II. From the emergency room to intensive care: the year in retrospect

Asset prices and economic activity have rebounded from the lows they reached during the financial crisis. The slide in financial market prices triggered by the bankruptcy of Lehman Brothers in September 2008 halted in March 2009, when prices of risky assets began rising, in some cases substantially. Global economic activity stabilised in the middle of that year and began to expand thereafter. The financial imbalances that lie behind the crisis have begun to correct. Banks have started to repair their balance sheets and reduce leverage, although the process is far from complete. Households in some of the countries most affected by the crisis have also started to reduce their indebtedness, but debt levels have fallen much less than after previous crises.

Recovery is thus under way, but it is fragile. The unprecedented policy actions taken over the last three years have been successful in preventing another Great Depression, but they are reaching their limits. Government deficits have soared to an extent that raises questions about the sustainability of public finances (see Chapter V). Indeed, public indebtedness has replaced private indebtedness as investors' main concern, as indicated by the turbulence in financial markets in the second quarter of 2010. In response, several countries have announced measures to consolidate their budgets.

In this environment, monetary policy faces a dilemma. On the one hand, raising interest rates and shrinking bloated central bank balance sheets too early could undermine the recovery. Tightening too late, on the other hand, could delay the necessary adjustment process and result in a less stable financial system in the medium term (see Chapter III).

