Over the past year, robust business investment and exports – which were particularly strong in Germany – have partly compensated for this weakness. However, there are increasing signs that the appreciation of the euro – up by some 10% in real effective terms since the beginning of 2006 – is damping export growth. Residential construction investment is falling, reflecting large corrections in a few countries, notably in Spain and Ireland, together with a continued slowing in most others.

Growth in Japan has moderated

In Japan, GDP grew at an underlying rate of some 2% last year, about ½ percentage point above potential and advanced strongly in the first quarter of this year as well. Recent strength reflects a rebound in housing investment after the disruption caused by the regulatory change introduced in the middle of last year as well a continuation of rapid export growth. However, business investment, which has been the other engine of growth in recent years, fell in the first quarter and softening business confidence and survey evidence point to further near term weakness. At the same time, rising gasoline and food prices will moderate the growth of private consumption.

China has continued to grow strongly...

Growth in major emerging market economies has continued to be brisk. In China the economy slowed to a still robust year-on-year growth rate of 10½ per cent in the first quarter of 2008. The contribution of exports continues to diminish and that of domestic demand to increase. Headline consumer price inflation remains high at above 8% in the first quarter. While sharp increases in food prices continue to be the main driver of headline inflation, upstream pricing pressures remain elevated with producer prices having accelerated in aggregate and across a broad range of industry segments. In response, the central bank has continued policy tightening, lifting interest rates and sterilising foreign exchange inflows via increased reserve ratios for commercial banks and bond issuance. Since the second half of last year, there has been a more rapid appreciation of the renminbi vis-à-vis the dollar, although in effective terms the appreciation has been much more modest.

1. The annualised growth rate in Germany in the first quarter was more than 6%, the highest in more than a decade, supported primarily by gross fixed capital formation and a significant contribution from stockbuilding. Part of this exceptional growth reflects temporary factors; in addition to the unusually large contribution from stockbuilding, construction activity was strong reflecting unusually mild weather conditions and the surge in business investment may be partly due to an overhang of orders placed last year to take advantage of generous depreciation allowances which have now expired.

... as have other emerging economies

Growth in India slackened by about 2 percentage points during 2007 to 8½ per cent year-on-year in the final quarter. At the same time, inflationary pressures have re-emerged. Growth in Russia accelerated in 2007 on the back of strong increases in investment and consumption, to slightly above 8% for the year. In Brazil, GDP growth firmed to 5½ per cent in 2007, the fastest pace of expansion since 2004, driven by continued strength in private consumption and a rebound in investment.

Labour markets are softening

Employment has declined sharply in the United States

As activity has weakened, employment growth in the OECD area has slowed (Table 1.2). The slowdown has been most marked in the United States where private payroll employment has fallen since the end of last year at a pace which in the past has signalled the onset of a recession. As a consequence the unemployment rate has risen to around the estimated structural rate of 5%, while several indicators are pointing to easing wage pressure (Table 1.3).

Labour markets remain tight in the euro area...

In the euro area the slowdown in employment growth is more recent and more moderate, so that the unemployment rate remains at its lowest level since at least the beginning of the 1990s, below the OECD's estimate of its structural level. Productivity growth has weakened further, leading to some pick-up in unit labour costs which going into 2008 were increasing at about 2% *per annum* (Table 1.3). While this pick-up is a feature of most euro area countries there are significant differences between them; in Germany the rate of increase is still well below the average, France is close to the average, while Italy and Spain are well above it. Moreover, weak productivity growth has allowed little room for increases in euro area real compensation per employee over the past five years, helping to explain both weak consumption and rising inflationary pressures.

Table 1.2. **Labour markets have begun to weaken**

	2005	2006	2007	2007 q3	2007 q4	2008 q1	2008 q2
Percentage change from previous period, seasonally adjusted at annual rates							
Employment							
United States	1.8	1.9	1.1	0.3	0.7	-0.6	-0.2
Japan	0.4	0.4	0.5	-1.5	0.9	-0.3	-0.2
Euro area	1.1	1.6	1.8	1.8	1.2	1.3	0.2
Labour force							
United States	1.3	1.4	1.1	1.0	1.2	0.0	0.9
Japan	0.1	0.1	0.2	-1.7	1.3	-0.7	0.0
Euro area	1.1	0.9	0.9	1.2	0.6	0.9	0.7
Unemployment rate							
	Per cent of labour force						
United States	5.1	4.6	4.6	4.7	4.8	4.9	5.2
Japan	4.4	4.1	3.9	3.8	3.9	3.8	3.8
Euro area	8.8	8.2	7.4	7.3	7.1	7.1	7.2

Note: For 2008, estimates and projections.

Source: OECD Economic Outlook 83 database.

StatLink  <http://dx.doi.org/10.1787/362765655161>

Table 1.3. **Wage developments remain moderate**

	2005	2006	2007	2007 q3	2007 q4	2008 q1	2008 q2
Percentage change from previous year							
Labour productivity¹							
United States	1.5	1.1	1.3	2.0	2.0	2.3	1.5
Japan	1.5	2.0	1.6	1.6	1.2	1.0	2.3
Euro area	0.6	1.3	0.8	0.7	0.3	0.5	0.6
Compensation per employee							
United States	3.5	4.0	4.4	5.0	3.8	3.3	3.8
Japan	0.1	0.2	-0.6	-0.8	-1.0	0.6	1.1
Euro area	1.5	2.2	2.3	2.2	2.3	2.2	2.8
Real compensation per employee²							
United States	0.3	0.8	1.7	2.5	1.2	1.2	2.1
Japan	1.4	1.1	0.1	-0.2	0.3	2.1	2.5
Euro area	-0.4	0.3	0.1	0.0	0.1	-0.1	0.5
Unit labour cost							
United States	2.2	3.0	3.3	3.0	2.2	1.3	2.6
Japan	-1.1	-0.8	-1.8	-1.9	-1.5	-0.5	-0.6
Euro area	1.1	1.1	1.7	1.6	2.3	2.0	2.4


Note: For the total economy, year-on-year increase; last 4 columns show the increase over a year earlier.

For 2008, estimates and projections.

1. Productivity is measured on a per person basis.

2. Deflated by the GDP deflator.

Source: OECD Economic Outlook 83 database.

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... and in Japan where there are encouraging signs of wage growth

Employment creation has also continued in Japan, although on a slowing trajectory, with the unemployment rate stabilising close to the lowest level in a decade. In the past, falling hourly compensation and unit labour costs have been a feature of Japan's deflationary trap. However, wages for full-time workers increased in early 2008 as a consequence of a tight labour market and because the shift towards lower-paid non-regular employment, which reduces wage costs, appears to have slowed.

Forces shaping the outlook and associated risks

OECD economies face a triple adverse shock as globalisation evolves

OECD economies are facing three adverse shocks which are reducing demand: financial turmoil, a downturn in the global housing cycle, and a squeeze on real incomes from soaring energy and food prices.² At the same time higher commodity prices are putting upward pressure on headline inflation, while higher oil prices and increases in the cost of capital resulting from the financial turmoil may be durably curtailing potential supply (Chapter 3). These three shocks are inextricably linked to the growing importance of emerging markets in the global economy. Most obviously, the increased demand for commodities from these countries has led to soaring prices. In addition, the credit, housing and asset price cycle which has now turned was fuelled by low interest rates on the back

2. To provide some rough estimates of how the major OECD economies would respond to these and other shocks, Appendix 1.A1 presents some ready reckoners based on the OECD's new Global Model.

of both the so-called global savings glut, to which emerging economies contributed importantly, and imported disinflation, as a result of penetration by cheap manufactured products.

Financial turmoil has deepened

Banks have been hit hard by the crisis

The turmoil that hit financial markets in the summer of 2007 has many features similar to previous credit crises (Reinhart and Rogoff, 2008), with a distinguishing characteristic this time around being the complexity and opaqueness of the financial assets involved. As in several previous crises, the most visibly affected institutions have been banks and, in the United States and elsewhere, many have already reported sizeable write-downs and credit losses linked directly or indirectly to the troubled subprime mortgage market, amounting so far to about \$380 billion.³ Banks are also being affected by an involuntary expansion of their balance sheets,⁴ while the share of risky assets they are holding has increased.

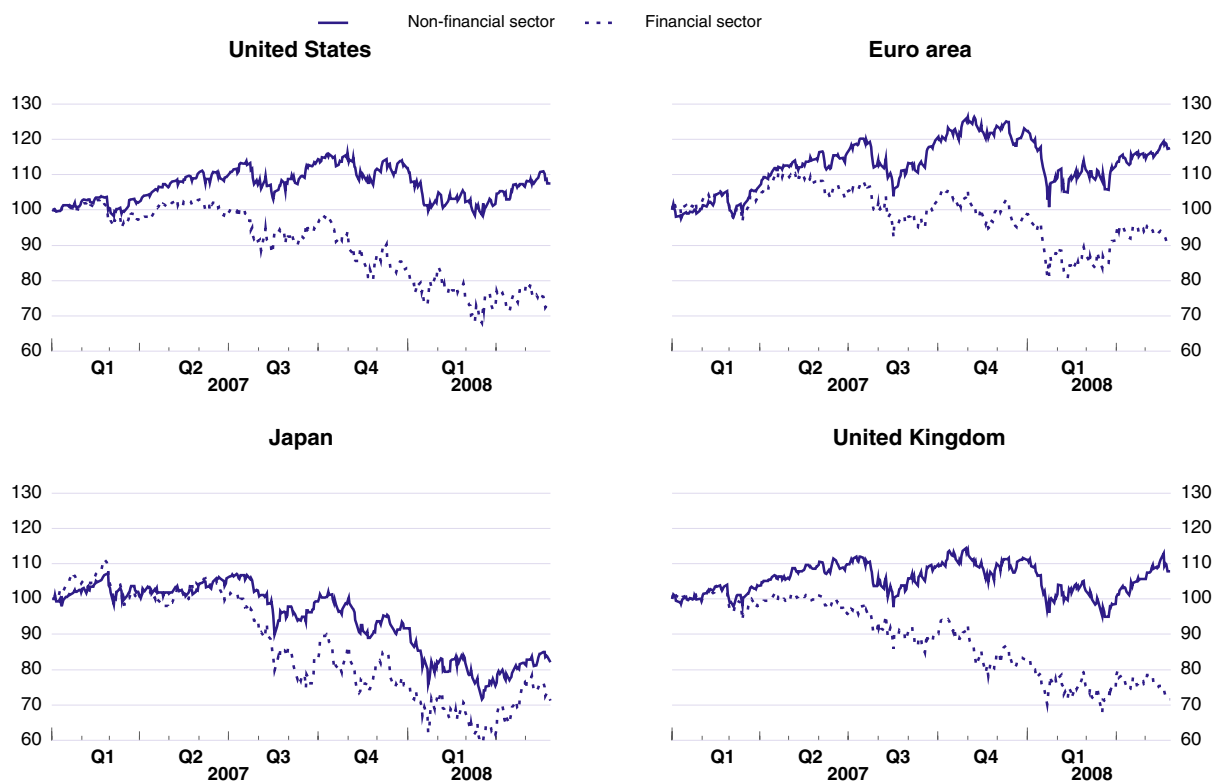
How balance sheets are repaired has growth implications

The problems that banks are encountering are playing a key role in the transmission of the crisis both to other financial institutions and to the real side of the economy. Going forward, much will depend on the manner in which bank balance sheets are restructured. In this respect, large-scale recapitalisation, or the transfer of assets to other agents, offers the best way to quickly restore the functioning of loan markets. Raising new capital has not been easy in a market where equity prices of financial institutions have been falling (Figure 1.2) and earlier high profile recapitalisations have entailed large losses for investors, including some

3. The estimate of reported credit losses and write-downs is based on recent data (19 May) from Bloomberg for more than 100 of the world's largest banks and securities firms. Some of these write-downs are based on mark-to-market values that may over estimate the fall in asset prices. Indeed, as pointed out for instance by the Bank of England (2008a), because of illiquidity, thin markets and the confidence crisis, current market prices have become unreliable predictors of potential losses and are likely to lead to over-estimations. OECD estimates of the total credit losses associated with residential mortgage backed securities range from \$350 to \$420 billion, although not all of the losses are in banks and security firms (Blundell-Wignall, 2008). Instead of market prices, these estimates rely on a default model approach and assume a 40% to 50% recovery rate on defaulting loans and an economic and house price scenario benchmarked against previous episodes. This price scenario implies, however, a smaller fall in house prices than the one assumed in this *Economic Outlook*, suggesting that total losses could be possibly higher unless the recovery rate on defaulting loans turns out to be better than expected. This estimate is nevertheless close to that by Greenlaw *et al.* (2008). It is much lower than the estimates in IMF (2008) that not only partly relies on market prices, but also includes possible losses on a wide range of other assets.
4. This is being driven by: i) the need to take back previously off-balance-sheet structured investment vehicles (SIVs); ii) previous over optimism with respect to warehousing of assets for future securitisation; and iii) the requirement to honour credit lines. This has been less the case in the euro area where securitisation had not reached the same level as in the United States and where banks have been able to continue to securitise loans to households and non-financial corporations. On the other hand, bank balance sheets show a clear acceleration of loans to other financial institutions reflecting notably the drawing on credit lines by conduits and SIVs (ECB, 2008).

Figure 1.2. **Share prices of financial institutions have fallen sharply**

Share price indices, 1 January 2007 = 100



Source: Datastream.

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sovereign wealth funds.⁵ This could change, however, once perceptions are in place that share prices have hit bottom though existing shareholders may be reluctant to accept dilution of their stake at rock-bottom prices. As concerns the transfer of assets, a number of recent transactions have allowed banks to sell off some of their loan-book. But such transfers remain limited to a few institutions and proposals to create an *ad hoc* structure to park bad assets, financed either by private or public money, have not succeeded.

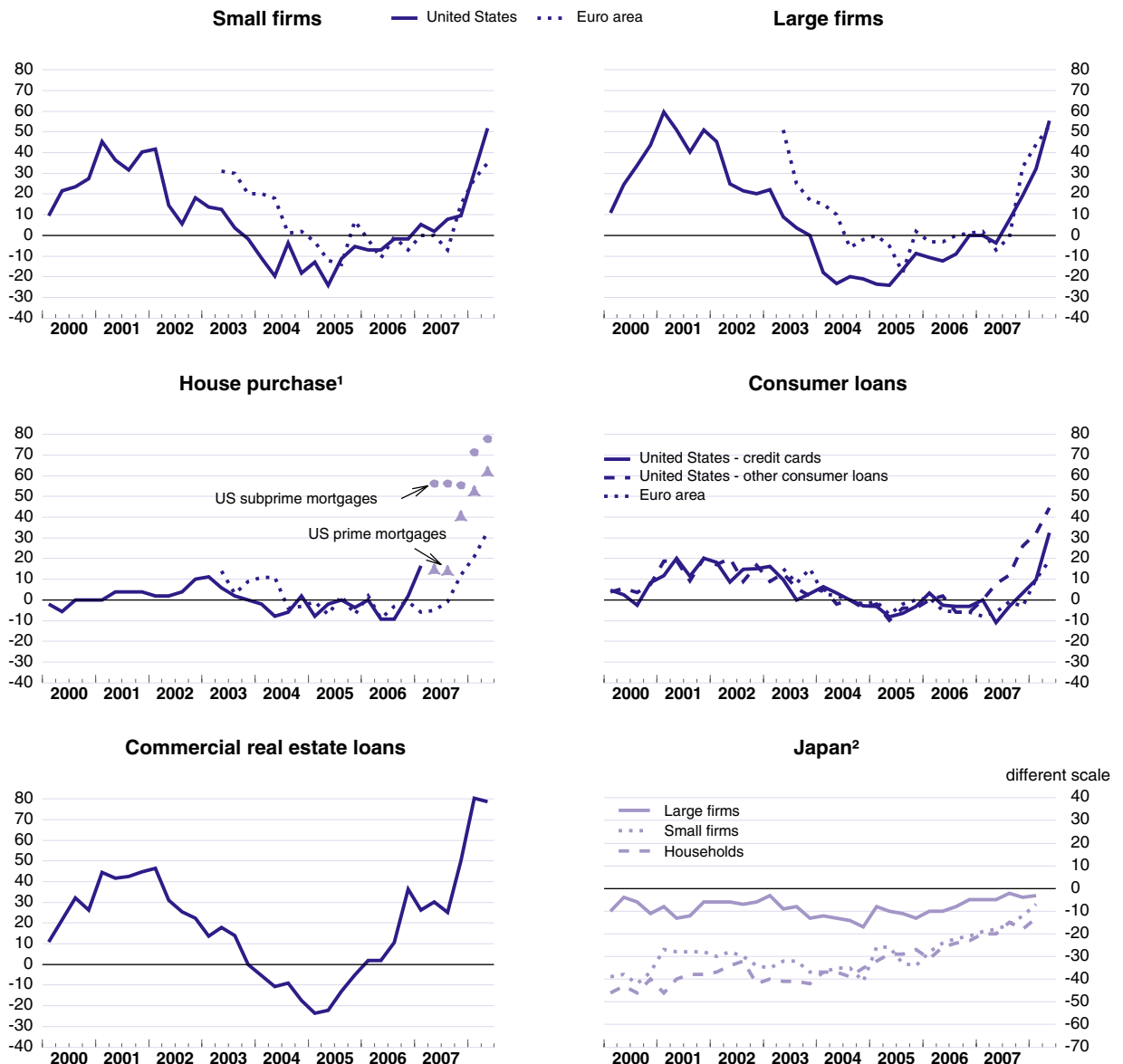
Credit to other financial institutions is being cut

The other option is to shrink balance sheets by reducing lending, which can have negative spillover effects to other areas of the economy, and in turn may trigger additional losses in the financial sector. Indeed,

5. Sovereign wealth funds (SWFs) have made an important contribution to the ongoing recapitalisation of banks, illustrating the important role they can play in economic development and stability in the host as well as home country. Nevertheless, more generally held perceptions that SWF investments might be motivated by political rather than commercial objectives may be a concern, which can most effectively be tackled by the home countries of SWFs taking steps to strengthen transparency and governance of the SWFs. At the same time, recipient countries should in turn avoid protectionist barriers to foreign investment and discrimination between investors (OECD, 2008b).

commercial banks in the United States and Europe have been tightening lending standards to both households and businesses (Figure 1.3) and the effects are evident in a number of market segments, including loans to other financial institutions, like hedge funds. These institutions, which are often highly leveraged, have been forced to sell assets into illiquid

Figure 1.3. Banks are tightening lending standards
Net percentage of banks tightening credit



1. In the United States, starting in 2007q2 changes in standards for prime, non conventional (not displayed on this figure) and subprime mortgage loans are reported separately.
2. The Bank of Japan publishes a diffusion index of “accommodative” minus “severe”. The data have then been transformed to show the net percentage of banks tightening credit, as for the United States and the euro area.

Source: US Federal Reserve, Senior Loan Officer Survey; ECB, The euro area bank lending survey; and Bank of Japan, Senior Loan Officer Opinion Survey.

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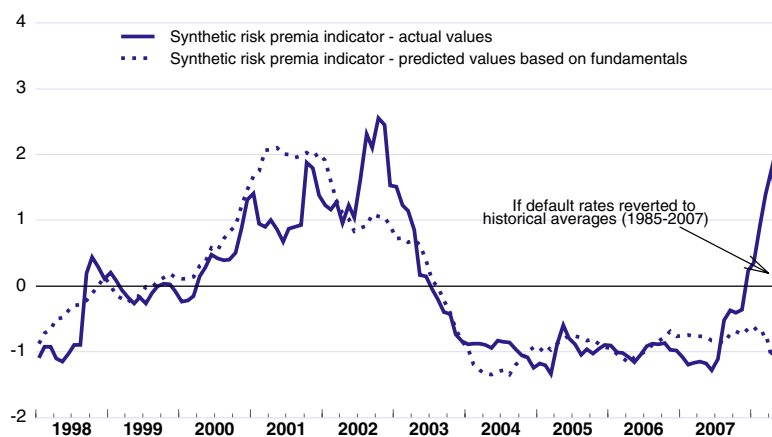
markets to either meet margin calls or restore targeted leverage ratios, further weakening prices and amplifying the deleveraging process (Greenlaw et al., 2008).

**As growth weakens
financial tensions are
spreading**

The re-pricing of risks has spread from opaque securitised products to other assets classes, including traditional bonds and equities. At the same time, government bonds in the major OECD countries have benefitted from a flight to quality, though this effect has diminished more recently in line with greater optimism that turmoil is being contained. The OECD synthetic indicator of corporate and emerging market bond risk premia has increased sharply since the autumn of 2007, to a level that cannot be accounted for by actual default rates, nor by a return of these rates to their historical norms (Figure 1.4). Hence, current prices seem not only to reflect the unwinding of the under-pricing of risk that prevailed before the turmoil but also the anticipation of much weaker growth and a corresponding surge in defaults as well as some possible overshooting. This reflects an on-going shift in the causal links between financial markets and the economy at large. Until recently, the causality has been mainly from financial strains to activity; it has now started to operate in both directions, at least in the United States, creating negative feedback effects and possibly prolonging the headwinds from financial dislocation.

Figure 1.4. Risk premia have risen sharply

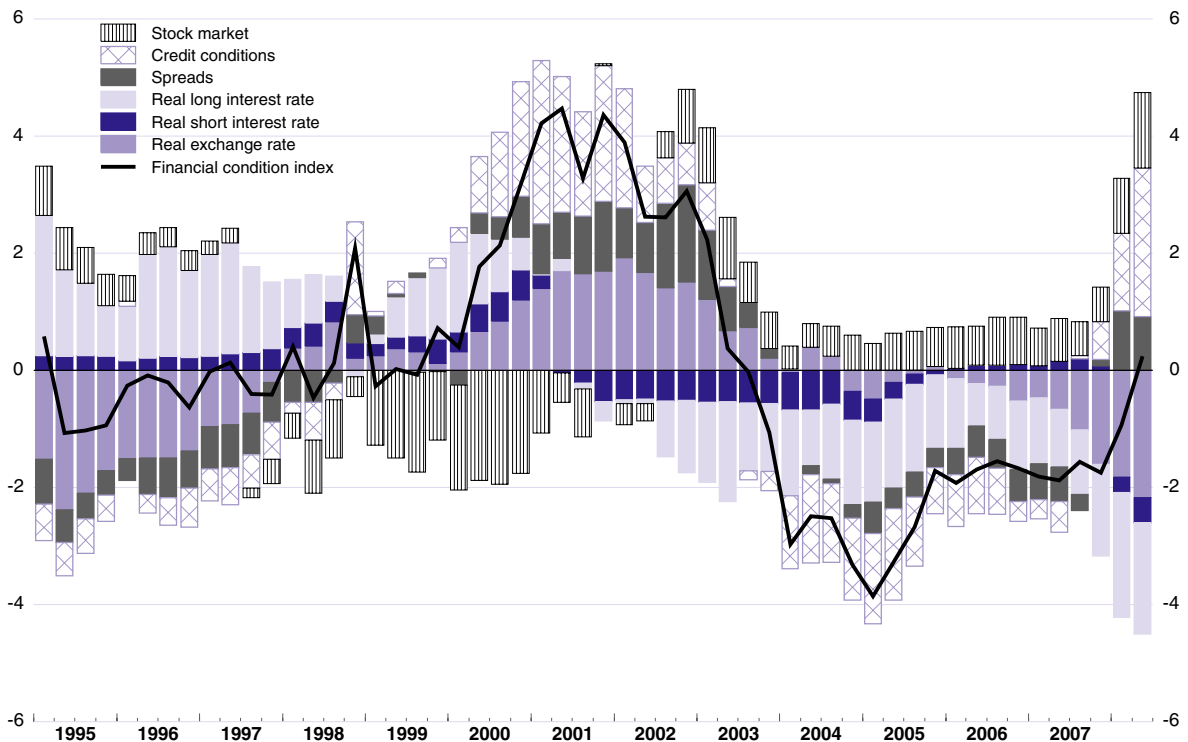
Deviation from average (in standard deviations of synthetic risk premia indicator¹)



1. The synthetic measure is derived from risk proxies for corporate and emerging market bonds. In regression analysis, it seems to be well explained by a set of “fundamentals” including global short-term interest rates and liquidity, corporate default rates and the OECD’s leading economic indicators, a proxy for expectations of the near-term outlook for the OECD cyclical position. The ‘predicted’ values shown are the model predictions. See OECD (2006a).


Source: Datastream; and OECD calculations.

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Figure 1.5. **US financial conditions have tightened despite depreciation and monetary easing**

Note: A unit increase in the index corresponds to an effect on GDP equivalent to an increase in real long-term interest rates of 1 percentage point. When necessary underlying variables for 2008Q2 have been projected in line with the other financial variables in this publication (Appendix 1.A2 for more details).

Source: OECD calculations (Appendix 1.A2).

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Overall financial market conditions are tight

The fallout from the turmoil is weighing on US growth via several channels. In an attempt to synthesise their effect on growth, a broad indicator of financial conditions has been constructed (Figure 1.5). The index comprises short- and long-term real interest rates on government paper, the effective real exchange rate as well as a measure of non-price credit tightening, bond market spreads and stock prices. On this indicator, financial conditions have tightened significantly since summer 2007 despite lower real short- and long-term interest rates and the real effective depreciation of the dollar. The overall negative impact on GDP implied by the tightening of the index to date would be slightly above 1% (for details of these calculations and the uncertainty surrounding them, see Table 1.14 in Appendix 1.A2).⁶

6. Other partial estimates of the impact of the deleveraging process on US activity (without considering second-round or wealth effects) range from 1 to 2% of GDP (Greenlaw *et al.*, 2008; Goldman Sachs, 2008; Roubini, 2008). These estimates depend on several key assumptions on the magnitude of the housing price correction, the extent of mortgage defaults and foreclosures, the defaults in other sectors such as commercial mortgages and credit card debt, the banks' exposure to those markets, their provisions, their ability to attract new capital, the expected adjustment in leverage and the type of assets on which deleveraging will weigh more.

The turmoil is also weighing on activity elsewhere

In the euro area and the United Kingdom, write-downs and expected further losses appear much lower than in the United States, but banks have on average smaller capital cushions than in the United States and are also facing involuntary re-intermediation. Credit standards have already been tightened. In these economies, any restraints on the supply of bank and other types of credit could have a more significant impact on activity as firms rely more heavily on external financing than in the United States. However, with better growth prospects, there is less risk of major negative feedback effects taking hold in the euro area. So far, credit to non-financial corporations has continued to grow at a high pace although credit to households, notably for house purchases, has decelerated. The United Kingdom, where the housing sector has started to adjust, may experience more pronounced effects. Japan's banking sector and financial system has so far remained relatively unscathed by the turmoil. On the other hand, banks' credit default spreads have increased dramatically in Iceland, where banks' foreign branches have become so big in relation to the size of the economy (bank assets are nine times GDP) that serious doubts have emerged about the capacity of the Icelandic central bank to act as a lender of last resort to these banks. This has prompted the authorities to sharply increase their official foreign exchange reserves, including through currency-swap agreements with other Nordic central banks leading to some narrowing of credit default spreads.

Emerging markets are also affected

Financial markets in emerging economies have so far not been overly affected by the turmoil compared with past financial crises. Several of these countries have solid current account positions (with a number benefitting from high and rising commodity prices) while banks are to a large extent well capitalised and funded by domestic deposits. Signs of strains have, however, emerged in a few countries where private foreign currency denominated and/or public debt is high, the banking sectors are either not well capitalised or tend to be more dependent on wholesale funding in capital markets, and current account deficits are high. There is still a risk that a major financial crisis affecting one country would lead to a more generalised reassessment of emerging market risk.

Financial authorities have acted on several fronts

Faced with the risk of negative feedback effects becoming very destructive to both the financial system and growth, the financial authorities in several of the main OECD countries have taken actions. These have included steps to address the malfunctioning of key money and credit markets (Box 1.1) and, in some countries, containing systemic risks by organising rescues to prevent the failure of troubled institutions. The US authorities are also acting directly in the mortgage market by facilitating loan modifications and loosening capital requirements for government sponsored enterprises so that they can buy more mortgage-backed securities, while a number of other initiatives are pending. Finally, the cuts in US policy rates are having ancillary supportive effects by

Box 1.1. Measures taken to improve the functioning of money markets

The stress in money markets reflects a combination of liquidity hoarding and heightened counterparty risks and its advent has tested the limits and adequacy of the traditional response tools of several central banks. In the event, normal operating procedures were modified and new facilities introduced. While several of the most important changes in operations were made by the Fed, which faced both greater money market tensions and had at the outset a more limited set of tools at its disposal,¹ a number of other central banks also changed methods and procedures. The figure below plots a measure of market stress from prior to the start of the turmoil to the present; the dates when some of the more important initiatives were introduced are noted with bracketed numbers that are referenced in the text.

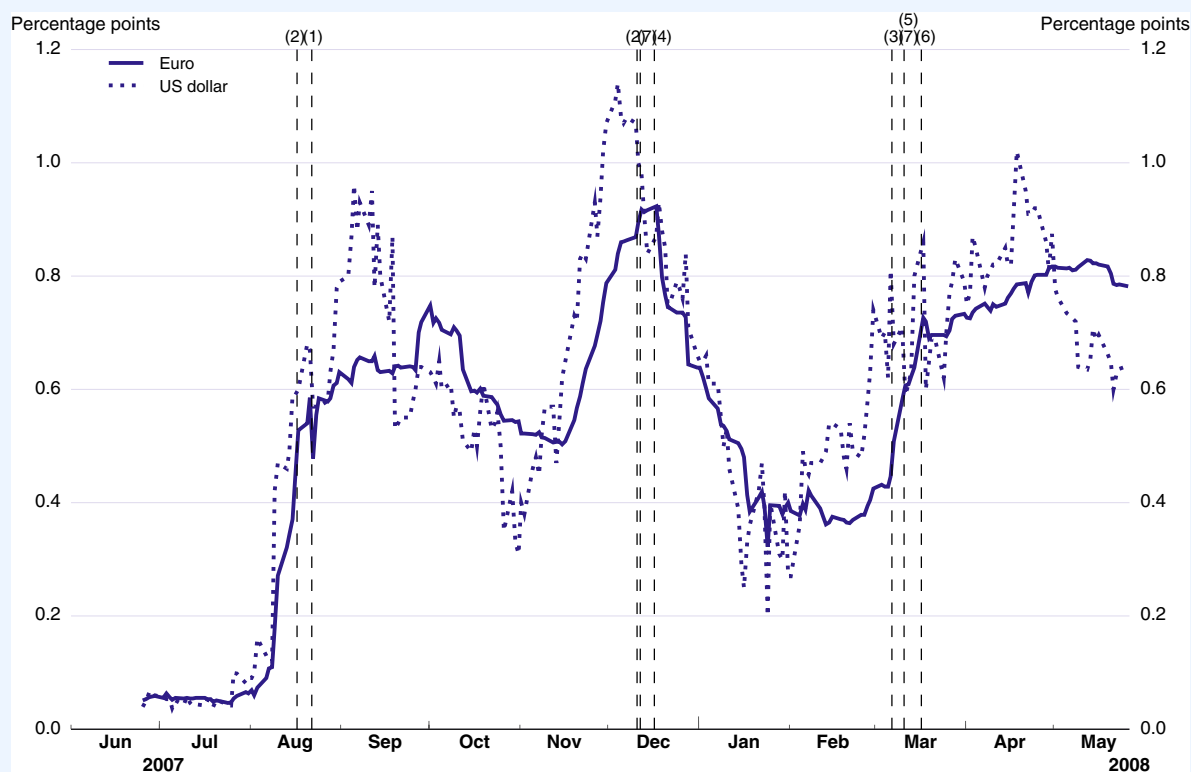
- At the outset, financial institutions struggled to obtain credit at normal maturities. In the case of the euro area, the European Central Bank (ECB) introduced in mid-August of last year the three month supplementary longer-term refinancing operations (LTROs) (1). These facilities were renewed as tensions persisted and their maturity was lengthened to six months in mid-March.
- At about the same time, the Fed increased the maturity of loans offered to banks at the discount window, while cutting the discount rate, which in effect narrowed the premium (or penalty) for such financing, from 100 basis points to 50 and finally to 25 (2). In March of this year, the maturity of repurchase agreements offered to primary dealers was also increased with the creation of a new repo facility with a 28-day maturity, the single-tranche Open Market Operation Program (OMOP) (3).
- With US banks remaining reluctant to use the discount window, the Fed created the Term Auction Facility (TAF) (4) in which the same wide range of collateral as at the discount window is accepted but banks are able to bid anonymously.
- In order to ease strains on mortgage-backed securities (MBS) markets, the Fed also created (11 March) the Term Securities Lending Facility (TSLF) (5) for primary dealers where a wide range of MBS type collateral is accepted. The list of eligible collateral was extended in May to high grade asset-backed securities. On 21 April, the Bank of England also launched a scheme to allow banks to swap temporarily their higher quality mortgage-backed and other securities for UK Treasury Bills.
- Following the Bear Stearns crisis, on 14 March the Fed also announced the creation of the Primary Dealer Credit Facility (PDCF) which allows it to lend directly to primary dealers against a broad range of collateral (6).
- Two coordinated actions (12 December 2007 and 11 March 2008 (7)) were conducted involving the Fed, the ECB, the Bank of England, the Bank of Canada and the Swiss National Bank aimed at easing strains in the interbank markets.

The purpose of these actions was to try to improve the functioning of these critical markets. In point of fact, these actions did not result in more liquidity being injected into the financial system. The total volume of refinancing operations has remained stable, with longer-term refinancing operations now accounting for about two thirds of the ECB's operations against less than a third before the turmoil. In the same way, the Fed's balance sheet has not expanded, rather the amount of securities held outright has been reduced by 30% as both repos and loans to both commercial banks (*via* the TAF) and primary dealers (*via* the PDCF) rose. While the implementation of exceptional and new procedures undoubtedly helped, money markets still remain under considerable stress. Central bank operations can do little to reduce counterparty risks that have arisen because of a lack of transparency and a need to recapitalise weak institutions; rather the purpose of these operations was to buy time while the price discovery process progresses and institutions strengthen their balance sheets. The temporary storage of unwanted MBS may also limit destructive price adjustments and help to initiate a slow revival of these markets. However, such moves by central banks have raised concerns about the amount of risk they are carrying on their balance sheets (Reinhart, 2008).

1. For a complete chronology of Fed actions as well of a detailed analysis of the Fed's new operations see Cecchetti (2008). Some of these changes put the Fed's operating procedures in line with other banks. In particular, the ECB and the Bank of Japan already accepted a wide range of collateral before the onslaught of the turmoil (Borio and Nelson, 2008).

Box 1.1. Measures taken to improve the functioning of money markets (cont.)

Money markets are still under stress



Note: Spread between three-month EURIBOR and EONIA three-month swap index for euro area; spread between three-month LIBOR and three-month overnight index swap for the United States. Numbers between brackets refer to the text.

Source: Datastream; and Bloomberg.

StatLink  <http://dx.doi.org/10.1787/364227813140>

lowering the cost of resets for subprime loans, mitigating the impact of rising spreads on risky short term bonds, and by supporting banks' lending margins.

There are signs that the situation is stabilising

Likely reflecting some of these measures, signs have emerged that the situation for banks has improved. Apart from being able to sell off part of their loan portfolios, financial institutions have seen equity prices at least stabilising while the prices of credit default swaps have declined, pointing to some improvement in counterparty risks.

Further financial risks remain

Despite these encouraging signs financial headwinds are still likely to persist and in the projections shown here they are assumed to abate only during the first half of 2009. Over this period, further strains could arise from a number of sources, including: a more pronounced adjustment of housing prices and further mortgage-related losses; a severe adjustment in the US commercial real-estate market; or a longer than expected US

recession that would in turn deepen financial market losses. The situation in vulnerable emerging markets could deteriorate if, for example, the foreign banks that have been important sources of credit in Eastern Europe curtailed financing.

Once financial turmoil abates the recovery may be rapid

There are also upside risks. The vicious circle of fire sales, falling asset prices, and the liquidity squeeze may come to an end earlier than expected. If so, financial conditions could rebound quickly and in a reversal of the previous situation, a positive feed-back loop between financial and real recoveries could start. In this event, where monetary policy has been eased sharply, it should be re-normalised quickly.

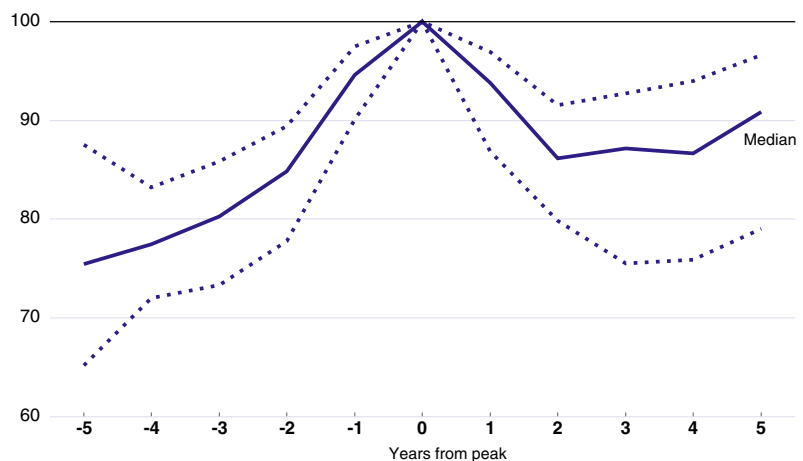
The downturn in the global housing cycle is gathering pace

Housing investment is contracting

During the upswing, the credit cycle and the housing cycle were related and so it is in the downswing. In 2006-07, two-thirds of OECD countries experienced a peak in housing investment as a share of GDP, relative to the previous ten years. Past episodes suggest that *per capita* housing investment typically falls by about 15% in the two years following a peak, although there is a wide range of different experiences and many of the most extreme downturns occurred after sharp increases in interest rates (Figure 1.6). The United States is clearly well underway in this adjustment process. In the euro area, housing investment, both as a share of GDP or in relation to population, peaked in the first half of 2007. Over the past year, housing investment has decelerated in the overwhelming majority of OECD countries and has fallen in at least one-third, although substantially only in the United States and Ireland (Figure 1.7).

Figure 1.6. **Previous housing investment cycles in OECD countries**

Residential investment per capita, index peak = 100



Note: Dotted lines show inter-quartile range (half of countries lie in this range).

Source: OECD Economic Outlook 83 database; and OECD calculations.


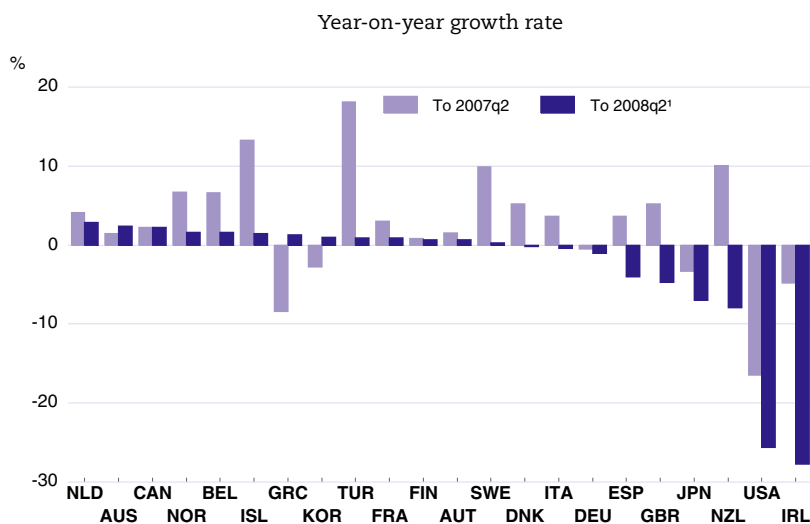
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Figure 1.7. **Real housing investment is decelerating in most countries**

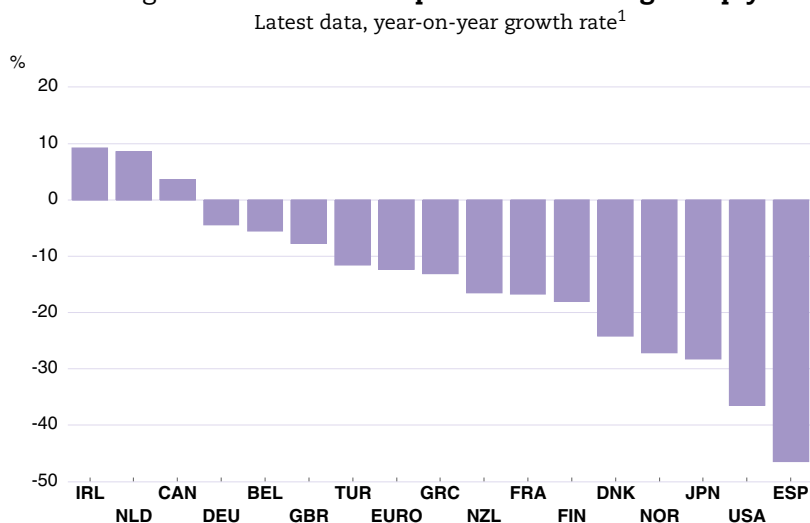
1. Change in second quarter in 2008 is projected.

Source: OECD Economic Outlook 83 database.

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Housing permits also indicate weak investment

Substantial drops in housing permits suggest that housing investment is likely to fall in many countries over the near term (Figure 1.8), although this indicator needs to be interpreted with care (Box 1.2). For the United States the continued decline in housing permits, as well as other advance indicators such as housing starts, is consistent with real housing investment continuing to fall substantially over coming quarters, and hence remain a major subtraction from GDP growth.

Figure 1.8. **Residential permits are falling sharply**

1. Monthly data mostly ending between December 2007 and March 2008; three-month average over the same three-month average in the previous year.

Source: Eurostat; and OECD, Main Economic Indicators database.

StatLink <http://dx.doi.org/10.1787/363723843411>

Box 1.2. Housing permits as an advance indicator of housing investment

Housing permits can be a useful leading indicator for housing investment, although the relationship is not such that a percentage change in permits translates into an equivalent percentage change in housing investment. This box reports empirical work to quantify the relationship between the two and uses recent permits data to examine which countries might experience a sharp fall in housing investment.

For each OECD country for which quarterly data is readily available, the change in (logged) residential investment was regressed on an intercept and up to four lags of the change in (logged) residential permits and up to four lagged dependent variables. Dummy variables were added for outliers. Where estimation over the full sample of available data led to failure of diagnostic tests, the sample estimation period was shortened. For a few countries (United Kingdom, Ireland, Korea and Netherlands) it is difficult to discern any simple stable historical relationship between residential investment and permits. For the 15 OECD countries for which data are readily available and it is possible to estimate a reasonable equation, the estimated long-run elasticity between building permits and residential investment is always well below unity; for some countries (United States, Canada, Belgium, New Zealand, Spain and Turkey) the elasticity is in the range 0.5–0.6, but for most other countries (Germany, Denmark, France, Greece, Japan, Norway and Sweden, as well as the euro area) the elasticity is in the range 0.15–0.3. Elasticities substantially less than unity can be explained by the fact that housing investment also covers expenditure on repairs, extensions which don't require permits as well as multi-dwelling housing. Full details of the estimated equations can be downloaded from the OECD internet site at: www.oecd.org/eco/sources-and-methods.

An additional one or two month's data on housing permits is typically available prior to the release of national accounts data on housing investment, although first releases of housing permit data may not always have full coverage which can bias the results in the direction of suggesting lower housing investment. The usefulness of permits as an advance indicator also depends on how far permits lead investment; for nearly all countries less than one-third of the long-run adjustment of investment to permits takes place in the same quarter.

Based on recent falls in housing permits (Figure 1.8) and the estimated relationships summarised here, there are a number of countries where housing investment growth may decelerate sharply; particularly Spain, Denmark and Finland, and to a lesser extent New Zealand, France and Turkey. In addition, housing investment in the United States is likely to continue to decline at a similar rate to that experienced recently, for at least a couple of quarters more.

There are exceptions to future weakness in housing investment

There are, however, some important exceptions to the general tendency for housing investment to act as a drag on future growth. Japan experienced a sharp fall in housing investment, down 27% in the second half of 2007, due to the poorly-prepared introduction of more stringent building regulations. However, following corrections of procedures and regulations, housing investment is recovering strongly, boosting growth in the near term. Germany never took part in the housing cycle and housing investment is historically low in relation to GDP and is unlikely to fall significantly in the near future.

Real house prices are falling in many countries

For all but a few of the OECD countries for which data is readily available, real house prices (deflated by the consumer price index) are clearly decelerating, and year-on-year real house prices are falling in about half of them (Table 1.4). In Germany and Japan real house prices have been falling modestly for a number of years (with no obvious tendency for this to become more pronounced), but in other countries real house prices have only begun falling within this past year and mostly within recent quarters.

Table 1.4. **Real house prices are slowing or falling**

	Per cent annual rate of change				Level relative to long-term average ¹		
	2000-2005	2006	2007 ²	Latest quarter ³	Price-to-rent ratio	Price-to-income ratio	Latest available quarter
United States	5.6	4.6	-0.1	-4.0	126	107	Q1 2008
Japan	-4.6	-3.3	-0.8	-0.5	69	66	Q3 2007
Germany	-3.1	-1.8	-2.2	-3.0	71	64	Q4 2007
France	9.4	10.0	4.9	3.1	162	141	Q4 2007
Italy	6.5	4.1	2.9	3.3	128	117	Q3 2007
United Kingdom	9.8	3.9	8.4	4.0	171	148	Q1 2008
Canada	6.2	9.1	8.7	9.8	194	137	Q4 2007
Australia	7.8	4.1	8.7	9.1	181	149	Q1 2008
Denmark	5.7	19.4	2.7	-1.9	165	151	Q4 2007
Finland	4.0	8.4	5.5	0.7	151	106	Q1 2008
Ireland	7.9	10.5	-1.8	-5.4	127	127	Q4 2007
Netherlands	2.9	2.9	2.6	2.2	157	158	Q1 2008
Norway	4.5	10.7	11.5	-0.6	166	133	Q1 2008
New Zealand	9.7	6.9	8.3	4.3	163	155	Q4 2007
Spain	12.2	6.3	2.6	-1.1	197	154	Q1 2008
Sweden	6.0	10.5	8.4	8.8	166	126	Q4 2007
Switzerland	1.7	1.4	1.3	-2.0	84	76	Q1 2008
Euro area ^{4,5}	4.6	4.0	1.6	0.4	129	113	
Total of above countries ⁵	4.2	3.6	1.6	-0.7	126	108	

Note: House prices deflated by the Consumer Price Index.

1. Long-term average = 100, latest quarter available.


2. Average of available quarters where full year is not yet complete.

3. Increase over a year earlier to the latest available quarter.

4. Germany, France, Italy, Spain. Finland, Ireland and the Netherlands.

5. Using 2000 GDP weights.

Source: Girouard *et al.* (2006).

StatLink  <http://dx.doi.org/10.1787/363040337877>

US house prices will continue to fall...