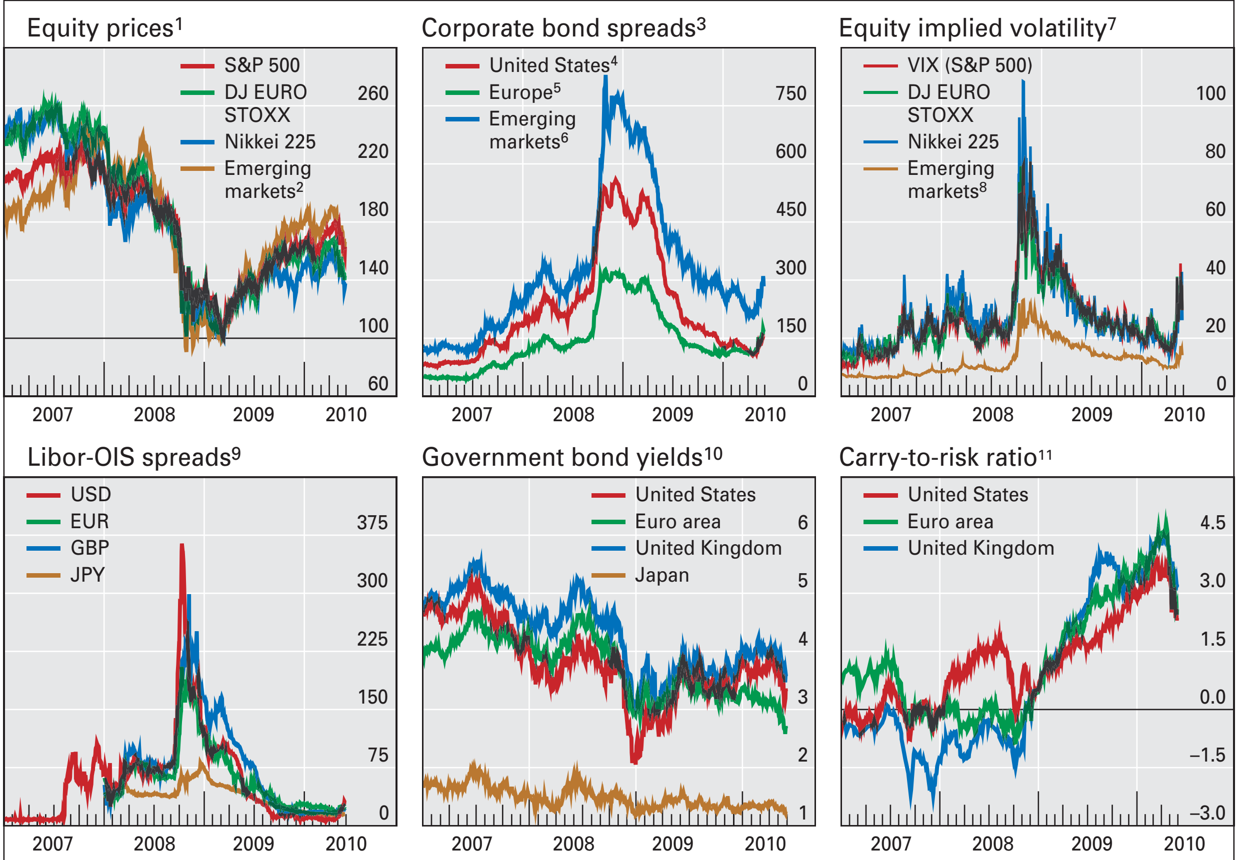
Recovery uncertain

Market rebound

Recovery led by financial markets

Recovery in financial markets preceded the upswing in economic activity in the major advanced economies. Key economic indicators remained at depressed levels in the first quarter of 2009, but investors focused on incipient signs that economic conditions might stabilise sooner rather than later. Between March 2009 and April 2010, equity prices around the world gained strongly, although they remained below their pre-crisis peaks (Graph II.1). Credit spreads narrowed to a level roughly in line with their long-term average, implied volatilities fell to their lowest levels since the middle of 2007, and government bond yields, particularly in the United States, rose from the lows reached in late 2008. As tensions in money markets eased and banks became more willing to lend to each other, the spread of Libor above the overnight index swap (OIS) rate dropped sharply from its late 2008 peak.

Asset prices



[1] 3 March 2009 = 100. [2] Average of Asian, European and Latin American emerging market equity indices. [3] Investment grade indices, in basis points. [4] JPMorgan US Liquid Index (JULI). [5] Morgan Aggregate Index Europe (MAGGIE). [6] Corporate Emerging Markets Bond Index (CEMBI). [7] Volatility implied by the price of at-the-money call option contracts on stock market indices, in per cent. [8] JPMorgan Emerging Market Volatility Index. [9] Three-month rates, in basis points. [10] Ten-year government bond yields, in per cent. [11] Defined as the differential between 10-year swap rates and the three-month money market rate divided by the three-month/10-year swaption implied volatility.

Sources: Bloomberg; Datastream; JPMorgan Chase; BIS calculations. Graph II.1

Many, but not all, of the markets that had seized up during the crisis started to function again. In late 2008, government guarantees had prompted financial institutions to issue bonds, and non-guaranteed issuance followed in 2009. Non-financial corporations placed more bonds in the first half of 2009 than in the six months immediately preceding the crisis, although these gains may have partly reflected the dearth of bank financing. Indeed, bank lending to the private sector in the major advanced economies either stagnated or contracted, and the market for securitised products continued to be weak. In the United States for example, where the bulk of mortgages are securitised, issuance of mortgage-backed securities (MBS) that are not backed by the government remains at depressed levels.

Fears of sovereign risk threaten to derail financial recovery

The financial recovery during much of 2009 and early 2010 has been impressive, but it is under threat. Concerns about the sustainability of public finances and bank health triggered bouts of volatility in late 2009 and again in early 2010. However, these were minor compared with the sell-off that took place in April and May 2010, when risky asset prices fell sharply on investor worries about the ability of Greece and, to a lesser extent, Portugal and Spain to service their debts. Policymakers responded with the largest rescue package in history and a new set of central bank emergency measures. These measures succeeded in halting contagion in the euro area, but were not able to restore investor confidence more broadly.

Uneven economic recovery

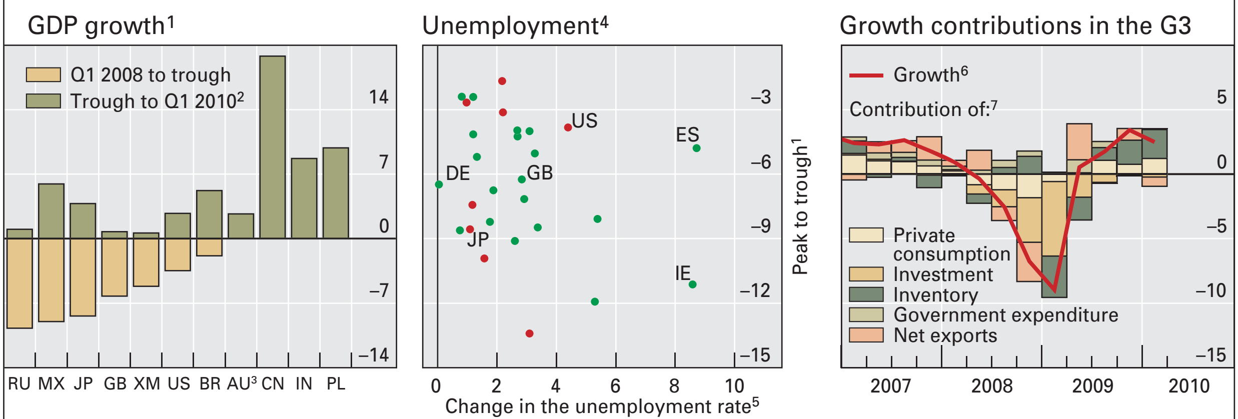
Multi-speed economic recovery

The decline in global economic activity began to slow in the second quarter of 2009 and gave way to growth towards the middle of the year. The size of both the contraction and the expansion varied greatly across countries (Graph II.2, left-hand panel). China, India and Poland avoided a contraction altogether – output growth merely slowed and then soon returned to pre-crisis rates. In Australia and Brazil, output contracted briefly but then grew fast to quickly surpass pre-crisis levels. In contrast, by the first quarter of 2010, output in the United States, the euro area, Japan and the United Kingdom remained below its pre-crisis level.