The extent of the future fall in US house prices and its macroeconomic impact remains uncertain, particularly given that the rate of decline in house prices shows signs of accelerating.⁷ The immediate prospect is for a continuation of falling house prices, at least through 2008, given the backlog of unsold properties on the market; the number of months' supply of existing single family homes at the current sales rate has risen from four to five months over the period 2000-06 to eleven months recently. The current projections incorporate a drop in

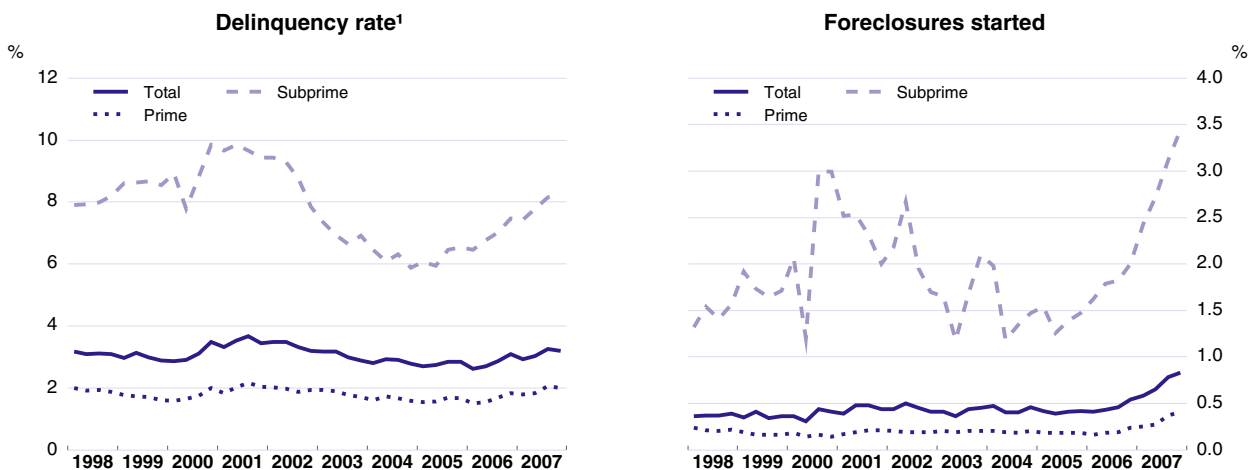
7. In the year to the first quarter of 2008 house prices fell by just over 3%, based on the price index produced by the Office for Federal Housing Enterprise Oversight (OFHEO), whereas the fall from the previous quarter, expressed at an annualised rate, was nearly 7%. The Case-Shiller US national house price index, which is more representative of houses purchased under different types of mortgage (including non-conventional ones) but less representative of houses purchased in rural areas, shows a more pronounced downturn, with house prices down by 14% in the year to the first quarter.

nominal house prices (based on the OFHEO index) of 8% in the year to the end of 2008 and a further drop of 2% to the end of 2009.

... leading to higher foreclosures...

One reason for concern is that falling house prices are likely to boost delinquency and foreclosure rates (Figure 1.9) as the number of households with negative equity rises.⁸ Indeed, there is some evidence to suggest that people have become more willing to default on mortgages (rather than credit cards or other forms of debt) than in the past. Falling property prices have also led to a pick-up in delinquency rates in the commercial property sector. These developments imply further bank losses and so risk exacerbating the credit crunch.

Figure 1.9. **Delinquency and foreclosure rates are rising in the United States**
Share of loans



1. Delinquent loans are those past due 30 days or more.

Source: Datastream.

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... reducing consumption via wealth and collateral effects

Falling house prices will drag down consumers' expenditure through a wealth effect. In relation to personal disposable income, housing wealth peaked at the end of 2006 while the estimated contribution it made to annualised growth in consumer's expenditure has declined from about ½ per cent in 2006 to about zero in the first quarter of 2008.⁹ For every additional 10% fall in real estate wealth over the period to the end of 2009,

8. There may be a closer link between falling house prices and foreclosures in the United States than in the typical European country because of the "no recourse" nature of most mortgage loans. This means that, in the case of a default, if the value of the house is lower than the mortgage on it, the borrower is not liable for the difference. The borrower can walk away and send the keys to the bank (so called "jingle mail"). Even when the creditor may have recourse, the costs involved may sometimes be prohibitive.
9. These calculations assume a steady decline in house prices until the end of 2009 and a marginal propensity to consume out of increased housing wealth of 3½ per cent (the magnitude of the effect incorporated in the Fed's FRB/US model) which is realised over the following eight quarters.

annualised consumption growth might be reduced by about ½ percentage point during 2009. More controversially, some estimates suggest that the hit to consumption would be twice as large through a collateral effect as through a conventional wealth effect,¹⁰ with housing serving as collateral for relatively cheap borrowing to finance consumption.

Some other countries are vulnerable to falling house prices

Other countries are also vulnerable to a major fall in house prices, particularly given that the rise in house prices in the United States since 2000, or their level in relation to income, does not appear exceptional in international comparison (Table 1.4 above). A number of factors have driven up the fundamental level of house prices in relation to income in many OECD countries, particularly low nominal and real interest rates and the liberalisation of mortgage finance. Beyond that, high inflation countries in the euro area, notably Ireland and Spain, stand out for having experienced, like the United States, a period of particularly low interest rates in the first half of this decade: in both Ireland and Spain average house price growth in the ten years to 2006 was in double digits and the highest in the OECD. Rapidly growing house prices fostered expectations of continuing capital gains, as for example evidenced by a booming buy-to-let market,¹¹ which led to some over-shooting of fundamentals. A correction of house prices is also now underway in the United Kingdom,¹² in part because much of the expansion in the mortgage market in recent years has been through banks which relied on the wholesale market for funds and which have been most adversely affected by the financial turmoil (such as Northern Rock).

House price effects will differ

The macroeconomic effects of any house price correction are likely to be larger among those countries where mortgage markets are more complete and so facilitate equity withdrawal. These countries – the United States, United Kingdom, Canada, Australia and some Nordic countries – also tend to be those where consumption is most strongly correlated with house prices (Catte et al., 2004). However, among this group, falling house prices are only expected in the United States, United Kingdom and possibly Denmark.

Sharply rising commodity prices are fuelling concerns about inflation

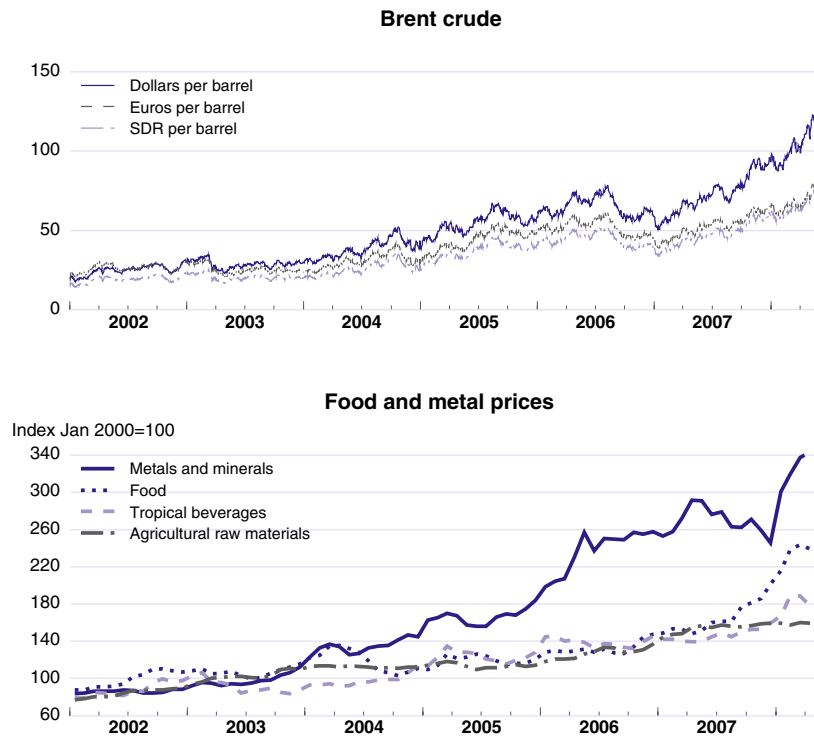
Commodity prices have reached record highs

Oil prices have continued to trend up since the beginning of the year, recently exceeding \$130 per barrel for Brent. Prices increased by less but are still at record levels if measured in terms of an international currency basket (SDRs) or in euros (Figure 1.10, upper panel). At the same time, the prices of


10. Muellbauer (2007) estimates a marginal effect from housing collateral which is about twice the size of the wealth effect incorporated in the FRB/US model, although this also depends on the state of the mortgage market.

11. In 2006 investors purchased 37% of new properties and 20% of second-hand properties in Ireland, whereas private landlords only account for 7% of the total stock of dwellings.

12. The United Kingdom is one of the countries where analysis presented in previous OECD *Economic Outlooks* suggested that house prices are most at risk of a sharp correction. On the other hand, housing investment has not increased greatly as a share of GDP, mainly because of planning restrictions.

Figure 1.10. **Commodity prices hover at new heights**

Source: Datastream; HWWI; IMF, Exchange Rates data; OECD Economic Outlook 83 database.

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a number of key commodities have also risen, in some cases also breaching previous records and, in the case of food, sparking social concerns in a number of primarily developing countries (Figure 1.10, lower panel).

Oil demand has softened in the OECD area...

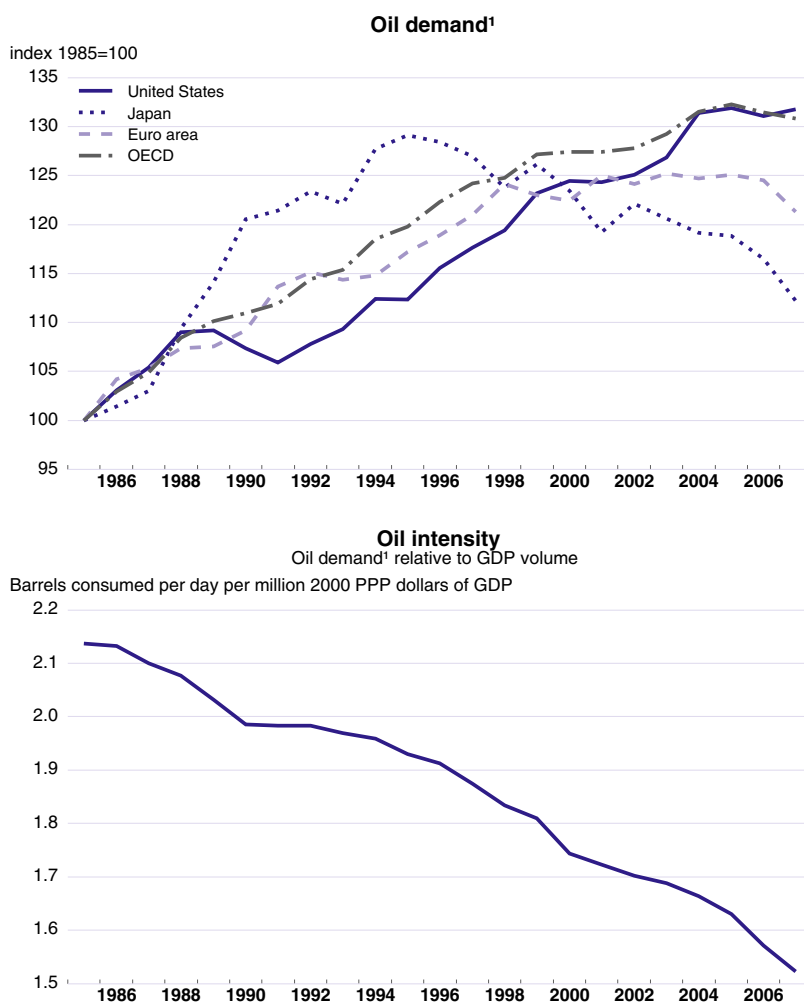
Oil demand in the OECD area levelled off in the first half of the decade and even fell over the past two years despite strong economic growth, with the fall in oil intensity of production accelerating (Figure 1.11). While the mild winter conditions account for part of the slackening in demand, steep price increases since the early years of the decade have been biting as well.¹³

... but not elsewhere and prices are likely to remain high

A number of factors are working to offset the slackening in OECD demand and thereby boost prices, particularly high economic growth in emerging markets, where fuel consumption is often subsidised or where price regulation (as in China) prevents the pass through to end-users. At the same time, indications are that the growth of overall supply will also be subdued. There may also be a speculative element to recent oil price


13. In particular, inter-fuel substitution has significantly contributed to the weakening in oil demand outside the transport sector, notably by switching from oil to natural gas in electricity generation. Estimates by the International Energy Agency (IEA) suggest that the long-run crude oil price elasticities within the OECD area are up to five times higher than annual elasticities. The difference between the short- and long-term elasticities is even larger for most regions outside the OECD (IEA, 2006).

Figure 1.11. Oil demand in the OECD area



1. Oil demand: deliveries from refineries and primary stocks.

Source: IEA; and OECD Economic Outlook 83 database.

StatLink  <http://dx.doi.org/10.1787/363813284724>

rises.¹⁴ The central scenario considered here is based on the technical assumption that oil prices stabilise at a level of \$120 per barrel, but given limits to short-term production capacity, demand or supply shocks could easily translate into high price volatility.

Other commodity prices have also risen steeply

In the first quarter of 2008, metal prices rebounded steeply from the declines seen between spring and the end of 2007. Buoyant demand, notably from China, and delays in extending production capacity have underpinned recent price hikes. Prices for food commodities and agricultural raw materials accelerated into 2008, reflecting expanding

14. Some (weak) evidence for this is the marked increase in net long positions of non-commercial traders in oil futures and options markets witnessed since the end of 2007.

food demand in emerging markets and developing countries, rising energy costs, adverse weather conditions and increased use of crops for bio-fuel production and some elements of overshooting in a situation of low stocks and government interventions leading to segmentation of world markets. Going forward it is assumed that all non-oil commodity prices stabilise at around current high levels in nominal terms.

To date the OECD area has weathered these rising prices...

So far, OECD economies have weathered the rise in oil and commodity prices well. For oil, this reflects the marked reduction in oil intensity of production over past decades, better anchored inflation expectations and compensating increases in external demand. OECD exports will continue to benefit from the re-spending of buoyant revenues by oil producers, although with important differences across economies; the euro area in general – and Germany in particular – tends to benefit more than the United States and Japan (Box 1.3). At the same time,

Box 1.3. The respending of oil revenues in OECD economies

External demand by oil producers (here OPEC, Russia and Norway) has become a major force behind the growth of OECD area exports and this box examines a number of aspects related to this issue. Since 2002, when oil prices started to trend up, significantly boosting oil producers' revenues, exports of merchandised goods by the OECD area to these economies have increase by 170% (figure, top panel). Of the OECD areas' additional payments for oil imports (accumulated between 2002 and 2007) about half has returned in the form of additional exports to these oil producers. This average figure, however, masks considerable differences in the strength of respending across countries. For Germany, the additional amounts spent on imports of oil were fully matched by additional exports to these economies, whereas for the euro area on average the additional exports amounted to about two thirds of the additional oil bill (figure, middle panel). At the lower end, such respending totalled some 30% for the United States and about 20% for Japan. Despite these lower respending rates, for both countries the percentage increase over the period in exports to oil producers was roughly in line with the OECD average (figure, top panel), reflecting the fact that US and Japanese exports to oil producers were relatively small to begin with. In recent quarters, exports of the United States to these oil producers have increased steeply, which likely reflects a substitution effect in favour of US goods due to the effective depreciation of the dollar.

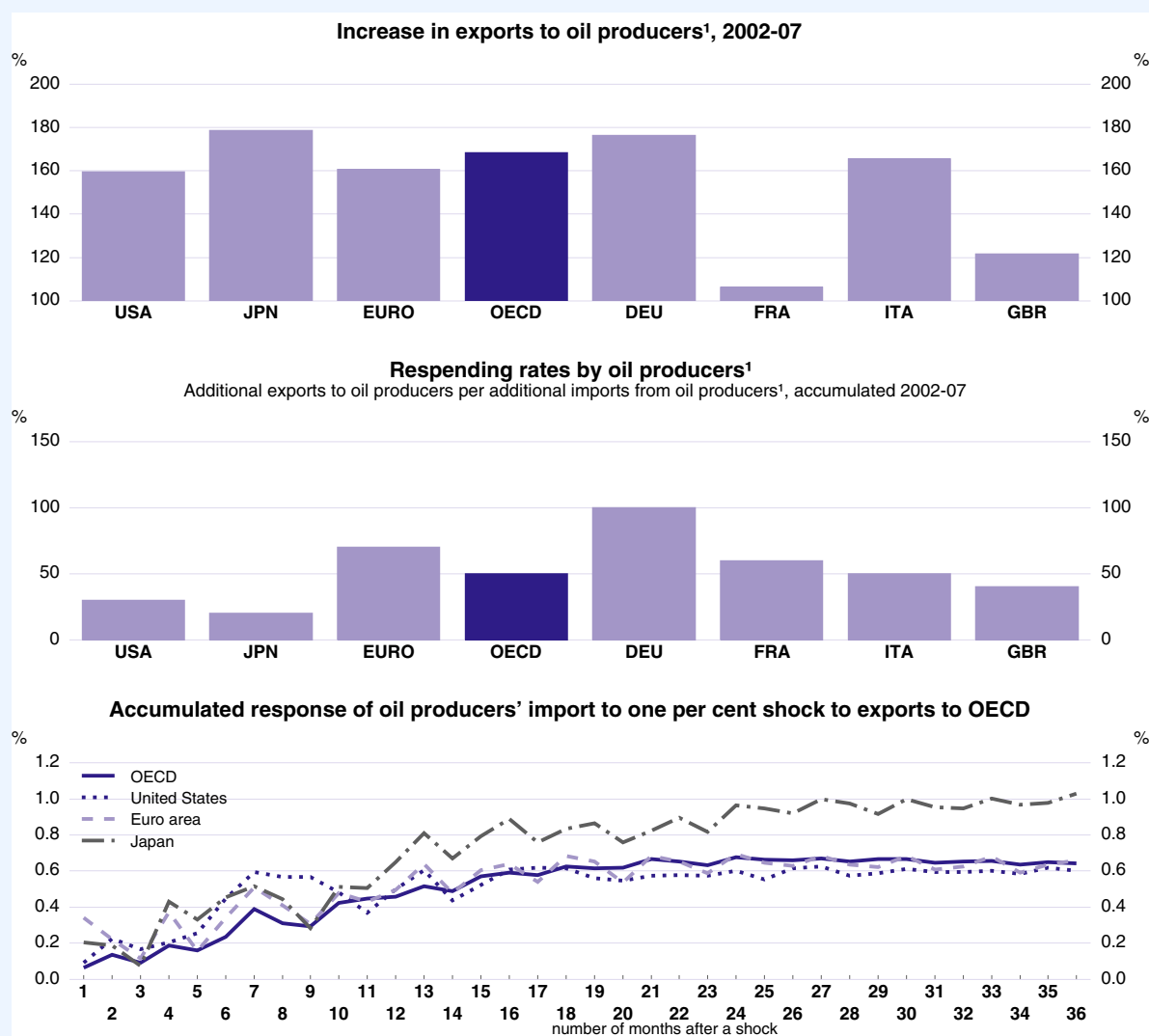
An important question is whether the respending relationship at an aggregate level has changed over this period of sharply rising prices from already high levels, possibly because producers would not immediately treat the associated gains in revenues as permanent, preferring instead to save a larger fraction than normal. However, based on regression analysis, in which exports from OECD countries to oil producers are related to oil producers' revenues, no significant evidence could be found that during the current period of rising oil prices the oil producers' propensity to respend their revenues in terms of imports from the OECD area differs from average respending patterns observed in the past. Oil price volatility might adversely affect respending in that it increases the oil exporters' revenues uncertainty. However, the statistical evidence for such a relationship is weak and not all measures of oil price volatility have increased recently.¹

Regarding the timing of respending, vector auto-regression (VAR) analysis² suggests that the largest part of the oil exporters' demand for OECD area goods and services materialises within the first year after a revenue hike (figure, bottom panel). For the United States, respending is estimated to be essentially completed within the first year, suggesting that respending effects on the US current account balance in the wake of recent oil price hikes will be realised fairly quickly, assuming no further price increases. For the euro area significant respending effects will still be evident in the second year after a hike in oil-producers' revenues and for Japan

Box 1.3. The respending of oil revenues in OECD economies (cont.)

in the second and third years. The estimates also suggest that on average the oil producers respond to a 1% hike in their export revenues by increasing imports from the OECD area by a bit over ½ per cent.

Trade with oil producers



1. Oil producers: OPEC, Russia and Norway.

Source: OECD, *Monthly Statistics of International Trade*; and OECD calculations.

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1. A series of simple error correction equations were estimated where oil exporters' imports were a function of their merchandise exports to the OECD (a rough measure of the oil exporters' export revenues), lagged oil producers' imports and different time-varying measures of oil price volatility. In all specifications, the volatility measure entered with a negative sign. However, only for one measure of volatility (the coefficient of variation of oil price changes calculated over the previous quarter) was the coefficient statistically different from zero at the 10% level. Moreover the coefficient of variation measure has not risen in the present episode of rising oil prices.
2. Bivariate VARs were estimated using monthly growth rates of oil producers' merchandise exports to the OECD and imports from different OECD economies (the OECD as a whole, the United States, Japan and the euro area) from 1993 to 2007. The estimated size of the response to an export shock varied across different OECD economies. However for various lag lengths for the models with imports from the OECD, a substantial majority of the response to the shock occurred within one year and the estimated medium-term response to the shock was broadly similar to the effect obtained from specifications with different lag lengths.

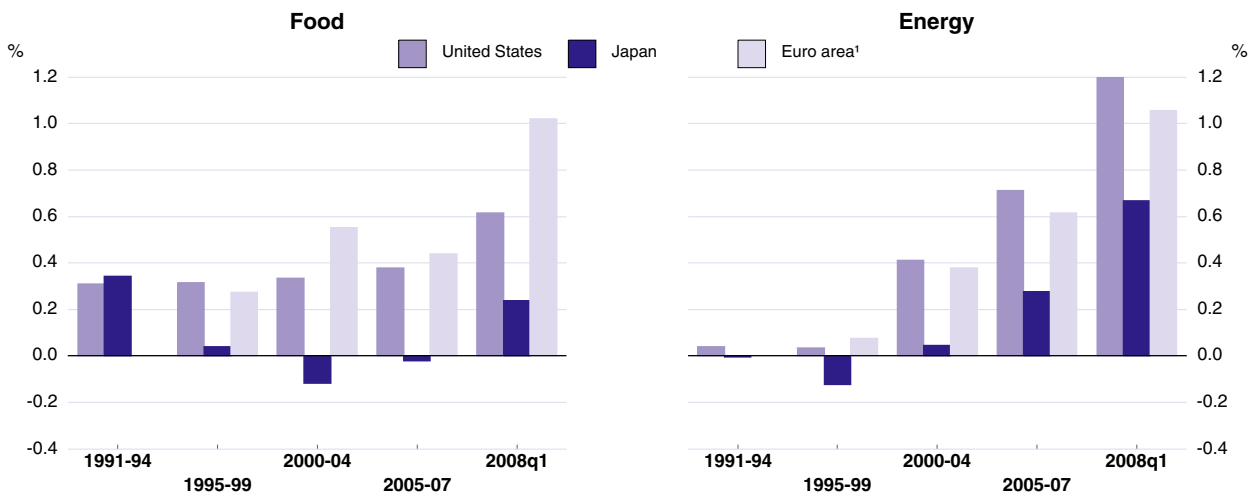
commodity exporting OECD countries (notably Canada, Australia, Norway and Mexico) have benefitted directly from rising prices.

... but they are putting pressure on inflation...

Food and energy account for about 15 to 20% and 5 to 10%, respectively, of consumer spending in major OECD countries and their rising prices have put upward pressure on consumer price inflation. As a result, headline inflation has risen above core inflation. This difference has been trending upwards over the past decade or more but has recently widened markedly (Figure 1.12).

Figure 1.12. **Contributions to headline consumer price inflation**

Contribution to annual inflation rates



1. Euro area data reported from 1996.

Source: Eurostat; OECD, Main Economic Indicators database; and Bureau of Economic Analysis.