Unemployment rose sharply in countries with a construction boom …

The drop in economic activity resulted in a steep rise in unemployment in a number of countries, particularly those in which a construction boom had preceded the crisis. Unemployment shot up by more than 8 percentage points in Spain and Ireland and by almost 5 percentage points in the United States as oversize construction sectors shed workers (Graph II.2, centre panel). In Spain, the high share of temporary employment also contributed to the sensitivity of unemployment to changes in output.[1] Unemployment in the United States rose

Economic recovery



AU = Australia; BR = Brazil; CN = China; DE = Germany; ES = Spain; GB = United Kingdom; IE = Ireland; IN = India; JP = Japan; MX = Mexico; PL = Poland; RU = Russia; US = United States; XM = euro area.

[1] Changes in real GDP, in per cent. [2] For Australia, Brazil, India, Poland and Russia, to Q4 2009. [3] Output contracted in Q4 2008 but remained above its Q1 2008 level. [4] The red dots denote non-European countries; the green dots, European countries. [5] Between the latest available unemployment rate and the unemployment rate in the period corresponding to peak GDP, in percentage points. [6] Quarterly changes in real GDP, seasonally adjusted at annual rates, in per cent. Weighted average based on 2005 GDP and PPP exchange rates of the United States, the euro area and Japan. [7] In percentage points.

Sources: OECD; Bloomberg; Datastream; national data. Graph II.2

[1] See IMF, *World Economic Outlook*, April 2010, Chapter 3; and Bank of Spain, *Boletín Económico*, February 2010, pp 32–43.

to its highest level since the 1930s, even though GDP contracted less than in most other advanced economies.

... but less so elsewhere

The employment consequences in most of the other advanced economies were less severe. Job losses were particularly limited in some continental European economies and in Japan. For example, unemployment in Germany increased by just over 1 percentage point, despite a relatively large (6.5%) drop in GDP. Helping to limit the job losses were measures that allow reductions in hours by individual workers without laying them off. In Japan, a combination of the Employment Adjustment Subsidy Programme and a decline in hourly wages reduced incentives to lay off workers. Unemployment rose by less than 2 percentage points, despite a fall in GDP of more than 8%.

Fragile recovery in major advanced economies ...

The recovery in the large advanced economies is still far from self-sustained. In the G3, inventory rebuilding accounted for most of the 2.5% annualised rate of growth in the first quarter of 2010 (Graph II.2, right-hand panel). Private investment remained in negative territory for the eighth quarter in a row, thus continuing to be a drag on economic growth. That said, few of the adverse growth scenarios identified by forecasters during the period under review have materialised.

... but signs of overheating in large EMEs

A completely different picture has arisen in a number of emerging market economies (EMEs). Expansionary policies at home, combined with the impact of loose monetary and fiscal policies in the large advanced economies, have resulted in signs of overheating in some cases (see Chapter IV). Wholesale price inflation in India approached 10% in early 2010, and inflationary pressures are also appearing in other EMEs.

Rapidly growing fiscal deficits raise sovereign risk concerns

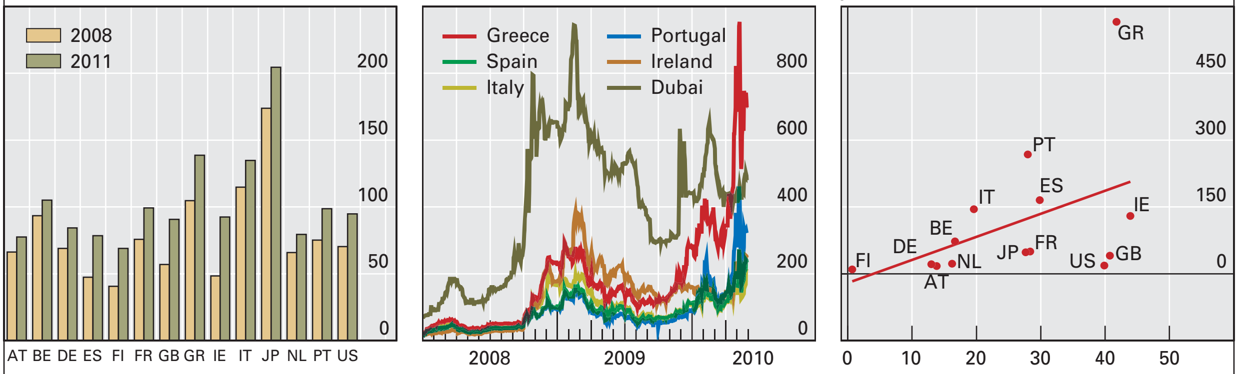
Build-up of government debt fuelled concerns about sovereign risk ...

The combination of large-scale fiscal stimulus plans, financial rescue packages and falling tax revenues has led to historically large government budget deficits and record levels of actual and projected public debt in most industrial countries (Graph II.3, left-hand panel). These burdens come at a time when governments in advanced economies are already facing the rapid growth of unfunded implicit obligations related to their ageing populations. That confluence of factors has raised serious concerns about the sustainability of fiscal policy in the industrial world (see Chapter V), thus heightening worries about sovereign risk. As a consequence, bond yields and credit default swap (CDS) spreads on the government debt of several countries rose significantly during the past year (Graph II.3, centre panel), prompting unprecedented policy responses on several fronts.

Sovereign risk concerns first arose following the large financial rescue packages and substantial fiscal stimulus programmes announced in late 2008 and early 2009. Those worries then remained relatively subdued for much of 2009, overshadowed by concerns about the slowdown in global economic activity and the associated rise in unemployment. Sovereign risk first came to the fore in November 2009, when sovereign CDS spreads on Dubai rose sharply after Dubai World, one of the country's three strategic investment vehicles, unexpectedly announced that it was seeking a moratorium on its debt payments.

Government debt, deficits and sovereign credit premia

Government debt[1] | Sovereign CDS spreads[2] | Deficits vs changes in CDS premia[3]



AT = Austria; BE = Belgium; DE = Germany; ES = Spain; FI = Finland; FR = France; GB = United Kingdom; GR = Greece; IE = Ireland; IT = Italy; JP = Japan; NL = Netherlands; PT = Portugal; US = United States.

[1] As a percentage of GDP; for 2011, projections. [2] In basis points. [3] The horizontal axis shows cumulative government deficits as a percentage of GDP for 2007–11 (for 2010–11, projections); the vertical axis represents the change in CDS premia between 26 October 2009 and 27 May 2010, in basis points.

Sources: OECD; Markit; national data. Graph II.3

... particularly in some euro area economies

In late 2009, the spotlight shifted to the euro area, where large budget deficits in several countries led to the prospect of rapidly increasing government debt/GDP ratios. Worries centred on the fiscal situation in Greece, but also extended to other countries facing a toxic combination of high fiscal deficits and lack of competitiveness, such as Portugal and Spain. Greek sovereign bond yields and CDS spreads started to drift upwards in December 2009 and then exploded at the end of April 2010, when Standard & Poor's downgraded Greek debt to "junk" status. Within the same week, the agency went on to lower its ratings of Portugal and Spain, triggering sharp increases in their CDS spreads as well. In early May, euro area member countries and the IMF undertook to provide a joint €110 billion emergency loan package for Greece after its government pledged to implement severe austerity measures. Within days of the announcement, however, it became clear that this was not sufficient to calm investors' nerves. In response to soaring bond and CDS spreads, EU and IMF policymakers announced a €750 billion joint fiscal stabilisation package. In the wake of this announcement, sovereign bond and CDS spreads declined substantially from the highs they had reached during the previous week.

Governments that pre-emptively announced consolidation measures were more immune to market pressures. Overall, the magnitudes of the changes in sovereign CDS spreads in the euro area were positively, albeit not perfectly, correlated with the budget deficits of the respective governments (Graph II.3, right-hand panel). But in the case of Ireland, government debt spreads remained relatively stable during 2009 and early 2010, although the country's budget deficit for the 2007–11 period is projected to be higher than those of Portugal and Spain and close to that of Greece.[2] The stability of the spreads

[2] Sovereign CDS spreads for Japan, the United Kingdom and the United States also increased much less than those for the highly indebted euro area countries, despite their comparable fiscal positions.

most likely reflected a combination of credible austerity measures announced pre-emptively by Ireland's government in March 2009 and a more favourable outlook for economic growth.

The importance of timely fiscal consolidation was underscored in May, when the austerity measures announced by the governments of Greece, Portugal and Spain met with a lukewarm response in financial markets. Bond and CDS spreads declined on the announcement of the fiscal tightening packages, but by less than they did in reaction to the €750 billion joint EU-IMF fiscal stabilisation package. Investors apparently regarded the austerity measures, which included public sector wage cuts, tax hikes and increases in the retirement age, as merely the initial steps on a long but inevitable journey of fiscal consolidation. And they continue to harbour serious questions about the ability and resolve of governments to carry out these austerity measures.