StatLink  <http://dx.doi.org/10.1787/363856641476>

... while disinflation from globalisation is diminishing

The sharp rise in commodity prices is part of the background to concern that the net disinflationary effect of globalisation may be diminishing rather more quickly than previously thought. In the past, the upward pressure on OECD inflation from higher global commodity prices is estimated to have been more than offset by the increasing penetration of manufactured goods with low and declining prices from developing economies in Asia (OECD, 2006b; Pain *et al.*, 2007). However, over the year to April the price of US imports from China has risen by about 4%, compared with an average fall over the previous three years of about $\frac{3}{4}$ per cent *per annum*. Moreover, penetration of Chinese imports into the United States has stopped increasing. It is, however, too early to judge whether this represents a permanent break; for one thing rising Chinese import prices may be due to the faster depreciation of the dollar. Moreover, it appears that Chinese imports are still pushing prices down in the euro area (import prices from China have been more or less flat over the past two years but their penetration of euro area markets has been increasing).

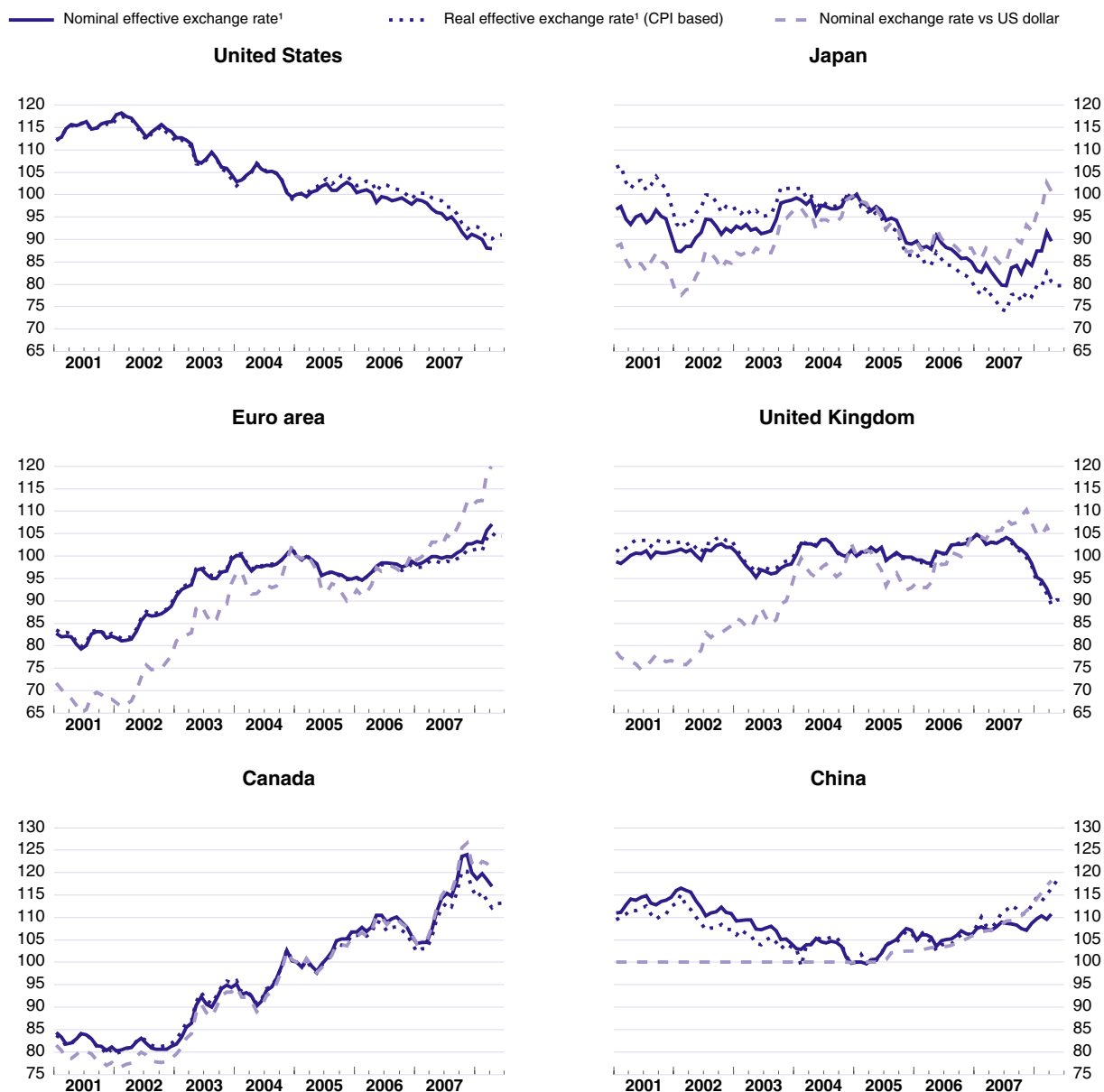
International imbalances are narrowing

In the wake of the turmoil exchange rates are adjusting

The ongoing financial turmoil has been accompanied by a period of more rapid adjustments in exchange rates (Figure 1.13). The dollar's depreciation vis-à-vis various OECD currencies has been large, particularly

Figure 1.13. **Exchange rates are adjusting**

January 2005 = 100



1. Competitiveness-weighted effective exchange rate indices. Competitiveness weights are based on a double-weighting principle, taking into account the structure of competition in both export and import markets of the manufacturing sector of 42 countries. An increase of the index indicates a nominal or, respectively, real effective appreciation and a corresponding deterioration of the competitive position.

Source: OECD Economic Outlook 83 database.

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against those economies currently enjoying either relatively better cyclical positions or improvements in their terms of trade. Against currencies of emerging market economies, the adjustment has been significantly less, in part because of policies of several (notably China and a number of oil-exporting economies whose share in OECD trade is important) to maintain, to varying degrees, pegged exchange rates vis-à-vis the dollar.¹⁵

The US trade deficit has declined

Changes in relative demand conditions coupled with shifts in real effective exchange rates, are projected to outweigh the effect of higher oil prices and so contribute to a reduction in the US trade deficit to 4¼ per cent of GDP in 2009, which would be its lowest level since 2002. Rough empirical estimates suggest that most of this improvement will be cyclical, although recent real exchange rate adjustments, to the extent they are not reversed, will make a more permanent contribution (Box 1.4).

Box 1.4. The contribution of the activity cycle and exchange rate movements to changes in the trade balance

Identifying the contribution of the activity cycle, the exchange rate and oil prices to changes in trade balances is useful in providing an estimate of how permanent any change is likely to be and, as regards the major economies, hence the extent to which underlying global imbalances may have improved. To this end, reduced form equations have been estimated for the United States, Japan and the euro area to explain the trade balance in goods and services as a share of GDP in terms of relative domestic demand gaps, the real exchange rate, with the balance of trade in oil separately distinguished.

For each OECD country a domestic demand gap is constructed as the ratio of total domestic demand to potential output. A relative domestic demand gap is then calculated as the difference between the own country domestic demand gap and a weighted average of the domestic demand gap in all competitor countries/regions, with weights reflecting the importance of the country/region as an export market. For non-OECD countries/regions, data limitations mean that a measure of the output gap is used in place of the total domestic demand gap and are calculated as the difference between actual GDP and a Hodrick-Prescott filter of GDP.

To isolate the effect of oil prices the dependent variable is taken to be the non-oil trade balance, with the oil trade balance then projected separately using an equation with oil prices, the domestic demand gap and a time trend as explanatory variables.

Key long-run properties of the equations are summarised in the table below, for further details see Ollivaud and Turner (2008). In all cases a fall in the real exchange rate is estimated to improve the trade balance, although only after a lag and an initial worsening in the trade balance consistent with a J-curve effect. The long-run response of the trade balance to a change in the relative domestic demand gap for the United States and the euro area is significantly larger than the share of trade in GDP. This may reflect, firstly, that marginal propensities to import are usually significantly higher than average propensities and, secondly, that if domestic demand is unusually strong it will not only attract a higher level of imports but may also lead to the diversion of export production to satisfy domestic demand.

15. Indeed, there is evidence to suggest that a large fraction of the US current account is being financed by official purchases from these economies. See OECD (2007b) for further discussion.

Box 1.4. The contribution of the activity cycle and exchange rate movements to changes in the trade balance (cont.)

Long-run properties of estimated reduced form equations

Per cent of GDP

	Change in the trade balance,		
	United States	Euro area	Japan
Effect of 10% fall in real exchange rate	0.65	0.29	0.47
Effect of 1% point change in the relative demand gap	-0.39	-0.54	-0.09

Source: OECD calculations.

StatLink  <http://dx.doi.org/10.1787/364315486682>

Using the equation to assess recent history and to project the US trade balance

An estimate of the contribution from past and projected changes in the relative cyclical position of the US economy as well as from the fall in the dollar to the evolution of the US trade deficit can be gauged by using the estimated reduced form equations (figure).

- The fall in the real effective dollar since 2002 has contributed to an improvement in the trade balance, but given the long adjustment lags involved (as well as J-curve dynamics) this only began to materialise from 2005, since when it has contributed to a decline in the trade balance by around 0.3 percentage points of GDP. Similarly, the more pronounced recent fall in the real effective exchange rate since the onset of financial turmoil might contribute towards a further improvement in the trade balance by ½ percentage point of GDP (although part of this adjustment will only be completed after 2009).
- The equations can be used to provide an estimate of the cyclically-adjusted trade balance, which is calculated as the trade balance consistent with closed output gaps. Over the period 2002-05, the more buoyant cyclical position of the US economy has led to a decline in the trade balance by more than ½ of a percentage point of GDP. However, as US activity slows sharply relative to that of its trading partners, this cyclical contribution should be reversed contributing more than two percentage points of GDP to an improvement in the trade balance between 2006 and 2009.
- Partially offsetting these improvements is a deterioration in the trade balance on oil. The continued rise in oil prices since late 2003 has consistently contributed to a worsening in the US trade balance over recent years. The further sharp increase since the beginning of 2007 is likely to reduce the trade balance by just under ½ percentage point of GDP.

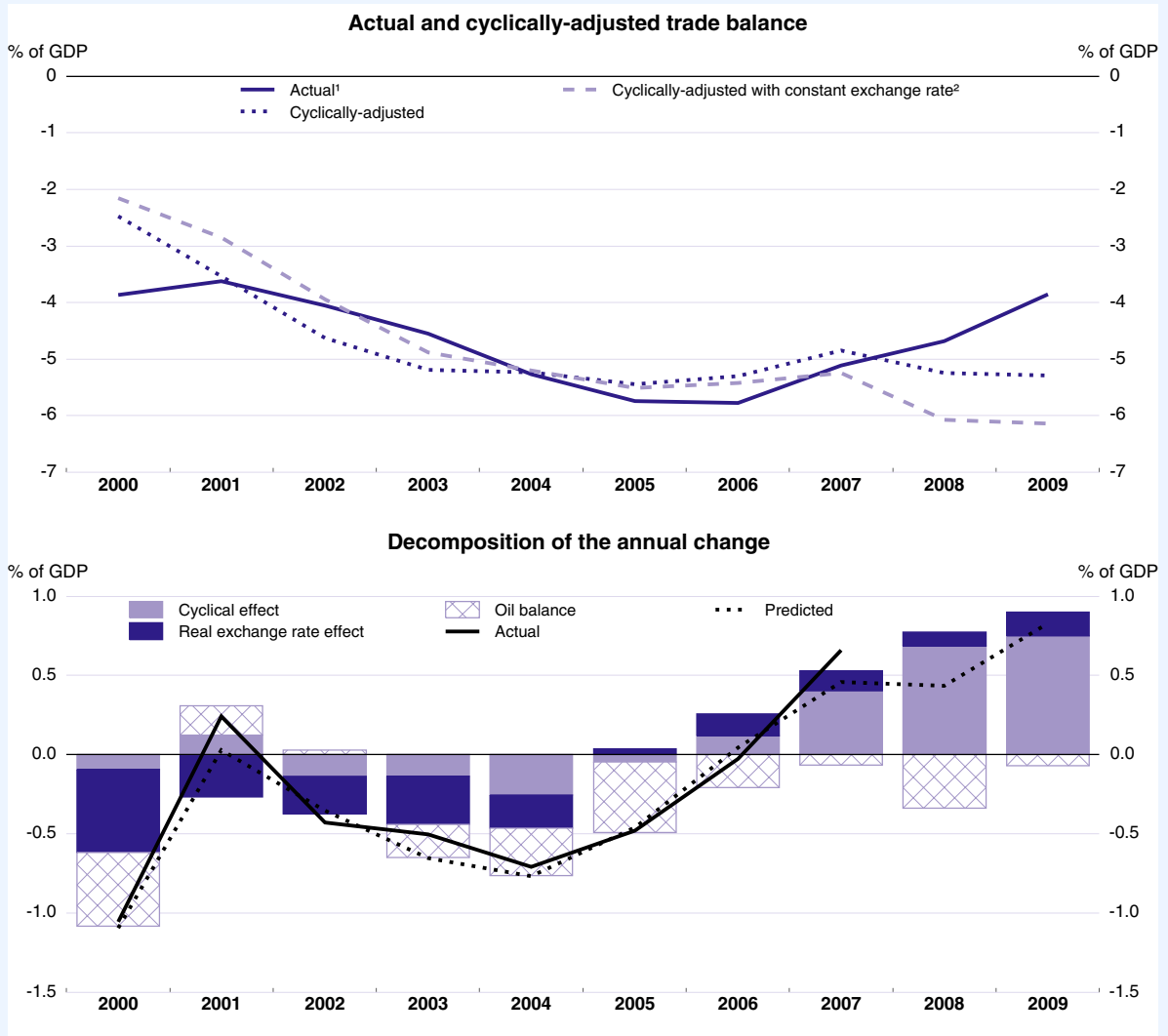
A mechanical projection using this equation suggests that the combination of these effects should lead to an overall reduction in the US trade balance by 1½ percentage points of GDP from 2007 to 2009 to a level of just under 4% of GDP in 2009. This is somewhat larger, but not greatly inconsistent with, the reduction implied by the main projections discussed elsewhere in this publication, which imply a trade balance of around 4¼ per cent of GDP in 2009. However, the equation results presented here suggest that a subsequent unwinding of cyclical positions, once all output gaps are eliminated, would mean that the US trade deficit would revert to about 5% of GDP.

The near balance position of the euro area should decline somewhat over the projection period, driven mainly by past increases in the real effective exchange rate.

The substantial depreciation in the yen in real effective terms, starting in late 2004, accounts for about 1¼ percentage point of the rise in Japan's surplus, although the recent rise in the effective value of the exchange rate will contribute to a modest reversal along with the relatively more buoyant cyclical position as Japan is less affected by recent financial turmoil and housing downturns.

Box 1.4. The contribution of the activity cycle and exchange rate movements to changes in the trade balance (cont.)

The evolution of the US trade balance in goods and services



1. Over the projection the “actual” is the equation prediction.

2. The steady state trade balance assuming the real exchange rate is stable at the average value for the period shown in the figure.

Source: OECD Economic Outlook 83 database; IMF, World Economic Outlook, April 2008; and OECD, *International Trade by Commodity Statistics*.

StatLink  <http://dx.doi.org/10.1787/364323022600>

The US investment income surplus may not persist

The net investment income surplus of the US current account has risen to about $\frac{3}{4}$ per cent of GDP from an average level of about half that over the period since 2000 as a result, not least, of valuation changes related to the depreciation of the dollar.¹⁶ The continuing surplus on US net investment

16. A depreciation of the dollar by 10% vis-à-vis all other currencies should lead to an increase of 0.3% of GDP on the current account due to such valuation effects.

income, despite the relentless rise in US net foreign indebtedness, implies that foreigners have continuously suffered lower *ex post* returns on their holdings of US liabilities relative to what US residents have realised on their foreign asset positions. Recent empirical evidence suggests that part of the observed *ex post* return differential is due to poor timing of foreign holders of US liabilities in shifting between bonds and equities in their portfolios when returns were at turning points (Curcuru *et al.*, 2007). If this is the source of the differential, it is unlikely to persist.

Imbalances are likely to ease

The decline in the US current account deficit, by about \$90 billion between 2007 and 2009, is the most important element in a projected general easing of global imbalances, although as previously noted much of this improvement may be cyclical and therefore temporary (Table 1.5

Table 1.5. **World trade slows while external imbalances decline**

	2005	2006	2007	2008	2009
Goods and services trade volume	Percentage change from previous period				
World trade ¹	8.2	9.5	7.1	6.3	6.6
<i>of which:</i> OECD	6.3	8.0	5.3	4.6	4.6
NAFTA	6.2	6.7	4.5	2.7	3.5
OECD Asia-Pacific	6.7	8.2	7.9	7.8	6.3
OECD Europe	6.2	8.7	5.0	4.6	4.6
Non-OECD Asia	13.5	13.1	10.3	8.6	10.4
Other non-OECD	10.6	11.2	11.9	10.9	10.2
OECD exports	6.1	8.5	6.1	5.6	5.3
OECD imports	6.4	7.6	4.5	3.6	3.9
Trade prices²	Per cent of GDP				
OECD exports	3.4	3.6	7.7	10.7	1.9
OECD imports	4.8	4.6	7.3	12.2	2.2
Non-OECD exports	10.1	7.1	7.2	14.4	3.6
Non-OECD imports	4.3	4.2	6.5	10.5	3.7
Current account balances	Per cent of GDP				
United States	-6.1	-6.2	-5.3	-5.0	-4.4
Japan	3.7	3.9	4.8	4.4	4.4
Euro area	0.4	0.2	0.2	0.1	0.0
OECD	-1.5	-1.7	-1.4	-1.3	-1.1
	\$ billion				
United States	-755	-811	-739	-717	-648
Japan	167	172	212	217	224
Euro area	42	25	29	8	5
OECD	-525	-639	-564	-565	-517
China	161	250	355	390	436
Dynamic Asia ³	79	126	167	161	152
Other Asia	-12	-16	-21	-48	-58
Latin America	41	50	31	1	-23
Africa and Middle East	216	250	212	316	268
Central and Eastern Europe	64	63	15	44	8
Non-OECD	549	723	758	864	783
World	24	84	194	299	265

Note: Regional aggregates include intra-regional trade.

1. Growth rates of the arithmetic average of import volumes and export volumes.

2. Average unit values in dollars.

3. Dynamic Asia includes Chinese Taipei; Hong Kong, China; Indonesia; Malaysia; Philippines; Singapore and Thailand.

Source: OECD Economic Outlook 83 database.

and Appendix 1.A3). In addition, the surpluses of Japan and China are both expected to decline as a percentage of GDP (although not in nominal dollar terms), for the first time since 2001. Moreover, the surpluses of the non-OECD oil producing countries are expected to fall in 2009 as their spending catches up with higher, and more stable, oil revenues. The euro area current account balance may also decline modestly.

International linkages and the spillover of US financial turmoil to other economies

Financial shocks are dominating the outlook

Of the shocks that have hit the OECD area since the time of the previous OECD Economic Outlook, the deterioration in financial conditions stands out. The epicentre of the shock was the United States, where risk spreads (the difference between risky corporate and government bonds) have widened by 225 basis points, while equity prices have fallen by 10%. These developments spread into financial markets of the euro area and Japan, with risk spreads having risen by 125 and 80 basis points, respectively, and equity prices having declined by 17% and 16%, respectively. At the same time, the dollar has fallen against the other major currencies lending support to the US economy but tending to weaken activity elsewhere. This latter effect may partially explain the greater falls in euro area and Japanese equity prices.

The OECD Global Model is used to evaluate the effects

The OECD Global Model has been used to simulate how the United States economy and the other major economies (Japan, the euro area and China) have been affected by these shocks. The shocks to risk spreads are assumed to start to dissipate during the first half of 2009, while equity prices and exchange rates are kept at their current level over this year and next, consistent with the current Outlook projections. The simulations also take into account changes in projected developments in US housing investment and house prices since the end of 2007, and assume that monetary authorities follow a Taylor rule, while fiscal authorities target a fixed debt-to-GDP ratio over the medium term.¹⁷ The simulated effects on GDP, inflation and current account balances are shown in Table 1.6. Policy rates ease in reaction to disinflationary pressures in all economies, compared to the baseline scenario with no additional turmoil from the end-2007 level. Even so, in the simulations US policy rates fall by less than has actually occurred, suggesting that the authorities have taken account of a wider range of factors. In the euro area, the simulations are consistent with the view that, had the additional turmoil not happened, then policy rates would have had to be raised to fight inflationary pressures.

The US economy is being hit hard by the shocks

The total effect of the additional turmoil that has occurred since the end of 2007 is estimated to lower US GDP by about $\frac{3}{4}$ per cent this year, building up to about $1\frac{1}{4}$ per cent in 2009. Given the larger output gap, inflation declines, with most of the effect likely to be seen next year.

17. For some more details on specific shocks to each economy, see Appendix 1.A1.


Table 1.6. **Are other economies de-coupling from the US slowdown?**

	Effect of turmoil since end-2007, percentage deviation from baseline	
	2008	2009
United States		
GDP level	-0.70	-1.19
Inflation ¹	-0.06	-0.17
Current balance ²	0.16	0.27
Euro area		
GDP level	-0.72	-1.25
Inflation ¹	-0.22	-0.45
Current balance ²	0.05	-0.12
Japan		
GDP level	-0.46	-1.19
Inflation ¹	-0.36	-0.57
Current balance ²	-0.66	-0.84
Total OECD		
GDP level	-0.56	-1.09
Inflation ¹	-0.07	-0.26
Current balance ²	-0.05	-0.05
China		
GDP level	-0.29	-0.52
Inflation ¹	0.14	0.39
Current balance ²	-0.15	-0.10

1. Consumer price deflator.

2. Per cent of GDP.

Source : OECD calculations. See text for description of the shocks.

StatLink  <http://dx.doi.org/10.1787/363137282267>

Weaker activity and the lower real exchange rate work to improve the current account.

The exchange rate amplifies direct effects on other economies

The simulations suggest that the euro area and Japan would be hit, more or less, equally hard by these shocks. But the direct effect of recent additional turmoil on the housing and financial markets account for only half of the total impact on activity, while the other half is due to the exchange rate adjustments, with output in the euro area and Japan being weakened by effective appreciation. China is negatively affected due to the assumed faster appreciation against the dollar and lower OECD demand for its goods. The overall effects of changes in exchange rates on the total OECD current account are relatively small, mainly redistributing trade and production among member countries. In conclusion, the analysis points to relatively limited scope for other OECD countries to de-couple from the US-centred financial shock. However, the shock hits at a time when US growth prospects were already weak whereas the outlooks for the euro area and Japan were more robust.

Growth prospects

Area wide growth is continuing to weaken

The assumptions underlying these projections are set out in Box 1.5. Activity in the OECD area is projected to remain subdued during 2008 with annualised growth reaching a trough of about ½ per cent in the second

Box 1.5. Policy and other assumptions underlying the projections

Fiscal policy assumptions are based as closely as possible on legislated tax and spending provisions (current policies or “current services”). Where policy changes have been announced but not legislated, they are incorporated if it is deemed clear that they will be implemented in a shape close to that announced. For the present projections, the implications are as follows:

- For the United States it is assumed that expiring tax provisions will be extended, including the relief for the Alternative Minimum Tax, without offsetting their effects on the budget. It is also assumed that the fiscal stimulus package and the projected slowdown in real activity will reduce the growth of tax receipts.
- In Japan, the scheduled hike in the pension contribution rate will increase government revenue by about 0.2% of GDP per year through 2009. The projections assume spending cuts in line with the FY 2008 budget and the medium-term fiscal reform plan. The impact of expected one-off factors on revenues is also included.
- In the euro area, fiscal consolidation stalls. For Germany a cut in corporate tax rates in 2008 (including a set of partially counterbalancing base-widening measures) as well as a net decrease in social security contribution rates (with a significant lowering of the unemployment insurance contribution rate overcompensating smaller increases in long-term care and health insurance contribution rates) are built into the projections, leading to revenue shortfalls of around 0.6% of GDP. For France, the main elements of the fiscal package that became effective in autumn 2007 include the reduction of income tax and employer social security contributions on overtime work, tax relief for interest paid on mortgage debt and for bequests or donations to family members, and the introduction of a ceiling on overall income tax paid by a single individual. For Italy, the projections incorporate a cut in the corporate tax rate in 2008 together with some measures advancing expenditure in the short run.