Spillovers to the banking sector

Worries about sovereign risk quickly spilled over into the banking sector. Not surprisingly, they had the greatest impact on equity prices and credit spreads for banks headquartered in the countries whose perceived creditworthiness had deteriorated the most (Greece, Portugal and Spain). Nevertheless, other euro area banks were also significantly affected because of their higher relative exposures to the public sectors of these countries. At the end of 2009, five euro area banking systems (those of Belgium, France, Germany, Italy and the Netherlands) held roughly 17% of all outstanding Greek government debt, equivalent to some 6.5% of these banking systems' combined Tier 1 capital. Similarly, their exposures to the public sectors of Spain and Portugal stood at 8.9% and 4.1% of their Tier 1 capital, respectively.[3]

Monetary policy still highly stimulative

Highly expansionary monetary policy

Monetary policy remains highly expansionary almost everywhere, although central banks in some of the faster-growing countries have started to withdraw the stimulus put in place during the crisis. Policy rates in the larger advanced economies remain at record lows, and central bank balance sheets have barely shrunk from the bloated levels reached during the crisis (Graph II.4). Short-term interest rates close to zero are holding down the cost of funding and propping up the net present value of future payment streams. In addition, central bank asset purchases have pushed up asset prices directly and indirectly.

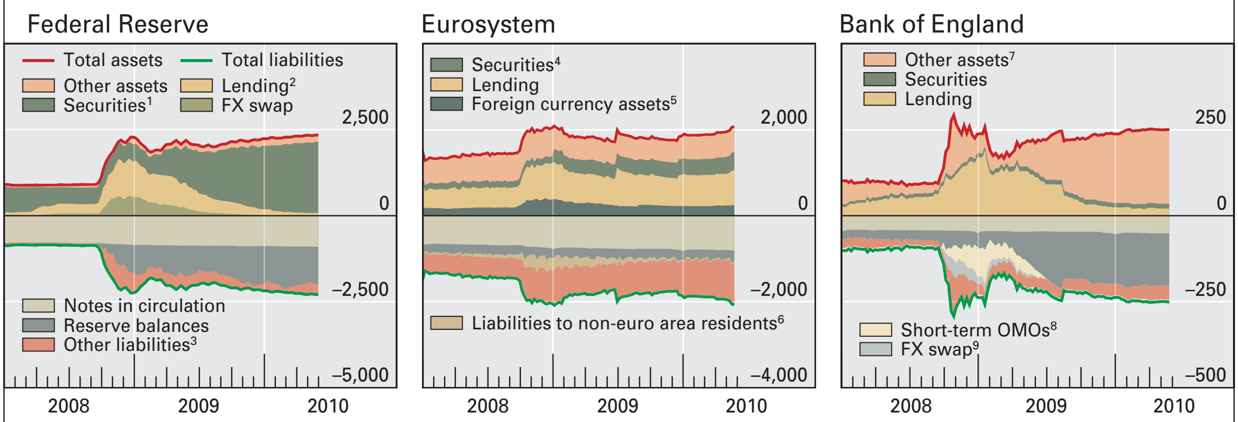
Tightening in some faster-growing countries …

The unevenness of the economic recovery left its imprint on central bank policy. In late 2008 and early 2009, the key challenge for central banks worldwide had been to prevent the complete collapse of the financial system and to limit the contraction in economic activity. As the recovery progressed, the challenges started to diverge across regions. The central banks of Australia, Brazil, India, Israel, Malaysia and Norway all increased policy rates

[3] Numbers based on BIS consolidated banking statistics on an ultimate risk basis and OECD government debt statistics.

Central bank assets and liabilities

In billions of respective currency units



[1] Securities held outright, including Term Securities Lending Facility (TSLF). [2] Repurchase agreements, term auction credit, other loans and Commercial Paper Funding Facility (CPFF). [3] Including to central banks. [4] Securities of euro area residents and general government debt, in euros. [5] Including US dollar liquidity auctions. [6] In euros. [7] Including US dollar liquidity auctions and asset purchase facility. [8] Open market operations, including issuance of Bank of England sterling bills. [9] Swap lines with the Federal Reserve.

Sources: Datastream; national data. Graph II.4

as the threat of a severe contraction receded and inflationary pressures emerged, although rates remain low by historical standards. The Reserve Bank of India also raised reserve requirements for its banks. A similar step was taken by the People's Bank of China to rein in rapid credit growth.

… but rates maintained near zero in the major advanced economies

By contrast, the Federal Reserve, ECB, Bank of Japan and Bank of England all kept policy rates at the lows reached during the crisis. Exit from the extraordinary policy measures of the past couple of years had been under way until May 2010, when the turbulence in euro area government bond markets led to a number of new measures as well as the reinstatement of some previous ones. By this time, the Bank of Japan and the Federal Reserve had terminated most of the liquidity facilities that were introduced during the crisis. The Federal Reserve's swap lines with other central banks formally expired in February 2010, though some partner central banks had already discontinued some or all of their dollar auctions well before that. The Federal Reserve and the Bank of England had stopped buying securities under their massive asset purchase programmes, although they did not reduce the accumulated holdings.[4] The ECB had discontinued its special three-month, six-month and 12-month refinancing operations.