Policy-controlled interest rates are set in line with the stated objectives of the relevant monetary authorities, conditional upon the OECD projections of activity and inflation, which may differ from those of the monetary authorities. The interest rate profile is not to be interpreted as a projection of central bank intentions or market expectations thereof.

- In the United States, the target federal funds rate is assumed to remain stable at 2% until mid-2009. As the economic environment improves monetary stimulus is assumed to be withdrawn at a relatively rapid pace with the target rate assumed to be raised in three 50 basis points steps between the end of the second and third quarters of 2009. Thereafter two further 25 basis points steps are assumed to occur bringing the federal funds rate to 4% by the end of 2009.
- In the euro area, policy rates are assumed to remain unchanged over the next eighteen months as near-term growth is expected to weaken below the potential rate and past appreciation of the euro together with fading impacts from oil and commodity prices help contain inflationary pressures.
- In Japan, near-term growth weakness and stabilising commodity prices are projected to slow the rise in inflation, so that the short-term policy interest rate is assumed to remain at ½ per cent until mid-2009 when it is increased by 25 basis points.

The projections assume generally unchanged exchange rates from those prevailing on 13 May 2008, at \$1 equal to ¥ 104.44 and € 0.64 (or equivalently, € 1 equals \$1.56). The Chinese renminbi is assumed to appreciate by 5% annually against the US dollar after 13 May 2008, when \$1 was equal to CNY 6.99.

Over the projection period the price for a barrel of Brent crude is assumed to stabilise at around \$120. It is assumed, in the nature of a technical assumption, that all non-oil commodity prices stabilise at around current high levels in nominal terms.

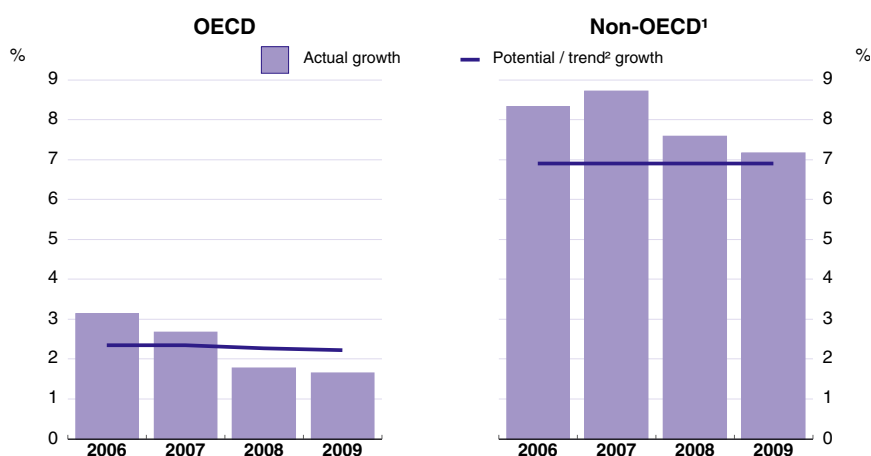
The cut-off date for information used in the projections is 23 May 2008. Details of assumptions for individual countries are provided in Chapter 2, “Developments in individual OECD countries and selected non-member economies”.

quarter of the year and remaining fairly weak for the remainder of the year. Growth subsequently firms gradually, reaching its potential rate by the second half of 2009.

Net exports play an important role in re-balancing growth

Growth in non-OECD countries is also expected to slow in 2008 and 2009, although only to rates which are close to the trend experienced since the beginning of the decade (Figure 1.14). Reflecting this difference, the support to OECD growth from net exports will be to a degree not experienced since following the oil price hikes in the mid-1970s and early 1980s. Moreover, within the OECD, net exports will play an important role in re-balancing output growth; US GDP growth in 2008 and 2009 may be mostly accounted for by unusually strong net exports stemming from stagnant domestic demand and a lower effective exchange rate, whereas the contribution of net exports to growth will be declining in both the euro area and Japan, where domestic demand is less affected by financial turmoil and housing downturns (Table 1.7).

Figure 1.14. **Global growth is slowing**



1. The non-OECD region is here taken to be a weighted average, using 2000 GDP weights and PPP's, of Brazil, Russian Federation, India, China and Dynamic Asia which together accounted for about two-thirds of non-OECD output in 2000.

2. Trend growth for the non-OECD is the average over the period 2000-06.

Source: OECD Economic Outlook 83 database.

StatLink  <http://dx.doi.org/10.1787/363884855726>

Growth performance will reflect vulnerability to headwinds

Differences in growth performance among OECD countries over the next year and a half to a large degree reflect differences in their vulnerability to the headwinds. Those countries which are most affected, judged by the degree to which output is projected to be pushed below potential output (Figure 1.15), include: those most directly affected by financial turmoil, notably the United States and Iceland; those where housing downturns are most pronounced, especially the United States, Ireland and Spain; the United Kingdom, which is also more vulnerable because of the importance of financial markets and links between

Table 1.7. **Slower domestic demand, partially offset by net exports**
 Contributions to GDP growth, per cent of GDP in previous period¹

	2005	2006	2007	2008	2009
United States					
Final domestic demand	3.5	2.9	1.9	0.3	0.2
<i>of which:</i> Business investment	0.8	0.7	0.5	0.1	-0.1
Residential investment	0.3	-0.3	-0.9	-1.0	-0.3
Private consumption	2.3	2.2	2.1	0.9	0.3
Stockbuilding	-0.2	0.1	-0.3	-0.1	0.0
Net exports	-0.2	-0.1	0.6	1.0	0.9
GDP	3.1	2.9	2.2	1.2	1.1
Japan					
Final domestic demand	1.7	1.4	0.8	0.7	1.1
<i>of which:</i> Business investment	1.3	0.7	0.3	-0.2	0.2
Residential investment	-0.1	0.0	-0.3	-0.1	0.2
Private consumption	0.8	1.1	0.8	0.9	0.7
Stockbuilding	-0.1	0.2	0.1	0.0	0.0
Net exports	0.3	0.8	1.1	1.1	0.2
GDP	1.9	2.4	2.1	1.7	1.5
Euro area					
Final domestic demand	2.0	2.6	2.3	1.5	1.4
<i>of which:</i> Business investment	0.5	0.8	0.8	0.5	0.2
Residential investment	0.2	0.3	0.1	-0.1	-0.1
Private consumption	1.0	1.1	0.9	0.7	0.9
Stockbuilding	0.0	0.0	0.0	0.0	0.0
Net exports	-0.2	0.2	0.4	0.2	0.0
GDP	1.7	2.9	2.6	1.7	1.4
OECD					
Final domestic demand	3.0	3.0	2.5	1.4	1.4
<i>of which:</i> Business investment	0.9	0.7	0.7	0.2	0.1
Residential investment	0.2	0.0	-0.3	-0.4	-0.1
Private consumption	1.7	1.8	1.7	1.1	0.9
Stockbuilding	-0.1	0.0	-0.1	0.0	0.0
Net exports	-0.2	0.1	0.3	0.4	0.3
GDP	2.7	3.1	2.7	1.8	1.7

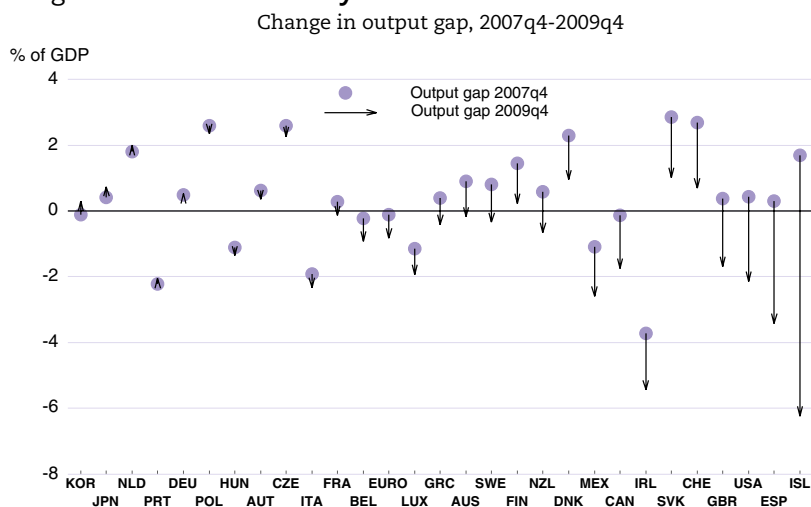
1. Chain-linked calculation for stockbuilding and net exports in USA and Japan.

Source: OECD Economic Outlook 83 database.


StatLink  <http://dx.doi.org/10.1787/363147432336>

financial turmoil the mortgage market and the spending of households,¹⁸ and those with closest links to the United States, in particular Canada and Mexico. And, while most OECD countries are to some extent vulnerable to higher commodity prices, the adverse effect they have on real disposable incomes will be damped by exchange rate appreciation in some economies, particularly the euro area, Canada, Australia and to a lesser extent Japan. Slowdowns of activity in some OECD countries – including Australia, New Zealand, some Nordics and Switzerland – occur from elevated starting positions relative to potential and will help to contain inflationary pressures.

18. The United Kingdom is more vulnerable because a large proportion of the growth in mortgage lending in recent years has been provided by lenders (such as Northern Rock) that rely on funds from wholesale money markets (rather than depositors) which have been hit hard by financial turmoil, and also because, as previously discussed, there are close links between consumption and the housing market because of more complete mortgage markets allowing the possibility of mortgage equity withdrawal.

Figure 1.15. **Vulnerability to headwinds differs across countries**

Note: Countries are ranked according to the change in the output gap over the period 2007q4-2009q4.
Source: OECD Economic Outlook 83 database.

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US activity will fall during 2008 and recover only in 2009

With financial markets remaining under considerable stress for the remainder of 2008 and residential construction continuing to adjust until the beginning of 2009, the US economy is heading for several quarters of very low growth. Rising unemployment, slow real income growth, tighter credit conditions and wealth losses associated with further declines in house prices act as major drags on consumption. The income tax rebates will bring some temporary support around the middle of the current year, but further slowing is expected in the fourth quarter. Business investment will also decline in the course of 2008, reflecting the deterioration in the outlook for demand and tight financial market conditions as well as a correction in the commercial property market. On the other hand, exports will remain as a strong driver of economic activity, benefitting from past dollar depreciation. Provided the housing market has bottomed out and the effects of financial turmoil begin to abate in early 2009, the recovery could gather pace in the second half of that year, but with growth above its potential rate only towards the end of the year. With the opening up of a substantial negative output gap and no further increases in energy and food prices, inflation is likely to decelerate to below 2% in 2009.

Euro area growth is set to fall below potential

In the euro area, after a weak second quarter (partly reflecting the reversal of temporary factors which boosted growth in the first quarter), GDP is projected to grow at an annualised rate of only about 1¼ per cent over the second half of this year. The pace of activity will then gradually pick up to around the potential rate by the second half of 2009. Export growth is less supportive of activity as the effective appreciation of the euro weighs on competitiveness. The ongoing adjustment in business investment will accentuate this weakness, reflecting normal cyclical responses to a weaker outlook for demand. Consumption growth remains

unspectacular at below 1½ per cent *per annum* for the remainder of this year, constrained by real income growth which – over and above the effect of structurally weak productivity growth – is held back by weakening employment growth and high headline inflation. The level of housing investment is likely to fall, mainly due to major corrections underway in Spain and Ireland, but this only subtracts some 0.1 percentage point off area-wide growth. Divergences within the euro area are expected to widen; among the larger countries, output in Germany and France should remain close to potential whereas in Italy and especially Spain it is likely to fall well below. The gradual emergence of a negative area-wide output gap, together with weaker import price pressures is expected to moderate consumer price inflation so that both headline and core inflation are close to the objective of the European Central Bank (ECB) by the end of 2009.

Growth in Japan will decline but recover in 2009

The Japanese economy is projected to decelerate and grow at about 1¼ per cent for the remainder of 2008, picking up through 2009 to just above the potential growth rate of 1½ per cent. This reflects a weaker contribution to growth from both exports and business investment than in recent years. Slower export growth reflects losses in export market share consistent with an appreciation of the effective exchange rate by about 8% compared to its average value in 2007. Partly in consequence, business fixed investment is expected to continue its recent weakness through 2008, only picking up during 2009. On the other hand, housing investment should continue to grow strongly through 2008 as it reverts to trend following the recent regulatory change. A gradual improvement in consumption is the main basis of strengthening growth in 2009. With activity remaining slightly above potential, core consumer price inflation will rise, but only modestly, reaching ½ per cent by the end of the projection period.

Growth in the United Kingdom and Canada will fall sharply

Activity in the United Kingdom and Canada has decelerated more sharply than elsewhere. In the United Kingdom, the combination of house price adjustment and tighter financial conditions will weigh on consumption and investment. Canada is hit by both the stagnation in its main trading partner and the appreciation of its currency, although growth should recover through 2009 in tandem with the pick-up in the United States.

Despite some slowing emerging markets continue to grow robustly

The major emerging market economies should decelerate, but only moderately, for the most part because of policy reactions to address inflationary pressures. Nevertheless, they will continue as a major driver of the global economic expansion. The Chinese economy is still projected to grow at around double digit rates, despite monetary policy tightening, with the economy becoming increasingly oriented towards domestic demand. The Indian economy is likely to continue expanding on a strong albeit reduced growth path as external demand moderates. Growth in Russia, while remaining rapid, should moderate as terms-of-trade gains dissipate. In Brazil the economy is expected to grow robustly supported by

solid domestic demand, though this will be moderated by expected tighter monetary policy.

Macroeconomic policy requirements

The scope for policy mistakes is larger than usual

Macroeconomic policy needs to balance concern about a pronounced slowdown in activity, where risks have a fat tail on the downside, with a need to contain inflation at a time when headline numbers in many countries remain uncomfortably elevated (Figure 1.16) and sharply rising producer price inflation suggests additional future cost pressures (Figure 1.17). To compound the challenge, uncertainty about future growth potential is particularly high (Chapter 3). While lack of sufficient policy stimulus may risk unduly delaying the recovery, over-stimulus might put at risk one of the major macroeconomic policy achievements of the past decade, namely the anchoring of inflation expectations at low levels (Box 1.6). If this anchor were to slip, the costs of dealing with both current and future shocks would be much higher.

Monetary Policy

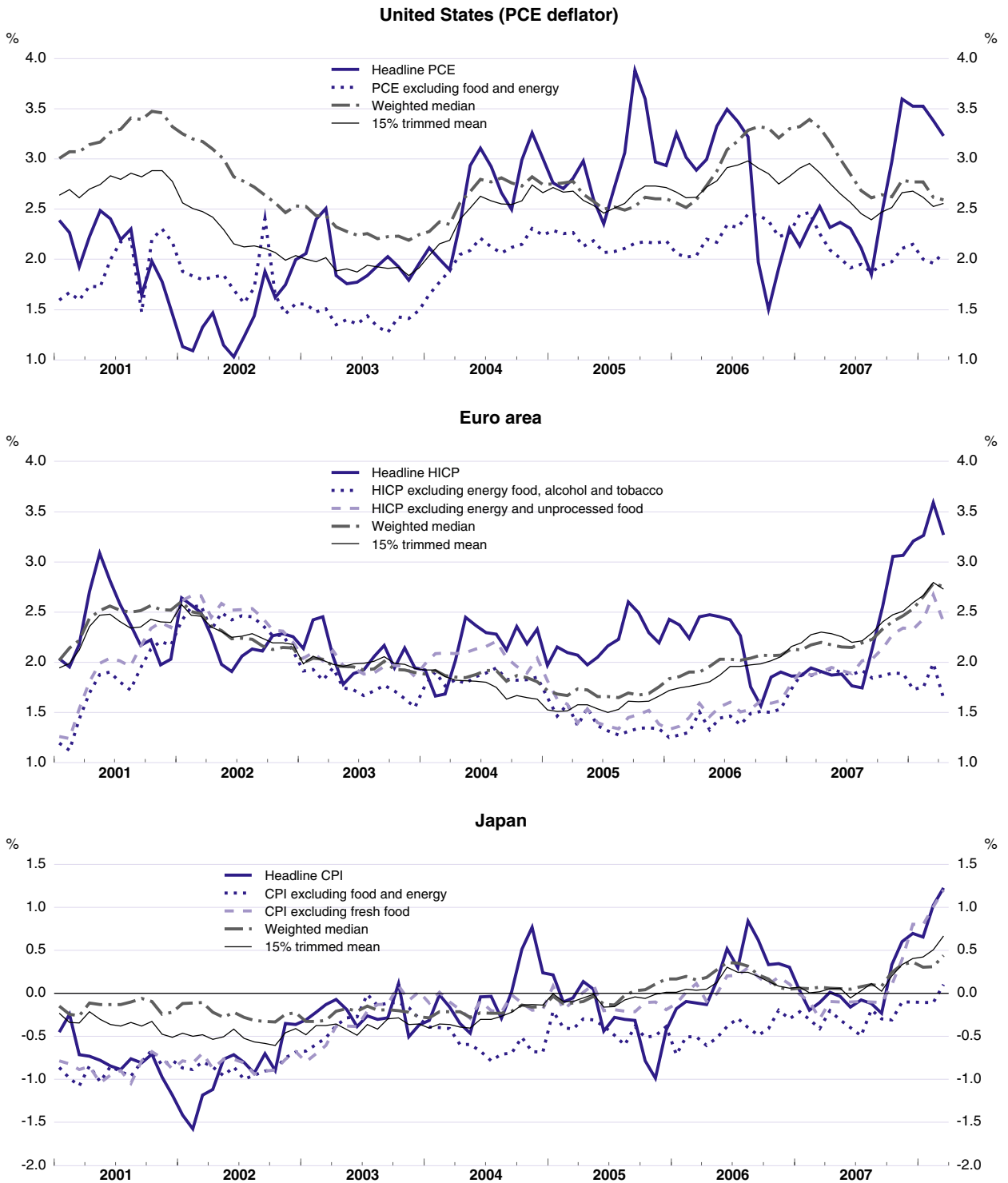
Further cuts in US policy rates are not needed

The weakness in activity has been, and will continue to be, more pronounced in the United States than elsewhere, and the monetary policy stance has accordingly already been eased substantially. Nevertheless, headline inflation (based on the personal consumption expenditure deflator) is still uncomfortably high at over 3% and there are signs of an upward shift in inflation expectations, although core consumer price inflation has eased back to just over 2% recently. In these circumstances, the current accommodative monetary policy stance should be maintained until the recovery takes hold. Continued weak growth will rapidly open up an output gap with unemployment rising to over 6% in 2009. The consequent disinflationary pressure, together with flat commodity prices, should lead to both headline and core consumer price inflation converging towards 1½ per cent. Once housing ceases to be a major drag and as the effects of financial turmoil abate, policy rates should be normalised quickly to ensure that inflation expectations remain anchored and to avoid feeding a new credit and asset price cycle (see below). On the basis of the projections presented here, this process should begin from the middle of 2009.

Policy rates should also remain on hold in the euro area...

The slowdown in activity in the euro area is expected to be more moderate while inflationary pressures are strong. Currency appreciation notwithstanding, headline inflation, as measured by the harmonised index of consumer prices, rose to 3.3% in April, up from 2% in the third quarter of last year. Different measures of underlying inflation continue to diverge: core inflation (excluding food, energy, alcohol and tobacco) is running below 2%, while most statistical measures of underlying inflation continue to trend upwards, as they have for several years, and are currently around 2½ per cent. Starting from a position where unemployment is about ½ percentage point below the estimated

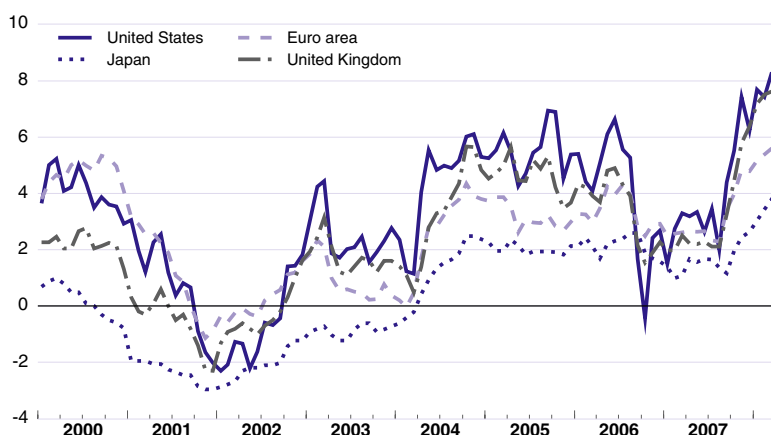
Figure 1.16. **Headline and underlying inflation measures**
12-month percentage change



Note: PCE refers to personal consumption expenditures, HICP to harmonised index of consumer prices and CPI to consumer price index.
 Source: OECD, Main Economic Indicators database; and OECD calculations.

StatLink <http://dx.doi.org/10.1787/364054782647>

Figure 1.17. **Producer price inflation has picked up sharply**
Year-on-year, % change



Source: Datastream.

StatLink  <http://dx.doi.org/10.1787/364071861386>

Box 1.6. **Measuring inflation expectations**¹

Longer-term inflation expectations are of key importance for monetary policy. When they are well anchored, the cost of maintaining price stability (in terms of lost output) in the face of an inflation shock tends to be lower. However, expected inflation cannot be directly observed, necessitating the use of proxy measures. Three commonly used ones are derived from surveys of consumer sentiment, views of professional forecasters and financial market data. Each provides useful information but is subject to problems of interpretation. Recently some of these indicators have been increasing in a number of OECD economies.

Consumer surveys often include information about inflation expectations. However such measures tend to closely follow recent inflation changes and are accordingly more informative about very near-term developments. Here, median responses concerning expectations five to ten years ahead are used. These have the advantage of excluding those survey respondents that give implausibly extreme values. For the United States, this measure has been around 3% for about two years, up from earlier in the decade. For the United Kingdom, the situation is less clear, in part because of the series' short history. The recent rise could reflect a possible link between inflation expectations and the prices of certain high-profile items like food and energy.²

Professional forecasters provide another and complementary source of inflation expectations. In addition, since this group likely has a greater incentive to forecast inflation well, their views may be more informative. A positive feature is that indications of uncertainty can be easily derived by looking at the dispersion of views. On the other hand, it is not always clear what is the underlying model on which the forecasts are based. In addition, to the extent that herding is present, measures of uncertainty may not be that informative. Bearing these caveats in mind, these measures suggest that the inflation expectations for the United States and the euro area remain well anchored at levels not far out of line from what is known about official views of price stability. This could as well be a reflection of central bank credibility. For Japan, on the other hand, survey based measures display a more erratic pattern, suggesting that the outlook for inflation has been less stable. That said, recently these expectations have risen to around 1½ per cent.

Financial markets are yet another important source of information about inflation expectations and the actors in these markets have an even greater incentive "to get it right". These measures are based on the difference between nominal government bond yields and similar maturity inflation indexed-bond yields. Movements in these differences, however, reflect not only changes in inflation expectations but also developments in liquidity and inflation risk premiums. In the current juncture, these factors could be

Box 1.6. **Measuring inflation expectations**¹ (cont.)

driving the expectation measures. For example, during the current financial turmoil there are signs of a preference for liquidity with unusually large spreads in the United States between the yields of the relatively liquid, high demand “on-the-run” (the most recently issued) nominal bonds and the yields of other, “off-the-run” bonds.³ As nominal government bond markets are typically more liquid than indexed ones, bond prices in these markets have likely increased relatively more due to these liquidity effects, depressing yields relative to those in indexed markets, with changes in the corresponding yield differential potentially underestimating changes in inflation expectations.⁴

For the United States, the adjusted Treasury Inflation Protected Securities (TIPS) measure tries to take account of these liquidity effects. However, even this measure is likely to be problematic. The adjustment assumes the inflation risk premium is constant over time, when it seems plausible that inflation uncertainty (and hence the inflation premium) has recently increased. For example, as weakness in the real economy increases, the risk of low inflation may have risen but the recent commodity price movements (and perhaps stimulatory monetary policy) have likely increased the chances of high inflation outcomes. All this is to suggest that the recent run-ups in the adjusted TIPS measure (and other financial market expectation measures) could be overstating changes in expectations (as an increase in the inflation premium will require higher nominal yields compared to indexed bond yields). One approach is to discount sudden moves in these expectation measures (as it is more plausible they reflect developments affecting financial market premiums rather than sudden changes in long-term inflation expectations) and to be aware that there are reasons for thinking that these measures could be either understating or overstating expectations.

Taking account of the above, the recent rise in the United States of the adjusted TIPS measure may be of concern if it persists when the outlook for the economy improves. In the euro area, as well, financial measures have moved up. However for both the United States and the euro area most measures are not substantially higher than they have been in recent history. Meanwhile, Japanese inflation expectations appear low. Expectations in the United Kingdom, which by a number of measures seem to have risen, are a potential cause for concern, although professional forecasters’ expectations are well down from their late 2003 levels.

1. For more details, see Bank of England (2008b), ECB (2008) and Mishkin (2008).
2. Long time series of long-term consumer expectations collected on a consistent basis are not available for the euro area or Japan.
3. The ten-year spread, less than 10 basis points in July 2007, has recently risen to around 25 basis points. The rise in the adjusted TIPS differential relative to the Merrill Lynch differential in the figure below also reflects the increased preference for liquidity. In other markets, including outside the United States, there are also signs of increased preference for liquidity.
4. Inflation-linked swaps are another potential source of information as these should be unaffected by liquidity effects in bond yields.

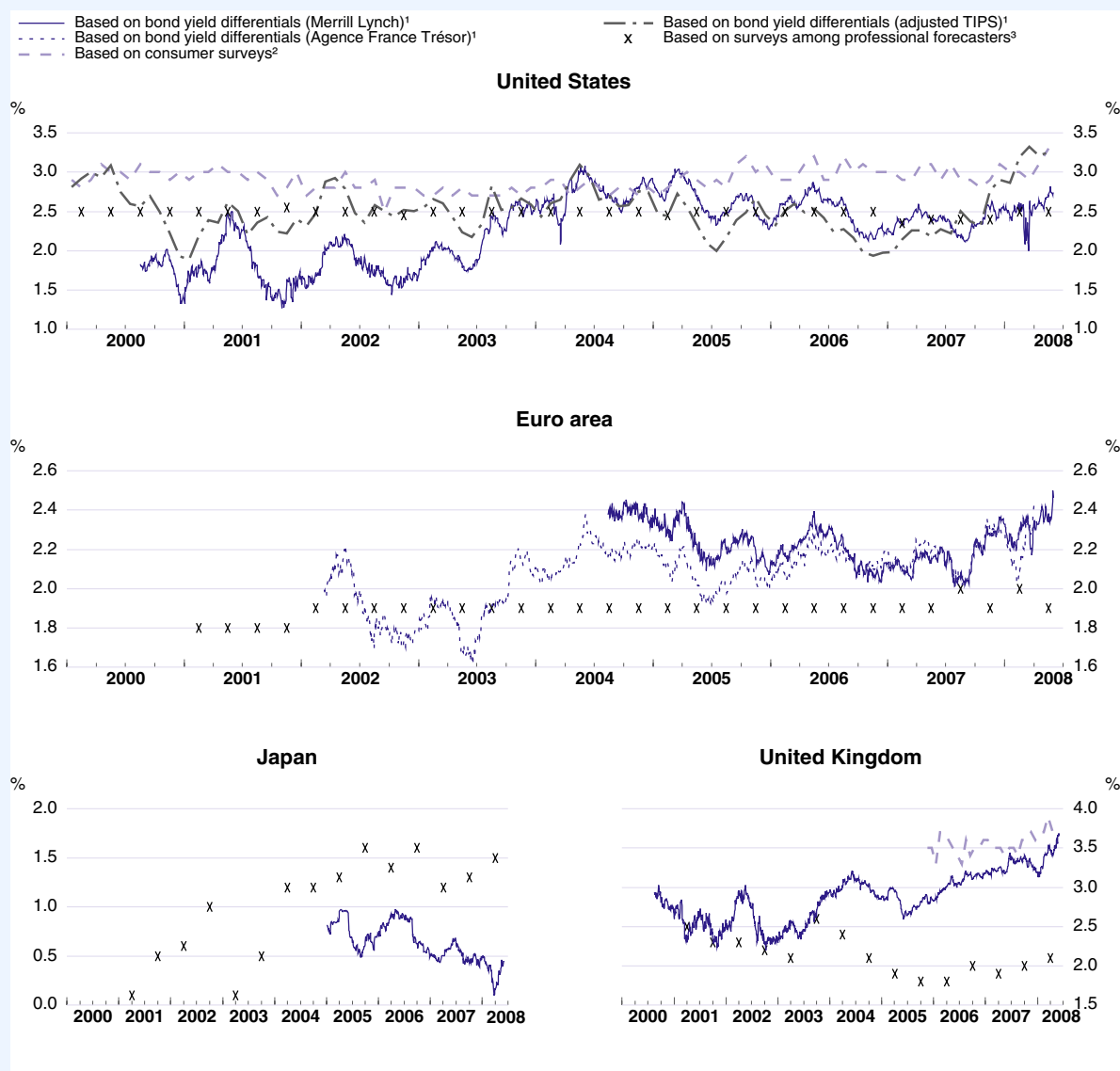
structural rate, unchanged policy rates are consistent with a period in which growth falls below potential rates and remains there until around the middle of next year, which should contain inflationary pressures in keeping with the ECB’s inflation objective. The ECB will have to stand ready to react, either if adverse effects from financial turmoil or housing are larger than expected, or if second-round effects from the recent spike in headline inflation feed through into inflation expectations and wage settlements.

... and in Japan until there is a clear exit from deflation

In Japan, headline consumer price inflation jumped to 1% in the first quarter, but this was entirely explained by a pick-up in food and energy prices, and excluding these items core inflation remains close to zero.

Box 1.6. Measuring inflation expectations¹ (cont.)

Proxies for long-term expected inflation



1. Expected inflation implied by the yield differential between ten-year government benchmark and inflation-indexed bonds.
2. Expected consumer inflation five to ten years ahead (median forecast). Based on the University of Michigan Survey of Consumers for the United States and on the Citigroup/YouGov survey for the United Kingdom.
3. Expected average rate of consumer inflation over the next ten years for the United States, based on the Survey of Professional Forecasters (SPF) by the Federal Reserve Bank of Philadelphia. Expected harmonised consumer inflation rate five year ahead for the euro area, based on the SPF by the ECB. Expected average rate of consumer inflation six-to-ten years ahead for Japan and the United Kingdom based on Consensus Forecasts.

Source: Datastream; Agence France Trésor; University of Michigan Survey of Consumers; Citigroup; Consensus Forecasts; Federal Reserve Bank of Philadelphia; Federal Reserve Bank of Cleveland; and European Central Bank.

StatLink  <http://dx.doi.org/10.1787/364365776200>

There have, however, recently been some encouraging signs that Japan may eventually escape deflation: most statistical measures of underlying price pressures imply positive inflation rates; wages appear to have stopped falling; and residential land prices rose during 2007, after stabilising in 2006 and declining over the previous 15 years. Nevertheless, the weakening outlook for growth, and the need to let inflation rise to create some buffer against the risk of deflation, especially given the possible upward bias in the price index (OECD, 2008a), argue for keeping monetary policy on hold until there has been an unambiguous and permanent exit from deflation, which may not be until mid-2009.

Large policy rate cuts are warranted in the United Kingdom and Canada

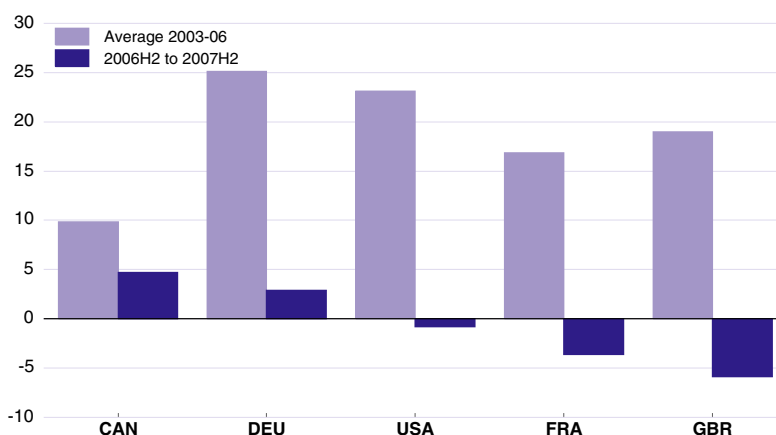
Both Canada and the United Kingdom are likely to experience sharper falls in output relative to capacity than most other OECD countries. If this slowdown does emerge, further cuts in policy rates of the order of 75 basis points will be warranted. An important difference between the two countries is that in the United Kingdom there is more of a case for delaying the reduction to ensure that inflation expectations, which have recently shown signs of upward drift, are appropriately anchored, particularly given that headline inflation is likely to rise further in the near-term.

Fiscal Policy

The case for widespread fiscal activism is weak...

Concerns that financial turmoil may have blunted the conventional transmission mechanisms for monetary policy have raised the issue of whether expansionary fiscal policy is the more appropriate tool in the current conjuncture if stimulus is called for. Additionally, and still only relevant where stimulus is warranted, the credit and asset price cycle at the origins of the present financial turmoil was facilitated by a prolonged period of unusually low interest rates (see below) and the wish to avoid a repeat might argue in favour of relying relatively more on fiscal than monetary stimulus. On the other hand, although there has been some improvement over recent years, the current fiscal position in many countries still appears barely adequate to cope with future fiscal costs of ageing (Cournède, 2007). Moreover, the starting position may be much less favourable than it first appears. In particular, corporate tax receipts in many OECD countries have been unusually high as a consequence of the previously prolonged period of profit growth which has exhausted carry-forward provisions for tax losses, expanding income from capital gains from financial investments, and a disproportionately large contribution from the financial sector. There is already evidence of a pronounced deceleration in corporate tax revenues in the year to the end of 2007 in many of the largest OECD countries (Figure 1.18) and a fall in corporate tax receipts to longer-run average shares in GDP would imply a loss in revenues of between ½ and 1 percentage point of GDP. In addition, buoyant asset prices, have also boosted sources of revenues, including personal income tax. A downturn which disproportionately affects the housing and financial sectors and abruptly reverses the trend in profitability could lead to a much

Figure 1.18. **Corporate tax revenues have slowed sharply**
Annual percentage change



Source: OECD Economic Outlook 83 database.

StatLink  <http://dx.doi.org/10.1787/364151056256>

sharper fall in tax receipts than allowed for in conventional cyclical adjustments of the fiscal balance (Journard and André, 2008).

... as is that for targeted fiscal action in mortgage markets

A distinct but related issue is whether targeted fiscal support is warranted to ease adjustment in housing and mortgage markets. In general, the problem with such support is that, if it is limited in scope, it is difficult to avoid arbitrary discrimination between potential recipients. On the other hand, if support is widespread it risks not only being costly, but also delaying much needed adjustment of the housing market to levels supported by fundamentals as well as possibly encouraging future speculative behaviour in the housing market. These considerations may, however, still leave scope for action by the authorities to co-ordinate voluntary action by lenders and borrowers to avoid the high costs of foreclosure with little risk to current and future tax payers, which is the aim of the “Hope Now” initiative introduced last year in the United States. Recent proposals would take this initiative further by allowing the Federal Housing Authority (FHA) to guarantee new fixed-rate mortgages for distressed borrowers, providing agreement can be reached with their lenders to write down the value of the outstanding mortgage in line with more recent valuations. Such a guarantee might have a considerable effect on limiting foreclosures, but would expose the FHA to the risk of substantial losses if house prices were to fall more than anticipated.

Fiscal positions are set to deteriorate

The widespread and substantial improvement in OECD fiscal balances of recent years is moving into reverse (Table 1.8). In 2008 the area-wide deficit is projected to widen from just over 1½ to about 2½ per cent of GDP, with only about one quarter of the deterioration accounted for by cyclical factors. More tentatively, there should be some improvement in the OECD cyclically-adjusted fiscal balances in 2009, but this mainly reflects the temporary nature of the US fiscal stimulus.

Table 1.8. **Fiscal positions are worsening***Per cent of GDP/Potential GDP*


	2005	2006	2007	2008	2009
United States					
Actual balance	-3.6	-2.6	-3.0	-5.5	-5.2
Cyclically-adjusted balance	-3.7	-2.9	-3.2	-5.2	-4.4
Cyclically-adjusted primary balance	-1.7	-0.9	-1.1	-3.1	-2.3
Gross financial liabilities	62.4	61.8	62.8	65.8	69.8
Japan					
Actual balance	-6.7	-1.4	-2.4	-1.4	-2.2
Underlying balance ²	-5.7	-3.5	-3.0	-2.8	-2.7
Underlying cyclically-adjusted balance ²	-5.3	-3.5	-3.1	-3.0	-2.9
Underlying cyclically-adjusted primary balance ²	-4.5	-2.8	-2.4	-2.2	-2.0
Gross financial liabilities	175.3	171.9	170.3	170.9	170.3
Euro area					
Actual balance	-2.6	-1.3	-0.6	-1.1	-1.2
Underlying balance ²	-2.8	-1.4	-0.7	-1.1	-1.2
Underlying cyclically-adjusted balance ²	-2.1	-1.2	-0.7	-1.0	-0.8
Underlying cyclically-adjusted primary balance ²	0.4	1.3	1.8	1.6	1.7
Gross financial liabilities	76.9	74.8	71.8	70.5	70.4
OECD¹					
Actual balance	-3.0	-1.5	-1.5	-2.5	-2.6
Underlying balance ²	-2.9	-1.7	-1.6	-2.7	-2.6
Underlying cyclically-adjusted balance ²	-3.0	-2.1	-2.0	-2.9	-2.5
Underlying cyclically-adjusted primary balance ²	-1.2	-0.3	-0.2	-1.1	-0.7
Gross financial liabilities	77.4	76.2	75.4	76.2	77.6

Note: Actual balances and liabilities are in per cent of nominal GDP. Cyclically-adjusted balances are in per cent of potential GDP. The primary cyclically-adjusted balance is the cyclically-adjusted balance less net debt interest payments.

1. Total OECD excludes Mexico and Turkey.

2. In this context "underlying" means that the balance has been purged of one-off and temporary measures, insofar as they have been identified. For European Union countries these adjustments are mainly taken from European Commission (2007).

Sources: OECD Economic Outlook 83 database, European Commission (2007), "Public Finances in Emu, 2007".

StatLink  <http://dx.doi.org/10.1787/363162045341>

There is a stronger case for US fiscal action

The case for fiscal stimulus in response to weaker activity is stronger in the United States than elsewhere: a significant output gap is expected to open up; there is greater uncertainty about the normal transmission mechanism of monetary policy; interest rates are already low; and the automatic fiscal stabilisers are much weaker than in most other OECD economies, particularly those in Europe. Indeed, with regard to the last point, without federal action, automatic stabilisers might even be perverse, given that most US states are forced by law to run balanced budgets, driving them to cut spending or raise taxes in downturns. Moreover, fiscal stimulus may be more effective in the United States, whereas European economies seem to be more subject to countervailing private sector saving responses (Cotis *et al.*, 2004).

The US fiscal stimulus will give growth a boost around mid-2008

The US fiscal package appears to have the merits of being temporary and targeted. It includes individual tax rebates and temporary investment incentives worth just over 1.2% of GDP in fiscal year (FY) 2008. Estimates of the impact of the 2000 package, which it resembles, suggest that 20 to 40%

of the rebate tends to be spent in the quarter in which it is received and over 60% of it within six months (Johnson et al., 2006). In the present case, tax rebates, which will represent about two-thirds of the fiscal cost of the package, began to be implemented from May. If roughly half of the rebate is spent, there will be a temporary boost to GDP growth by about 1 to 1½ per cent in the second and third quarters of 2008 (at annualised rates), after which the level of activity will gradually revert to the underlying trend.

The US deficit may remain large beyond 2008

Because it is temporary the fiscal package will not figure in the US government budget for 2009. Nevertheless, the deficit may still deteriorate from 3% of GDP in 2007 to over 5% in 2009. About half of this deterioration reflects cyclical factors and much of the rest is explained by the fading of the recent exceptional contribution from corporate taxes.

The reduction in the euro area fiscal deficit has ended

The euro area's public finances have improved from a combined "underlying" (here taken to mean adjusted for one-off factors) cyclically-adjusted deficit of 2.1% of GDP before the 2001 slowdown to a deficit of only 0.6% of GDP in 2007. The euro area government deficit is projected to expand by around ½ per cent of GDP in 2008, about half of which is explained by cyclical factors and the rest by a more expansionary fiscal stance, which is more than accounted for by the largest countries.

Fiscal expansion is underway in Germany...

- In Germany, the underlying cyclically-adjusted fiscal balance is likely to fall from close to balance in 2007 to a deficit of nearly 1% of GDP in 2008, although this mainly reflects a long-planned structural tax reform rather than explicit counter-cyclical fiscal stimulus.

... and France

- In France, tax cuts are likely to increase the underlying cyclically-adjusted deficit from under 3% of GDP in 2007 to 3¼ per cent of GDP in 2008, although there may be some fall in 2009 due to announced measures to contain public spending. The headline deficit will still be close to the 3% Maastricht limit in 2009.

Further reductions in the structural deficit are not expected in Italy

- In Italy, the underlying cyclically-adjusted deficit has been reduced from 4% of GDP in 2005 to 1½ per cent of GDP in 2007, which is important given that public debt in excess of 100% of GDP is an impediment to growth (OECD, 2007a). However, this progress may be coming to an end, with the underlying cyclically-adjusted deficit expected to remain at 1½ per cent of GDP in 2008-09, and the headline deficit rising to 2¾ per cent of GDP in 2009.

Spain is implementing fiscal stimulus

- In Spain, where there may be more scope for fiscal measures given recent surpluses and the low level of government debt, the cyclically-adjusted surplus is expected to decline by nearly 1% of GDP in 2008. This reflects a tax stimulus package, additional support for the residential construction sector as well as the bringing forward of infrastructure spending.

**Smaller “Excessive Deficit”
EU countries will reduce
large deficits**

Smaller EU countries which have recently been subject to the Excessive Deficit Procedure – Hungary, Portugal, Czech Republic and Slovak Republic – are all expected to further reduce their deficits, so that the underlying cyclically-adjusted deficit is below 3% of GDP by 2009. Poland is an exception with the underlying cyclically-adjusted deficit rising to over 3½ per cent in 2009.

**The UK fiscal deficit will
exceed 3% of GDP again**

The general government deficit in the United Kingdom has averaged more than 3% of GDP over the past five years and is likely to increase well above this in 2008 and 2009. This reflects cyclical factors, the disappearance of temporary revenue buoyancy and a fiscal stimulus for the 2008-09 tax year in the form of a temporary tax cut for those on lower incomes.

**Fiscal consolidation is
stalling in Japan**

Japan has reduced its underlying fiscal deficit from 8% of GDP in 2003 to around 3% in 2007. But gross government debt has continued to rise, reaching around 170% of GDP in 2007. In the coming two years little further progress is expected towards achieving the government target of a primary surplus for central and local governments combined by FY 2011, which is an essential first step towards reducing the government debt ratio in the 2010s. The huge stock of government debt combined with rapid population ageing and other long-term spending pressures mean that delaying fiscal consolidation will incur considerable costs (Cournède, 2007; OECD, 2008a).

Longer-term lessons from the current episode of financial turmoil

**Regulatory control of
financial markets needs to
be reformed**

Recent financial turmoil has prompted a review of financial markets’ prudential and regulatory frameworks both at the national level and through a wide range of international fora. For example, the Financial Stability Forum (FSF)¹⁹ has recently presented a report making recommendations in several areas (FSF, 2008). The long list of recommendations notably includes: strengthening the Basel II capital treatment of structured credit and securitisation activities; pressing banks to better assess and manage risks associated with off-balance sheet exposures; reviewing the role of ratings by both investors and regulators combined with pressures on rating agencies to improve the quality of these ratings; and aligning the financial industry compensation models with long-term, firm-wide profitability. Against the background of increased internationalisation of financial institutions the FSF also recommends that authorities clarify and strengthen cross-border arrangements for managing crises and dealing with weak banks. While this recommendation may be especially relevant for the euro area, as a currency union with several independent supervisory and regulatory institutions, diverse deposit insurance schemes and no harmonised procedure to deal with bank failures, the need to extend and tighten regulatory and supervisory

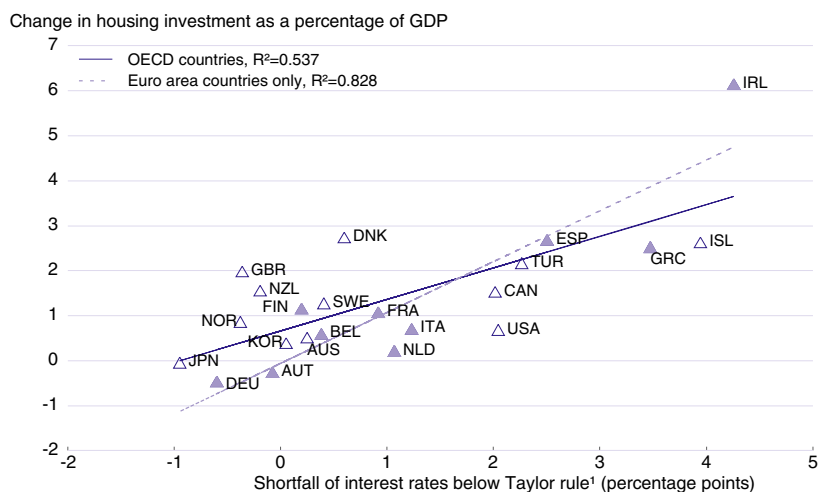
19. The FSF brings together national authorities responsible for financial stability in major international financial centres, international financial institutions and committees of central bank experts to promote international financial stability through information exchange and co-operation in financial market supervision.

coverage may be particularly acute in the United States where intervention to prevent the failure of a highly inter-connected but lightly-regulated institution might otherwise create problems of moral hazard.

Loose monetary policy may have contributed to imbalances

The current episode also highlights a long-standing debate about the conduct of monetary policy during credit and asset price booms. The current bout of financial turmoil itself was preceded by a run-up in asset prices which, in retrospect, may have been partially caused by the accommodative stance of monetary policy over the first half of the decade – however well motivated in terms of averting risks from deflation and corporate scandal – although this remains an area of controversy in the United States (see Taylor, 2007; and Negro and Otrok, 2007, for opposing views). During the same period, incomplete business cycle convergence within the euro area resulted in a situation where, for some member countries including Ireland and Spain in particular, monetary policy rates were persistently and significantly below what traditional rules-of-thumb would have suggested.^{20, 21} Over the 2001-06 period, the cross-country correlation between various indicators of housing market buoyancy and the deviation between actual euro area interest rates and country-specific rule-of-thumb rates is striking and, while somewhat weaker, this correlation also seems to exist when looking at a broader country sample (Figure 1.19).