The deterioration of financial conditions, especially in the euro area, in April and May 2010 led to the introduction of yet another round of

[4] These holdings can have expansionary effects even though actual purchases have ended, since they influence the relative supply of securities and thus their relative price, given that assets are imperfect substitutes. To empirically identify the magnitude of this "portfolio balance effect" is difficult. Nevertheless, a recent study indicates that the portfolio balance effect was responsible for most of the significant decline in long-term yields on a wide range of securities that followed Federal Reserve asset purchases. See J Gagnon, M Raskin, J Remache and B Sack, "Large-scale asset purchases by the Federal Reserve: did they work?", Federal Reserve Bank of New York, *Staff Reports*, no 441, March 2010.

unconventional policy measures. As part of the giant rescue package approved on 10 May, the ECB announced that it would purchase securities issued by euro area member states in an effort to provide liquidity and support market functioning. It also reintroduced six-month tenders. The Federal Reserve brought back the swap lines with other central banks to address resurgent concerns about dollar funding shortages of non-US banks (see below).

The generally very expansionary stance of monetary policy will have to be tightened at some point, for a number of reasons. First, although output in the countries most affected by the crisis is still well below potential, the amount of slack could be smaller than suggested by conventional measures of the output gap. The build-up of imbalances in the run-up to the crisis suggests that potential output growth during that period may not have been as high as believed at the time. Moreover, the financial disruptions caused by the crisis and the lost skills of the long-term unemployed could reduce potential output for some time to come. Inflationary pressures could therefore reappear earlier than anticipated. Second, low interest rates cause distortions that could have unpleasant side effects (see Chapter III). That said, the consolidation of public finances in a number of countries implies less fiscal stimulus, which in turn will affect monetary policy.

Fragile banks

Following a devastating 2008, balance sheets improved at many of the major US and European banks. After capital injections pulled the banking system back from the brink, rising asset prices and a steepening yield curve helped banks return to profitability in 2009 (Table II.1). As investors' fears of imminent

Profitability of major banks[1]

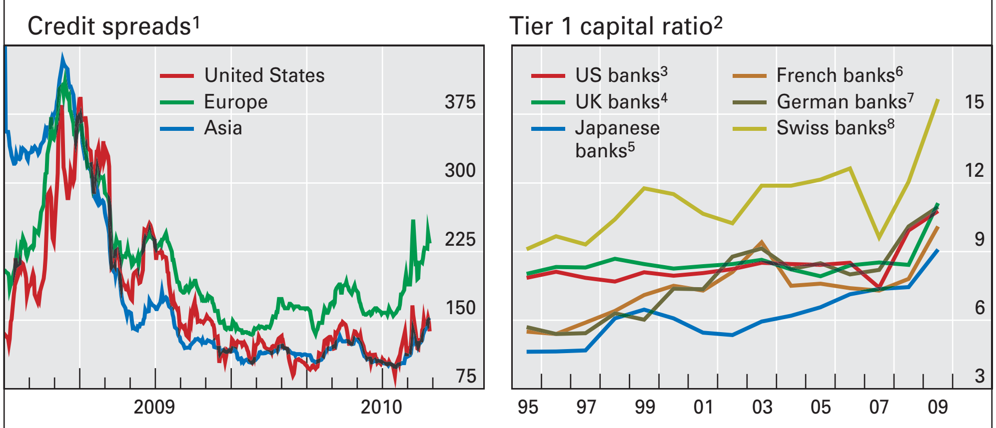
As a percentage of total assets

	Pre-tax profits			Net interest margin			Net gains from trading			Net fee income		
	2007	2008	2009[2]	2007	2008	2009[2]	2007	2008	2009[2]	2007	2008	2009[2]
Australia (4)	1.40	0.99	0.93	1.68	1.64	1.87	0.12	0.07	0.11	0.50	0.48	0.47
Austria (3)	1.12	0.46	0.63	1.95	2.44	2.46	0.17	–0.08	0.34	1.01	1.00	0.92
Canada (5)	1.08	0.45	0.68	1.43	1.38	1.69	…	–0.31	0.13	1.09	0.81	0.93
France (6)	0.41	0.04	0.18	0.49	0.68	1.05	0.56	–0.24	0.25	0.47	0.39	0.44
Germany (7)	0.26	–0.45	–0.03	0.52	0.62	0.78	0.05	–1.01	0.19	0.43	0.34	0.38
Italy (5)	0.88	0.27	0.37	1.73	2.02	1.92	0.09	–0.26	0.11	0.95	0.85	0.82
Japan (13)	0.59	–0.16	0.28	0.95	0.93	0.96	0.23	0.04	0.12	0.41	0.36	0.34
Netherlands (5)	0.16	–0.57	–0.08	0.68	0.97	1.24	0.15	–0.61	0.01	0.34	0.30	0.35
Spain (5)	1.44	1.07	0.93	1.72	1.85	2.27	0.15	0.19	0.12	0.82	0.74	0.73
Sweden (4)	0.89	0.67	0.34	0.97	0.99	1.02	0.16	0.15	0.27	0.58	0.44	0.41
Switzerland (6)	0.38	–1.75	0.21	0.53	0.61	0.56	0.28	–0.68	0.58	1.01	0.93	0.92
United Kingdom (8)	0.76	–0.05	–0.05	1.02	0.87	0.94	0.49	–0.07	0.51	0.58	0.40	0.47
United States (8)	0.96	0.28	0.41	2.23	2.30	2.70	0.05	0.02	0.27	…	…	0.68

[1] The number of banks in the 2009 sample is indicated in parentheses. [2] Latest available data.

Source: Bankscope. Table II.1

Indicators of bank health



[1] Equally weighted average senior five-year CDS spreads for the banking sector, in basis points. [2] Tier 1 capital as a percentage of risk-weighted assets, weighted by asset size. [3] Bank of America, Citigroup, JPMorgan Chase, Wachovia Corporation (to Q3 2008) and Wells Fargo & Company. [4] Barclays, HSBC and Lloyds TSB. [5] Mitsubishi UFJ Financial Group, Mizuho Financial Group and Sumitomo Mitsui Financial Group. [6] BNP Paribas. [7] Commerzbank and Deutsche Bank. [8] Credit Suisse and UBS.

Sources: Bloomberg; JPMorgan Chase. Graph II.5

collapse abated throughout the year, banks' CDS spreads and bond spreads narrowed considerably (Graph II.5, left-hand panel).

New capital drove up Tier 1 capital ratios

Overall, the new capital injected into banks, much of it from governments, has almost matched banks' revealed losses during the crisis. Total revealed losses and writedowns reached $1,306 billion by mid-April 2010, compared with $1,236 billion in new capital raised by banks.[5] At the end of 2009, the new capital acquired by US and European banks – combined with slower credit growth and their shift into safer government securities and liquid assets – helped push their Tier 1 capital ratios to the highest levels in 15 years (Graph II.5, right-hand panel).

Bank profitability may prove unsustainable …

Despite the improvement in banks' balance sheets, several factors raise doubts about the sustainability of bank profits. First, for many European and US banks, profits in 2009 were based heavily on revenues from trading in fixed income and currency markets, which tend to be volatile (Table II.1). Loan-to-deposit ratios for many large international banks fell in 2009. And aggregate data for the United States, the euro area and Japan show that credit extended to the private sector (Graph II.7, left-hand panel) shrank in 2009, following its slowdown in mid-2008 as banks tightened lending standards.

… if the yield curve flattens …

Second, low volatility and the steep yield curve, particularly at the short end, provided incentives for banks to take on duration risk. Carry-to-risk ratios for such strategies increased substantially until April 2010 (Graph II.1, bottom right-hand panel). Amid stagnant corporate and residential lending, banks were able to generate profits simply by channelling funds into longer-dated default-free securities. As a consequence, they became exposed to the risk that a

[5] By mid-April 2010, North American banks had raised $518 billion in new capital, amounting to 72% of their recorded losses. European banks had raised $341 billion, roughly the same amount as their revealed losses. The capital raised by Asian banks totalled more than three times their $34 billion in revealed losses.

flattening of the yield curve could raise their funding costs or result in mark to market losses on their assets side.

… and asset writedowns continue

Third, it is not clear whether all crisis-related losses have been recognised. For example, less stringent and less timely reporting requirements for banks in Europe have made it more difficult to ascertain the extent of future writedowns by these institutions. In addition, there is growing evidence that further losses can be expected from exposure to the commercial real estate sector. Commercial property values in the United States are down by more than one third from their peak, and the delinquency rate on commercial real estate loans has risen to more than 8%, double the rate at end-2008 and more than four times the rate at end-2006. Commercial property markets in many European countries have not fared much better. In Ireland and the United Kingdom, in particular, commercial property prices have fallen by 39% and 46% respectively since their peak, and losses on European bank balance sheets are expected to mount over the next few years. Anecdotal evidence suggests that some banks have taken to rolling over existing loans rather than inducing foreclosure, thus delaying loss recognition.

Sovereign risk in advanced economies as well as EMEs

Fourth, banks are highly exposed to sovereign risk, as was highlighted by the sharp drop in the equity prices of banks with particularly high holdings of Greek, Portuguese and Spanish government debt in the second quarter of 2010. The risk of such exposures had been long recognised in the case of banks in EMEs but had been ignored in the advanced economies.