Figure 1.19. **Low interest rates and the housing investment boom, 2001-06**



Note: Filled triangles refer to euro area countries.

1. Average shortfall of short-term interest rates below those implied by a Taylor rule, see Ahrend et al. (2008).

Source: OECD calculations.

StatLink  <http://dx.doi.org/10.1787/364187634067>

20. Taylor rules, relating interest rates to inflation and the output gap, are used as the benchmark rule for this analysis, for further details see Ahrend et al. (2008).
21. In a monetary union the central bank obviously has to focus on the currency area in its entirety when setting interest rates, even if this has diverging effects on asset prices which, potentially, may lead to financial imbalances in some member countries.

But using monetary policy to combat potential bubbles may be difficult

The issue of whether and how central banks should react to possible asset price misalignments remains controversial. One view is that the presence of a bubble can only be established with sufficient certainty once it has burst, and that central banks should only clean up the fallout from a collapsed bubble *ex post* (Greenspan, 2002). On the other hand, it may be argued that asset price misalignments are no more difficult to identify than other unobservables (such as output gaps or structural unemployment rates) regularly relied upon for making monetary policy decisions, and high growth in credit aggregates may be helpful in identifying unsustainable asset price increases (Borio and Lowe, 2004). Recent Australian experience has been cited as a successful example of preventing an asset price boom from getting out of hand (Gruen *et al.*, 2003). Monetary policy action is likely to be more useful in the earlier stages of a bubble, because tightening shortly before a bubble bursts can worsen the ensuing economic decline, but it is in the early stages that a bubble is particularly difficult to detect. That said, monetary policy reaction to the bursting of a bubble has often involved rapid and large cuts in interest rates which have often been followed by a very gradual process of normalisation. Somewhat greater symmetry between the down- and the upside may be desirable. In any case, for areas sharing the same currency, or countries with fixed exchange rate regimes, a monetary policy option to fight unwarranted asset price booms upfront does not exist.

There is greater scope for using macro-prudential instruments

An alternative approach to tackling the build-up of a financial bubble, as well as providing a better buffer against its subsequent bursting, might involve “macro-prudential” instruments (Borio and White, 2004). This could include making capital adequacy, loss provisioning²² or reserve requirements dependent on measures of credit growth or risks of overvaluation of assets, although a potential drawback is that this may single out the banking sector and so result in a shift of activity to unregulated non-banking financial institutions. Such measures may entail some efficiency costs, but especially, though not exclusively, for areas in monetary unions, such costs should be set against the risk of being exposed to financial shocks with no ability to respond through monetary policy.

22. An option to make banks behaviour less pro-cyclical is to enforce a dynamic provisioning framework by which banks make provisions based on the losses expected when loans are originated rather than on actual losses. In such a framework, provisions rise during credit booms before losses materialise, helping to protect banks when actual losses increase (Mann and Michael, 2002). Such a framework has operated in Spain since 1999 (Bank of Spain, 2002), although it has not prevented strong credit growth to the residential construction sector during the recent housing boom, and bank solvency ratios in 2007 (at around the peak of the boom) were no better than in the EU on average (Bank of Spain, 2007).

APPENDIX 1.A1

*Estimated responses of OECD activity to various shocks***General features of the OECD Global Model**

The OECD's new model can be used to assess the effects of shocks

In this Appendix, the new OECD Global Model (Hervé et al., 2007) is used to evaluate the response of the major economies to a variety of shocks and to provide more detail on the analysis of financial spillovers described in the main text. The model itself is highly aggregated in terms of country coverage, identifying specifically the United States, the euro area, Japan and China. The other countries in the OECD and the rest of the world are combined into various groups that reflect the strength of trading links with one or more of the individual economies identified. The model's focus is on the global linkages between these economies and the accompanying feedback mechanisms. It identifies explicitly the channels through which changes in a variety of important variables affect growth and inflation through trade, exchange rates and international financial linkages.

Responses to a variety of shocks

It identifies important linkages between economies

A number of stylised shocks were chosen to reflect the various risks surrounding the current outlook. These include simulated responses of growth and inflation in the three major OECD economies to changes in US house prices, non-OECD demand, risk premia, exchange rates and oil prices, as shown in Table 1.9. Except where otherwise stated, nominal bilateral exchange rates are held constant. The monetary authorities are assumed to follow a Taylor rule and set short-term interest rates taking into account the deviation of output from potential as well as the difference between actual inflation and what is known about central bank inflation objectives. Regarding fiscal policy, the authorities are assumed to target a fixed debt-to-GDP ratio over the medium term.

A shock to US house prices remains localised...

- In the projections, the fall in US house prices is assumed to end by the second quarter of 2009. As an illustration of their impact, the model suggests that an additional 10% drop in house prices would lower US activity by ¼ per cent through both wealth and collateral effects and this would spill over into lower imports, improving the current account. Inflation would be lower but by a small amount. Spillover effects to the other major economies are minimal.

Table 1.9. **Estimated impacts if risks materialise**
 Difference from OECD Economic Outlook No. 83 projection, percentage points

	Weaker US house prices ¹		Lower emerging market demand ²		Continued financial turmoil ³		Depreciation of the dollar ⁴		Further oil price shock ⁵	
	2008	2009	2008	2009	2008	2009	2008	2009	2008	2009
United States										
Output growth	-0.2	-0.3	-0.1	-0.1	-0.3	-0.4	0.4	0.3	-0.1	-0.2
Inflation	0.0	-0.1	0.0	0.0	0.0	-0.1	0.2	0.3	0.2	0.1
Japan										
Output growth	0.0	0.0	-0.1	-0.3	-0.2	-0.3	0.0	-0.2	-0.1	-0.2
Inflation	0.0	0.0	-0.1	-0.1	-0.1	-0.1	0.0	-0.2	0.2	0.1
Euro area										
Output growth	0.0	0.0	0.0	-0.1	-0.1	-0.2	-0.2	-0.1	-0.1	-0.1
Inflation	0.0	0.0	0.0	0.0	0.0	-0.1	-0.1	-0.1	0.2	0.1

1. US house prices fall by 10%.


2. Domestic demand in emerging markets falls by 1%.

3. Risk premiums rise by 50 basis points in all countries.

4. The US dollar falls by 10% against all currencies.

5. The reported effects are for a 10% shock to oil prices relative to baseline; in the present case this is equivalent to an increase of \$12 per barrel relative to the baseline assumption of \$120 per barrel. These ready reckoner effects are approximately linear in percentage terms, although significantly larger shocks need to be re-evaluated on a specific basis.

Source: OECD calculations.

StatLink  <http://dx.doi.org/10.1787/363204553721>

... as does a decline in emerging market demand

- Emerging market economies have become important drivers of growth for the OECD area and in these projections they are assumed to continue growing at a robust pace, driven by healthy domestic demand, with less of a reliance on trade. The effects of a 1% reduction in domestic demand in emerging markets on the OECD economies would be distributed according to the importance of trade with these economies. Japan, with closer trade ties with a number of these economies (notably China), would be affected by more and would also see a small drop in its inflation rate.

On the other hand changes to risk spreads...

- A further 50 basis point increase in risk spreads in all countries (a proxy for financial turmoil) would have significant effects across countries. The US economy would be hit the hardest as households' consumption is more sensitive to interest rates. The other two main OECD economies would also be affected, but to a lesser degree, with Japan feeling more of the shock than the euro area in part because of the lack of scope for policy to respond. Inflation is lowered in all economies by a small amount.

... exchange rates...

- A feature of the current conjuncture has been the adjustment in exchange rates, with the US dollar depreciating in both nominal and effective terms against the euro and the yen. A further 10% depreciation of the US dollar in nominal terms against each economy would boost US activity through trade as well as raise inflation. The counterpart would be lower activity and inflation in the euro area and Japan.

... or oil prices tend to affect all economies

- The other important feature of the existing economic situation has been the continuous rise in the price of oil, which recently peaked at over \$130 (per barrel of Brent). A 10% further increase in oil prices would slow growth in the major economies on the order of a tenth in the first year of the shock cumulating to two tenths by the second year. These simulations assume that respending out of extra oil revenues remains unchanged and that there are no second-round effects into core inflation. They also do not allow for possible adverse effects on potential output.

Details on the spillover of financial market risks

The details behind the simulations of US financial turmoil

Table 1.10 provides more detail on the simulations of the effects of the change in financial market conditions and exchange rates described in the main text. It is important to note that summing across rows in this table does not produce a figure that adds up to the total effects shown in Table 1.6 above because of the various endogenous responses contained in the model when all shocks are applied simultaneously and different policy reactions. That said, looking at the shocks individually does provide important insights on the relative importance of individual components and the different mechanisms involved.


Table 1.10. **Details underlying the simulations of turmoil since end-2007**

	Global shock		US housing price		US housing investment		Risk premia		Exchange rates		Equity price	
	2008	2009	2008	2009	2008	2009	2008	2009	2008	2009	2008	2009
United States												
GDP level	-0.7	-1.2	-0.1	-0.4	-0.1	0.0	-0.3	-0.6	0.1	0.2	-0.3	-0.8
Inflation ¹	-0.1	-0.2	0.0	-0.1	0.0	-0.1	0.0	-0.1	0.1	0.1	-0.1	-0.1
Current balance ²	0.2	0.3	0.0	0.1	0.1	0.0	0.0	0.1	0.0	0.1	0.0	0.1
Euro area												
GDP level	-0.7	-1.3	0.0	0.0	0.0	0.0	0.0	-0.2	-0.4	-0.6	-0.3	-0.4
Inflation ¹	-0.2	-0.5	0.0	0.0	0.0	0.0	0.0	0.0	-0.1	-0.3	-0.1	-0.1
Current balance ²	0.1	-0.1	0.0	0.0	0.0	0.0	0.0	0.1	-0.1	-0.3	0.2	0.2
Japan												
GDP level	-0.5	-1.2	0.0	-0.1	0.0	0.0	0.0	-0.2	-0.3	-0.7	-0.1	-0.3
Inflation ¹	-0.4	-0.6	0.0	0.0	0.0	0.0	0.0	-0.1	-0.3	-0.4	-0.1	-0.1
Current balance ²	-0.7	-0.8	0.0	0.0	0.0	0.0	0.0	-0.1	-0.6	-0.7	0.0	-0.1
Total OECD												
GDP level	-0.6	-1.1	-0.1	-0.2	-0.1	0.0	-0.1	-0.4	-0.1	-0.2	-0.3	-0.5
Inflation ¹	-0.1	-0.3	0.0	0.0	0.0	0.0	0.0	-0.1	0.0	0.0	-0.1	-0.1
Current balance ²	-0.1	-0.1	0.0	0.0	0.0	0.0	0.0	0.0	-0.1	-0.2	0.0	0.0
China												
GDP level	-0.3	-0.5	0.0	-0.1	-0.1	0.0	-0.1	-0.2	-0.1	0.0	-0.1	-0.3
Inflation ¹	0.1	0.4	0.0	0.0	0.0	0.0	0.0	-0.1	0.2	0.6	0.0	-0.1
Current balance ²	-0.2	-0.1	0.0	0.0	0.0	0.0	0.0	-0.1	0.0	0.1	-0.1	-0.1

1. Consumer price deflator.

2. Per cent of GDP.

Source: OECD calculations. See text for description of the shocks.

StatLink  <http://dx.doi.org/10.1787/363242578375>

The shocks have several components

The specific component shocks in the simulations illustrating changes since the previous Outlook in November are:

- *US housing price*: 10% decrease in US house prices.
- *US housing investment*: starting in the first quarter of 2008, investment relative to GDP declines at a decreasing rate until the fourth quarter of 2009.
- *Risk premia*: For the United States, the risk spread (225 basis points) is the amount by which US high yield corporate spreads rose between November 2007 and March 2008. Over the same period, the spread of BBB bonds in the euro area rose by 120 basis points, while Baa spreads in Japan rose by 80 basis points. These spreads are assumed to persist through 2008 and then are gradually removed starting in the first half of 2009.
- *Exchange rates*: appreciations against the dollar in 2008 and 2009 occur in the euro area (9 and 10%) and in Japan (7 and 8%). Commodity exporters such as Canada experience mild depreciations (2.7 and 2.5%), and in China there is an additional 2% appreciation for both years.
- *Equity prices*: the 10% fall in equity prices in the US remains through 2008 and 2009, as do reductions in the euro area and Japan of 17% and 16%, respectively.

APPENDIX 1.A2

Quantifying the effect of financial conditions on US activity

The impact of financial conditions on activity

Financial conditions affect activity through several channels...

This appendix explores ways to quantify the effect of financial headwinds on the US economy, where currently such effects are judged to be large. That economy also has the advantage of having a wide range of financial market variables with a sufficiently long enough time series to allow estimation. There is abundant empirical evidence regarding the effect of interest rates, the exchange rate and asset prices on GDP or its component expenditures. There is also empirical evidence to show that bond spreads have significant explanatory power for the US business cycle (for example Gertler and Lown, 2000, and Mody and Taylor, 2003). Moreover, recent work has found a significant impact of non-price credit standards, as measured by responses to the federal loans officer's survey, on US growth (Lown and Morgan, 2004, Estrella, 2004, and Deutsche Bank, 2008).

... including non price credit conditions

Numerous studies, some of which are summarised in Table 1.11, have constructed various financial conditions indices (FCIs) which attempt to provide a single summary measure of the overall stance of financial conditions. Most of these incorporate effects from asset prices as well as

Table 1.11. **Summary table of previous work to construct financial conditions indices**

Study	Countries covered	Financial variables included ¹	Comments
Goldman Sachs (2000)	United States	Stock market capitalisation/GDP	Weights based on GDP effects derived from Fed's macro model
Goodhart and Hofmann (2001)	Each of the G7	Real house prices, real equity prices	Alternative Financial Conditions Index (FCI)'s calculated both from reduced form and Vector Auto Regression (VAR) estimation
Gauthier, Graham, Liu (2004)	Canada	Real housing prices, real US equity prices, US high yield spread	Alternative FCI's calculated from reduced form, VAR estimations and factor analysis
Mayes and Virén (2001)	11 European countries	Real house prices, real asset prices	Reduced form equations

1. In addition to (low-risk) interest rates and the exchange rate.

Source: OECD calculations.

interest rates and the exchange rate. However, there does not seem to have been any attempt to incorporate into a single FCI asset price effects, risk spreads and non-price credit conditions as well as interest rates and the exchange rate.

Empirical work underlying the construction of a financial conditions index

Econometric estimations

Using econometric techniques...

The weight of each variable in the FCI is based on the relative effect of a one-unit change in that variable on US GDP. Estimation was undertaken using two methods: an unrestricted vector auto-regression (VAR) to explain GDP growth and a reduced form equation for the output gap. In both cases potential financial explanatory variables which were investigated included: real short-term interest rates, real long-term interest rates, the real effective exchange rate, various measures of bond spreads, stock market capitalisation and real housing wealth (both expressed as a share of GDP and taken as the deviation from trend, following Goodhart and Hofmann, 2001). In addition, the VAR estimation included core inflation and oil prices in the specification (the latter as an exogenous variable). The estimations were carried out on quarterly data spanning the period 1990Q4 to 2007Q3.²³

... the impact of each financial variable on GDP is estimated

The estimated average effect on GDP after four to six quarters following a shock to each financial variable is reported in Table 1.12 for a preferred specification from both the reduced form and VAR.²⁴ The main findings from these results are as follows.

Credit standards always play an important role...

- The non-price measure of credit availability²⁵ has a significant, correctly signed and similar effect in both the VAR and reduced form estimations; a net 10 percentage points tightening in the survey response on lending conditions reduces GDP by about $\frac{1}{4}$ percentage point after four to six quarters. The magnitude of these effects is smaller, but not dissimilar to those obtained by Lown and Morgan (2004).²⁶

23. The estimation period is limited by availability of data for the Federal Loan Officer Survey, which starts in 1990.

24. For the VAR, generalised impulse functions are calculated to determine the FCI weights, following the approach proposed by Pesaran and Shin (1998) (and used by Gauthier *et al.* (2004) in their construction of an FCI for Canada), which has the merit that responses are invariant to the ordering of the variables.


25. The Federal Loan Officers Survey provides responses on the number of banks tightening credit standards over a three-month period, so that, depending on how banks interpret the questionnaire, it does not necessarily provide an absolute measure of the credit standards rather than a measure of how they have changed. However, alternative functional forms of the survey responses, in which they were variously accumulated over time, invariably led to deterioration in goodness-of-fit in the empirical estimation. Cunningham (2006) expresses some scepticism about the information content of the loan officer survey responses, but this is mainly related to responses regarding consumer and real estate loans rather than those to businesses.

26. Lown and Morgan (2004) report a peak effect on GDP of -0.5% for a shock to credit standards of 8 percentage points.

Table 1.12. **The estimated effects on GDP from shocks to financial variables**

	Shock	Effect on GDP (%) after 4-6 quarters	
		Reduced form equation	VAR
Real short-term interest rates	100 basis point increase	-0.09	-0.06
Real long-term interest rates	"	-0.52	-0.10
High yield bond spread	"	-0.04	-0.23
Baa rated bond spread	"	-0.52	--
Credit standards tightening	10 percentage point increase	-0.27	-0.23
Real exchange rate	"	-	-1.14
Stock market capitalisation (ratio to GDP, de-trended)	"	-0.52	-

Source: OECD calculations.

StatLink  <http://dx.doi.org/10.1787/363243762873>

... as do corporate bond spreads

- The corporate bond spread and the high yield bond spread are always correctly signed and statistically significant when included separately in the reduced form estimation, but due to collinearity between the variables it is difficult to find them both significant simultaneously.

The impact of “safe” bond rates varies with the estimation technique

- In both the VAR and reduced form estimation, interest rates are correctly signed, with a more powerful effect from real long-term rates than short-term rates. However, the magnitude of the effect of interest rates on GDP is more than three times stronger in the reduced form estimation than the VAR.

The real exchange rate is only weakly significant

- The real effective exchange rate variable is rarely statistically significant in the reduced form estimation and is excluded from the preferred specification summarised in Table 1.12. There is an economically sizeable (but statistically weak) effect from the real exchange rate in the VAR specification.

Results on assets prices are mixed

- Stock market capitalisation had a strong, well determined effect in the reduced form estimation, that is substantially greater than suggested by back of the envelope calculations regarding a conventional wealth effect operating through consumption. It was not significant in the VAR. This difference may be due to problems of causality and simultaneity in the reduced form estimation where it may be difficult to distinguish whether an increase in equity prices today is causing a future increase in activity (via a wealth effect) or is anticipating it (perhaps in response to some other financial news). This is borne out by Goodhart and Hoffman (2001), who in estimating FCIs for the G7 countries found a much lower effect of the stock market effect on GDP in a VAR than in a reduced form. Various measures of housing wealth were always statistically insignificant and/or incorrectly signed and so omitted from both estimation methods.

Computing the financial conditions index

The weights derived from the reduced form

The preferred FCI is based on the reduced form equation


The retained preferred specification is based on the reduced form equation for the output gap explained by the real long-term interest rate, dynamic (i.e. temporary) effects from real short-term interest rates, the real exchange rate, spreads on high-yield and Baa corporate bonds, stock market capitalisation, as well as non-price credit standards (for more details on the estimations see Guichard and Turner, 2008). Weights of the variables in the FCI (Table 1.13) are based on the relative effect of a one unit change in the relevant variable on GDP, evaluated as the average effect on the level of GDP after four to six quarters, a horizon chosen because of its relevance to monetary policy. To attenuate the impact of simultaneity and causality that may affect the weight of the stock market variable, instead of using the result from the estimation, the weight has been calibrated on the basis of a “3½ cents” wealth effect operating through consumption (similar to that used in the Federal Reserve’s FRB/US model). A weight of 0.15 has been imposed on the real exchange rate, which is the weight used in the OECD MCI and derived from large-scale macro model simulations.

Table 1.13. **The weights used to construct the financial condition indices**

	Weights used in construction of index			
	Standard deviation, 1990-2007	OECD Monetary Conditions Index (MCI)	Financial Conditions Index (FCI)	VAR FCI
Real short-term interest rates (%)	1.74	1.00	0.20	0.24
Real long-term interest rates (%)	1.21		1.00	1.00
High yield bond spread (%)	-0.20		0.08	0.94
Baa rated bond spread (%)	0.51		0.91	
Credit standards tightening (net % survey response)	21.5		0.05	0.11
Real exchange rate	0.08	0.15	0.15 ¹	0.15 ¹
Stock market capitalisation (ratio to GDP, de-trended)	0.21		-0.04 ¹	-0.04 ¹

1. Indicates an imposed coefficient. In the case of the Vector Auto Regression (VAR) the freely estimated weight of the real effective exchange rate is three times larger than the imposed one.

Source: OECD calculations.

StatLink  <http://dx.doi.org/10.1787/363251181664>

The weights derived from the VAR

A VAR based FCI gives more weight to current financial stress

A potential advantage of the VAR estimation over the reduced form estimation is that it better takes into account the feedback between all variables, which is particularly important when dealing with financial variables. The main difference in the weights from using the reduced

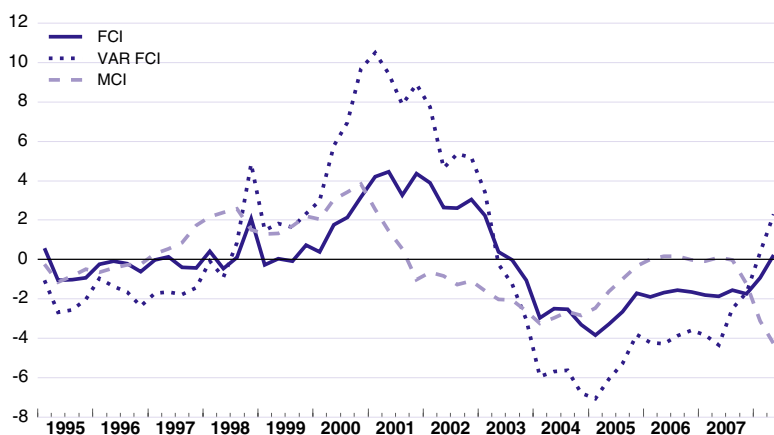
form or the VAR to compute the FCI is that the financial variables reflecting the current stress on financial and credit market have a much larger weight in the latter. This is because the effects of the real long term rates, on which the weights are normalised, are much lower in the VAR than the reduced form. As for the reduced form, a weight of 0.15 has been imposed on the real exchange rate. Although equity wealth variables had a non-significant impact on GDP in the VAR estimations, this variable was added by using the same calibrated weights as in the reduced form.

Comparing the evolution of narrow monetary conditions and broader financial conditions


Narrow monetary conditions have loosened during the turmoil

In order to contrast the recent evolution of narrow monetary with broader financial conditions, the main financial variables have, where necessary, been projected to give values for 2008Q2: the interest rates and exchange rates are those projected in the current *OECD Economic Outlook*; and interest rate spreads and stock market capitalisation remain at their most recently observed values. On this basis, narrow monetary conditions have been loosened significantly since the summer; the dollar has continued to depreciate and the federal funds rate has been cut by 325 basis points since August, which has mostly been reflected in the three-month euro-dollar deposit rate (the rate used in the construction of the OECD's monetary conditions index) (Figure 1.20). Moreover, monetary conditions are relatively easy when compared with the average stance since the mid-1990s.

Figure 1.20. Comparison of monetary (MCI) and financial (FCI) condition indexes



Source: OECD calculations.

StatLink  <http://dx.doi.org/10.1787/364204226375>

While broader financial conditions have tightened

This contrasts markedly with the current state of broader financial conditions, as measured by both FCIs, which have tightened since the summer reflecting the tightening in non-price credit standards and the increase in spreads for riskier borrowers. The overall tightening of the FCI since 2007Q2 could reduce GDP by a little more than 1 percentage point over the projection period (Table 1.14). While the tightening of credit standards combined with higher spreads and lower share prices could remove as much as 2.7% of GDP over the projection period, this negative impact is partly compensated by the monetary stimulus, lower real long-term rates and dollar depreciation. The tightening (and the implied impact on activity) is more pronounced for the FCI using the weights derived from the VAR as non price credit standards and spreads play a much prominent role in that index.

Table 1.14. **Accounting for the tightening in financial conditions since the onset of the financial turmoil**

Component of the Financial Conditions Index (FCI)	Change 2007 Q2 to 2008 Q2 ¹	Contribution to change in FCI	Estimated effect on GDP after 4-6 quarters
Net percentage of banks tightening standards	59.1	3.0	-1.6
Change in high yield spreads (percentage points)	3.5	0.3	-0.1
Change in AAB rated bond spreads (percentage points)	1.4	1.2	-0.7
Change in stock market capitalisation as a % of GDP (percentage points of GAP)	-0.1	0.6	-0.3
<i>Total negative factors</i>	0.0	5.1	-2.7
Change in real short-term interest rates (percentage points)	-2.9	-0.6	0.3
Change in real long term interest rates (percentage points)	-0.9	-0.9	0.5
Change in real exchange rate (%)	-10.0	-1.5	0.8
<i>Total supportive factors</i>		-3.0	1.6
Total		2.0	-1.1

1. 2008 Q2 is estimated.
Source: OECD calculations.

StatLink  <http://dx.doi.org/10.1787/363268821542>

APPENDIX 1.A3

*The medium-term reference scenario***Area-wide potential growth to ease to below 2%**

The medium-term reference scenario illustrates a supply-side driven dynamic path that closes output gaps by 2014. Underpinning the projections are several technical assumptions – described in Box 1.7. Tables 1.15 to 1.17 provide an overview of the scenario to 2014. The main feature is that, over the period from 2010 to 2014, potential GDP growth for the OECD area as a whole is expected to slow – to below 2% *per annum* by 2014. This mainly reflects an expected slowing of working age population growth and trend participation rates. In light of anticipated negative effects on potential output growth from higher oil prices and higher financial risk premia, potential growth is also assumed to be

Box 1.7. Assumptions underlying the medium-term reference scenario

The medium-term reference scenario is conditional on the following stylised assumptions for the period beyond the short-term projection horizon:

- Gaps between actual and potential output are eliminated by 2014 in all OECD countries.
- Unemployment returns to its estimated structural rate (the NAIRU) in all OECD countries by 2014.¹
- Oil and other commodity prices remain unchanged in real terms.
- Exchange rates for all countries remain unchanged in nominal terms.
- Monetary policies are directed at keeping inflation low, or bringing inflation in line with medium-term objectives.
- Fiscal policies are assumed to remain broadly unchanged (with the cyclically-adjusted primary budget deficit/surplus held approximately constant from one year to the next),² subject to OECD assessment of specific influences implicit in currently legislated tax and expenditure measures.
- Consistent with the analysis set out in Chapter 3, potential growth has been adjusted down marginally from 2010 on for all member countries to reflect the impact of continuing high oil prices and higher financial risk premia on the supply side.

The main purpose of the medium-term reference scenario is to provide a basis for comparisons with other scenarios based on alternative assumptions and to provide insights on the possible build-up or unwinding of specific imbalances and tensions in the world economy over the medium term. The reference scenario does not embody a specific view about the nature or timing of future cyclical events.

1. Estimates of the structural rate of unemployment are from Gianella *et al.*, (2008). The concept and measurement of structural unemployment rates are also discussed in OECD (2000).
2. This implicitly assumes that the authorities take measures to offset underlying changes in primary structural balances.

Table 1.15. **Medium-term reference scenario summary**

Per cent

	Real GDP	Inflation rate ¹		Unemployment		Current balance ³		Long-term	
	growth			rate ²				interest rate	
	2010-2014	2009	2014	2009	2014	2009	2014	2009	2014
Australia	2.8	3.1	2.5	4.7	5.1	-4.6	-2.8	6.1	6.5
Austria	1.8	2.3	1.9	4.8	5.2	3.3	2.7	4.4	4.7
Belgium	1.8	2.0	1.9	7.2	7.9	0.9	0.8	4.4	4.7
Canada	2.5	1.1	2.0	6.3	6.0	-0.8	1.6	4.2	5.2
Czech Republic	3.5	2.9	2.0	4.4	4.9	-1.8	-1.8	4.8	5.0
Denmark	1.0	2.6	1.9	3.7	4.2	0.7	1.6	4.4	4.8
Finland	1.9	2.4	1.9	6.0	6.9	2.4	0.6	4.4	4.7
France	1.7	2.2	1.9	7.6	8.0	-1.6	-0.9	4.3	4.7
Germany	1.4	1.7	1.9	7.4	8.2	7.7	7.4	4.3	4.7
Greece	3.5	3.1	1.9	7.7	8.7	-15.2	-13.6	4.5	4.7
Hungary	3.4	3.7	2.0	7.6	6.1	-4.1	-4.0	7.1	5.0
Iceland	4.5	6.0	2.8	5.7	3.0	-8.6	-14.7	10.3	6.7
Ireland	5.5	2.1	1.9	6.5	4.7	-3.8	-5.1	4.4	4.7
Italy	1.5	2.0	1.9	6.5	6.1	-2.6	-2.6	4.6	4.8
Japan	1.1	0.3	1.0	3.8	4.0	4.4	3.5	2.1	3.3
Korea	4.6	3.2	3.0	3.1	3.4	-1.0	0.9	5.8	6.9
Luxembourg	4.7	2.1	1.9	4.9	5.2	9.2	4.4	3.9	4.7
Mexico	4.5	3.4	3.2	3.6	3.2	-2.0	-1.7	7.0	7.0
Netherlands	1.0	2.8	1.9	2.7	3.5	5.9	5.2	4.4	4.7
New Zealand	2.3	2.2	2.0	3.8	4.0	-8.1	-6.0	6.4	5.7
Norway	2.8 ⁴	2.5	2.0	2.8	3.3	18.6	16.7	4.5	4.7
Poland	3.4	5.4	2.0	6.9	8.2	-5.6	-2.8	5.9	5.6
Portugal	1.6	2.2	1.9	7.9	6.8	-11.6	-11.3	4.5	4.7
Slovak Republic	6.2	3.6	2.9	9.6	6.2	-3.1	-2.9	4.5	4.7
Spain	3.3	3.0	1.9	10.7	8.1	-9.8	-8.2	4.3	4.7
Sweden	2.2	2.4	1.9	4.4	4.6	8.4	7.5	4.9	4.7
Switzerland	2.1	1.5	1.0	3.8	3.7	11.0	11.4	3.3	3.0
Turkey	6.8	7.5	4.6	10.5	7.9	-5.3	-4.9	17.2	9.2
United Kingdom	2.4	2.9	2.0	5.8	5.4	-3.1	-3.0	4.8	5.5
United States	2.5	2.0	1.9	6.1	4.9	-4.4	-4.4	4.4	5.2
Euro area	1.9	2.2	1.9	7.4	7.3	0.0	0.0	4.4	4.7
Total OECD	2.4	2.0 ⁵	1.9 ⁵	6.0	5.5	-1.1	-1.1	4.3 ⁵	5.0 ⁵

Note: For further details see *OECD Economic Outlook Sources and Methods* (<http://www.oecd.org/eco/sources-and-methods>).

1. Percentage change from the previous period in the private consumption deflator.


2. Per cent of labour force.

3. Per cent of nominal GDP.

4. Including oil-sector.

5. Excluding Turkey.

Source: OECD Economic Outlook 83 database.

StatLink  <http://dx.doi.org/10.1787/363338730016>

slightly lower (between 0.1% and 0.2%) in all OECD countries than would otherwise be the case (Chapter 3). Given the technical nature of the assumptions that underlie this scenario, it is mainly intended to serve as a benchmark for the analysis of global interlinkages and transmission of local shocks, as discussed in the main text.

Table 1.16. **Fiscal trends in the medium-term reference scenario**

As a percentage of nominal GDP

	Financial balances ¹		Net financial liabilities ²		Gross financial liabilities ³		Gross public debt (Maastricht definition) ⁴	
	2009	2014	2009	2014	2009	2014	2009	2014
Australia	1.7	1.6	-9	-14	14	9	..	..
Austria	-0.8	-1.0	34	33	61	60	58	58
Belgium	-0.9	-1.1	70	63	85	78	81	75
Canada	-0.5	0.0	22	18	65	62	..	..
Czech Republic	-1.3	-1.1	-8	-1	31	28	..	..
Denmark	3.0	2.2	-9	-19	25	15	19	9
Finland	3.8	3.6	-73	-79	39	33	33	27
France	-2.9	-2.9	37	45	73	80	67	75
Germany	-0.2	-0.5	42	38	63	59	63	58
Greece	-2.1	-2.0	64	58	98	92	90	84
Hungary	-3.5	-2.9	54	57	73	72	..	..
Iceland	-1.0	1.0	1	1	23	23	..	..
Ireland	-2.6	-0.8	5	11	35	41	30	36
Italy	-2.7	-1.8	91	87	117	113	104	100
Japan	-2.2	-3.6	88	94	170	177	..	..
Korea	4.4	4.5	-42	-51	25	16	..	..
Luxembourg	1.3	3.3	-44	-43	10	-5	..	..
Netherlands	1.5	0.7	24	16	47	39	41	33
New Zealand	1.8	2.0	-15	-21	21	16	..	..
Norway	17.1	12.4	-165	-196	76	47	..	..
Poland	-2.7	-2.7	22	27	54	60	..	..
Portugal	-2.0	-0.9	44	43	72	72	64	64
Slovak Republic	-1.6	-1.1	8	11	39	31	..	..
Spain	-0.3	0.9	19	14	41	35	34	29
Sweden	2.7	2.9	-25	-34	37	28	31	21
Switzerland	0.1	-0.1	12	10	57	55	..	..
United Kingdom	-3.7	-2.7	35	43	52	60	49	57
United States	-5.2	-4.6	52	64	70	82	..	..
Euro area	-1.2	-1.0	43	41	70	69	66	64
Total of above OECD countries	-2.6	-2.4	44	49	78	82		

Note: For further details see *OECD Economic Outlook Sources and Methods* (<http://www.oecd.org/eco/sources-and-methods>).

1. General government fiscal surplus (+) or deficit (-) as a percentage of GDP.

2. Includes all financial liabilities minus financial assets, as defined by the System of National Accounts (where data availability permits) and covers the general government sector, which is a consolidation of central government, state and local government and the social security sector.

3. Includes all financial liabilities, as defined by the System of National Accounts (where data availability permits) and covers the general government sector, which is a consolidation of central government, state and local government and the social security sector.

4. Debt ratios are based on debt figures for 2007, provided by Eurostat, and GDP figures from national authorities, projected forward in line with the OECD projections for GDP and general government financial liabilities.

Source: OECD Economic Outlook 83 database.

StatLink  <http://dx.doi.org/10.1787/363365563480>

Scenario starts with output gaps that are generally negative

The output gap for the OECD area is now expected to be negative at the end of the short-term projection period in 2009. By assumption, actual GDP will be moving toward potential and therefore grows slightly faster than potential over the medium-term horizon. At the same time OECD-

Table 1.17. **Growth in total economy potential output and its components**

Annual averages, percentage points


	Output gap	Potential GDP growth		Potential labour productivity growth (output per employee)		Potential employment growth		Components of potential employment ¹					
								Trend participation rate		Working age population		Structural unemployment ²	
		2009	2005-2009	2010-2014	2005-2009	2010-2014	2005-2009	2010-2014	2005-2009	2010-2014	2005-2009	2010-2014	2005-2009	2010-2014
Australia	-0.1	3.2	2.8	1.1	1.4	2.0	1.4	0.3	0.1	1.6	1.3	0.1	0.0
Austria	0.3	2.1	1.9	1.7	1.6	0.4	0.3	0.1	0.0	0.3	0.3	0.0	0.0
Belgium	-1.0	2.3	1.6	1.2	1.5	1.1	0.2	0.3	0.2	0.8	0.0	0.0	0.0
Canada	-2.0	2.8	2.0	1.2	1.4	1.6	0.6	0.2	0.1	1.2	0.5	0.2	0.0
Denmark	1.2	1.5	1.3	1.1	1.4	0.4	-0.1	0.1	0.0	0.1	-0.1	0.1	0.0
Finland	0.4	3.2	2.0	2.5	2.4	0.7	-0.3	0.2	0.1	0.3	-0.4	0.2	0.0
France	-0.2	1.9	1.7	1.1	1.1	0.8	0.6	0.0	0.0	0.6	0.6	0.1	0.0
Germany	0.5	1.4	1.5	1.3	1.3	0.1	0.2	0.5	0.2	-0.4	0.0	0.1	0.0
Greece	-0.3	4.1	3.4	2.9	3.2	1.2	0.2	0.6	0.4	0.4	-0.2	0.2	0.0
Iceland	-5.9	4.8	3.2	2.8	2.2	1.9	0.9	-0.4	0.3	2.3	0.6	0.0	0.0
Ireland	-4.7	5.0	4.5	1.5	1.8	3.5	2.7	1.0	0.8	2.5	1.9	0.0	0.0
Italy	-2.3	1.3	1.1	0.5	1.2	0.8	-0.1	0.5	0.1	0.0	-0.2	0.2	0.0
Japan	0.7	1.5	1.2	1.9	1.9	-0.3	-0.7	0.3	0.2	-0.7	-0.9	0.0	0.0
Netherlands	1.5	1.8	1.3	1.3	1.1	0.5	0.2	0.4	0.3	0.1	-0.1	0.0	0.0
New Zealand	-0.8	2.7	2.2	1.0	1.4	1.7	0.7	0.5	0.2	1.1	0.6	0.1	0.0
Norway ³	2.5	3.6	3.3	2.4	2.6	1.2	0.6	-0.1	0.0	1.1	0.6	0.1	0.0
Poland	2.4	4.8	3.9	3.2	3.7	1.5	0.3	-0.5	0.0	0.4	-0.4	1.6	0.7
Portugal	-2.1	1.7	1.2	1.2	1.1	0.5	0.1	0.4	0.0	0.2	0.0	-0.1	0.0
Spain	-3.0	3.2	2.7	0.2	1.1	3.0	1.6	0.9	0.2	1.7	1.3	0.4	0.1
Sweden	-0.5	2.9	2.1	2.1	2.2	0.8	-0.1	0.1	0.1	0.6	-0.2	0.0	0.0
Switzerland	0.8	2.3	2.3	1.2	1.6	1.1	0.6	0.3	0.0	0.8	0.6	0.0	0.0
United Kingdom	-1.5	2.7	2.1	1.8	1.9	0.9	0.3	0.0	0.0	0.8	0.3	0.0	0.0
United States	-2.2	2.5	2.1	1.8	1.7	0.7	0.4	-0.5	-0.7	1.2	1.1	0.0	0.0
Euro area	-0.8	2.0	1.7	1.1	1.3	0.9	0.4	0.4	0.1	0.4	0.3	0.1	0.0
Total of above OECD countries	-1.1	2.3	1.9	1.5	1.6	0.7	0.3	-0.1	-0.3	0.8	0.6	0.1	0.0

1. Percentage point contributions to potential employment growth.

2. Estimates of the structural rate of unemployment are from Gianella *et al.* (2008), based on the concepts and methods described in OECD (2000).

3. Excluding the oil sector.

Source: OECD Economic Outlook 83 database.

StatLink  <http://dx.doi.org/10.1787/363370088285>

wide unemployment is assumed to fall gradually to an underlying structural rate of about 5½ per cent of the labour force by 2014.²⁷

Fiscal imbalances remain

The real price of oil is assumed to be unchanged over the period, so has no further inflationary impact. In fact, the negative output gaps at the beginning of the scenario suggest a decline of inflation during the

27. A recent re-estimation of NAIRUs (Gianella *et al.*, 2008) resulted in some changes to the estimated NAIRU for a few countries.

medium-term scenario. This occurs in many countries but is partially masked in aggregate by increasing Japanese inflation. Aggregate OECD-wide inflation is thus stabilising at just under 2% *per annum*. Fiscal balances for the area as a whole improve slightly given the assumption of growth returning to potential. Nonetheless, deficits on average remain just under 2½ per cent of GDP, reflecting continuing large structural deficits in the major economies and lack of specific policies to deal with them.

**Potential growth: lower
in the United States...**

Potential output growth for the United States is projected to decline to an annual rate of just over 2% by 2014. This mainly reflects continued decreases in potential employment growth. With output below potential in 2009, GDP growth is projected to exceed that of potential, whilst inflation stabilises at just under 2% in the medium term. Without new policies aimed at fiscal consolidation, the general government deficit remains substantial – staying above 4½ per cent of GDP in 2014.²⁸ Public debt therefore rises substantially, with general government financial liabilities, whether on a net or gross basis, being among the highest in the OECD as a share of GDP by the end of the period – only Italy and Japan would have higher net debt.

**... with some European
economies slowing while
others maintain
momentum**

Potential output growth in the euro area, at around 1¾ per cent *per annum* in the medium term, is lower than in the United States. This reflects less favourable trends in labour productivity – a continuation of post-1995 outcomes. With output below potential in 2009 in the euro area, the output gap is closed slowly with actual GDP growth just under 2% *per annum*. In contrast, the new European Union member countries are generally projected to have substantially higher rates of potential (and actual) growth, albeit slowing during the period.

**Net debt falls in several
economies**

Unemployment in the euro area is assumed to stabilise at an annual structural rate just under 7½ per cent while inflation stabilises at under 2% *per annum*. The fiscal deficit for the euro area as a whole stabilises at 1% of GDP without additional fiscal measures. On the basis of present policy settings, significant reductions in net debt (as a percentage of GDP) of euro area economies occur in Belgium, Germany, Greece, Netherlands, and Spain, whilst a substantial increase occurs in France. Amongst other European economies, Poland and the United Kingdom experience substantial increases in net debt.

**For Japan growth slows
in line with potential**

Japan's potential output growth is projected to decline over the period to be just over 1% by 2014. This reflects the effects of population ageing – which more than offsets projected increases in trend labour productivity. With Japan operating somewhat above potential going into 2010, GDP growth is projected to slow over the medium term to 1% *per annum* by 2014, with consumer price inflation also converging to around 1%. The

28. The tax cuts of 2001 and 2003 are assumed to remain in place.

public deficit in Japan is projected to deteriorate over the medium term to just over 3½ per cent of GDP in 2014, pushing gross public sector liabilities to just under 180% of GDP. This deterioration is largely structural, arising from an increase in ageing-related expenditures and increasing interest payments, despite annual increases in social security contributions assumed to take place over the period.

World trade remains robust...

World trade growth is projected to pick up to over 10% *per annum* (nominal) over the medium term. This is faster than during recent periods, but reflects in part the projected recovery in economic growth within the OECD – combined with continued robust and trade-intensive growth in China and Dynamic Asia. In contrast, OECD trade grows more slowly at just under 5½ per cent *per annum* over the projection period.

... but current accounts fail to adjust

For the OECD area as a whole, the current account deficit remains relatively stable, at just over 1% of GDP. Since exchange rates are, by assumption, not changing over the medium term, and other trend factors such as potential growth remain stable, there is little adjustment in regional imbalances. For the euro area, the current account remains close to balance. The US current account deficit is projected to persist, staying just under 4½ per cent of GDP in 2014. Japan's surplus is projected to decrease to around 3½ per cent of GDP in 2014.

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Conventional signs

\$	US dollar	.	Decimal point
¥	Japanese yen	I, II	Calendar half-years
£	Pound sterling	Q1, Q4	Calendar quarters
€	Euro	Billion	Thousand million
mb/d	Million barrels per day	Trillion	Thousand billion
..	Data not available	s.a.a.r.	Seasonally adjusted at annual rates
0	Nil or negligible	n.s.a.	Not seasonally adjusted
-	Irrelevant		

Summary of projections

	2007	2008	2009	2007		2008		2009				Fourth quarter			
				Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	2007	2008	2009
Per cent															
Real GDP growth															
United States	2.2	1.2	1.1	0.6	1.0	-0.5	0.7	0.2	1.0	1.4	2.2	3.0	2.5	0.3	1.9
Japan	2.1	1.7	1.5	2.6	3.3	1.1	1.0	1.3	1.6	1.6	1.7	1.7	1.5	1.7	1.6
Euro area	2.6	1.7	1.4	1.2	3.1	0.2	1.1	1.2	1.4	1.7	1.8	1.9	2.1	1.4	1.7
Total OECD	2.7	1.8	1.7	1.7	2.1	0.5	1.2	1.2	1.7	2.0	2.4	2.7	2.6	1.3	2.2
Inflation¹															
United States	2.5	3.2	2.0	3.9	3.5	3.6	2.4	2.0	1.8	1.7	1.6	1.6	3.4	2.9	1.6
Japan	0.1	0.9	0.4	1.6	1.2	0.6	0.3	0.3	0.3	0.4	0.5	0.6	0.5	0.6	0.5
Euro area	2.1	3.4	2.4	4.8	4.2	3.3	2.6	2.4	2.3	2.2	2.1	2.0	2.9	3.1	2.1
Total OECD	2.2	3.0	2.1	3.5	3.4	3.2	2.5	2.3	2.0	1.9	1.8	1.8	2.8	2.8	1.9
Unemployment rate²															
United States	4.6	5.4	6.1	4.8	4.9	5.2	5.5	5.8	6.0	6.2	6.2	6.1	4.8	5.8	6.1
Japan	3.9	3.8	3.8	3.9	3.8	3.8	3.8	3.9	3.9	3.8	3.7	3.7	3.9	3.9	3.7
Euro area	7.4	7.2	7.4	7.1	7.1	7.2	7.2	7.3	7.4	7.4	7.5	7.5	7.1	7.3	7.5
Total OECD	5.6	5.7	6.0	5.5	5.6	5.7	5.7	5.9	6.0	6.0	6.0	6.0	5.5	5.9	6.0
World trade growth															
	7.1	6.3	6.6	4.8	6.5	6.1	6.1	6.3	6.6	6.9	7.0	7.1	7.2	6.2	6.9
Current account balance³															
United States	-5.3	-5.0	-4.4												
Japan	4.8	4.4	4.4												
Euro area	0.2	0.1	0.0												
Total OECD	-1.4	-1.3	-1.1												
Cyclically-adjusted fiscal balance⁴															
United States	-3.2	-5.2	-4.4												
Japan	-2.6	-1.6	-2.5												
Euro area	-0.7	-1.0	-0.8												
Total OECD	-2.0	-2.8	-2.5												
Short-term interest rate															
United States	5.3	2.7	3.1	5.0	3.2	2.6	2.6	2.5	2.3	2.6	3.4	4.0			
Japan	0.7	0.8	0.7	0.8	0.8	0.9	0.9	0.8	0.7	0.7	0.8	0.8			
Euro area	4.3	4.5	4.1	4.7	4.5	4.5	4.5	4.4	4.2	4.1	4.1	4.1			

Note: Real GDP growth, inflation (measured by the increase in the consumer price index or private consumption deflator for total OECD) and world trade growth (the arithmetic average of world merchandise import and export volumes) are seasonally and working-day-adjusted annual rates. The "fourth quarter" columns are expressed in year-on-year growth rates where appropriate and in levels otherwise. Interest rates are for the United States: 3-month eurodollar deposit; Japan: 3-month certificate of deposits; euro area: 3-month interbank rate.

Assumptions underlying the projections include:

- no change in actual and announced fiscal policies;

- unchanged exchange rates as from 13 May 2008; in particular 1\$ = 104.44 yen and 0.64 ;

The cut-off date for other information used in the compilation of the projections is 23 May 2008.

1. USA; price index for personal consumption expenditure, Japan; consumer price index and the euro area; harmonised index of consumer prices.

2. Per cent of the labour force.

3. Per cent of GDP.

4. Per cent of potential GDP.

Source: OECD Economic Outlook 83 database.