Short-term liabilities are raising funding needs

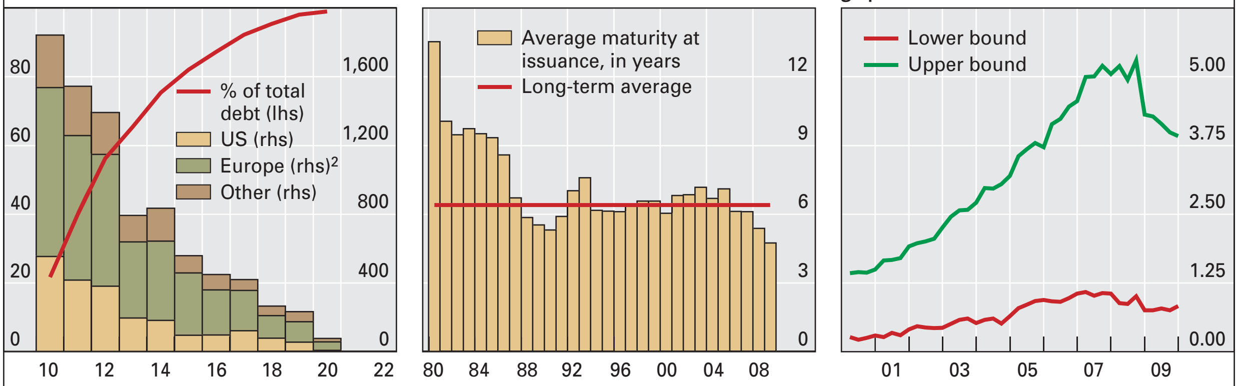
Fifth, banks may find it difficult to refinance given the expected demand for funds by governments with significant borrowing needs. Funding maturities have shortened to the lowest in 30 years (Graph II.6, centre panel), which raises refinancing needs. Moreover, some 60% of banks' long-term debt flows come due over the next three years (Graph II.6, left-hand panel). Indeed, widening Libor-OIS spreads after April 2010 (Graph II.1, bottom left-hand panel) provide evidence that unsecured wholesale funding has become more expensive. That said, these spreads are still tiny compared with their levels at the height of the crisis in late 2008.

Dollar funding difficulties have resurfaced

Finally, many banks in Europe and elsewhere still rely heavily on the foreign exchange swap market to finance US dollar assets. Overall, European banks still have an estimated $7 trillion in dollar-denominated assets on their balance sheets, which tend to have long maturities. And those European banking systems which had long dollar positions going into the crisis (German-, Dutch-, Swiss- and UK-headquartered banks) still have substantial funding needs. Lower bound estimates of their required short-term US dollar funding stood at just over $500 billion at end-2009 (Graph II.6, right-hand panel). With heightened credit risk concerns surrounding these banks' exposures to Greek and other European sovereign debt, providers of short-term funds have once again become reluctant to extend dollar funding. On 9 May 2010, as part of a comprehensive policy package to address the growing risk of contagion among euro area sovereigns and financial institutions, the Federal Reserve and other major central banks re-established temporary foreign exchange swap facilities to alleviate the growing strains.

Banks' funding pressures

Bank debt, by residual maturity[1] | Average debt maturities | European banks' dollar funding gap[3]



[1] Syndicated debt securities placed in domestic and international markets with original maturity above one year, in billions of US dollars; excluding preferred shares and convertible bonds. [2] The euro area, Switzerland and the United Kingdom. [3] Estimates of short-term funding needs of internationally active banks headquartered in Germany, the Netherlands, Switzerland and the United Kingdom, in trillions of US dollars. For the construction of the measures, see I Fender and P McGuire, "European banks' US dollar funding pressures", *BIS Quarterly Review*, June 2010.

Sources: Dealogic; Moody's; BIS consolidated banking statistics (immediate borrower and ultimate risk basis); BIS locational banking statistics by nationality. Graph II.6

Household debt levels: where do we stand?

Before the crisis, household debt had increased substantially in a number of advanced economies.[6] The historical record suggests that financial crises associated with credit booms have often been followed by a long period of debt reduction in the private sector as firms and households repair their balance sheets. Indeed, in most of the 24 systemic banking crises analysed in the box on the following page, the ratio of private sector credit to GDP fell substantially for several years after the crisis, reversing most of the increase which had occurred during the preceding credit boom.[7] That record suggests that household debt ratios, which increased rapidly in many countries in the run-up to the current crisis, will have to adjust further.

Credit to the private sector has decelerated

The private debt reduction process has already begun. Credit to the private sector in the major advanced economies (except Japan) had expanded strongly in the years before the crisis but contracted markedly in 2009 and early 2010 as banks tightened lending standards (Graph II.7).[8]

Household debt ratios have started to decline …

Households in the countries that experienced real estate-related credit booms have started to reduce their debt levels. By the end of 2009, the ratio of household debt to disposable income in the United States and Spain had declined by 7 percentage points from its respective peaks in 2007 and 2008

[6] See BIS, *79th Annual Report*, June 2009, pp 4–7.

[7] The analysis of the historical episodes looks at credit to the private sector, since data on household debt are not available for most of the episodes.

[8] By contrast, credit continued to expand – or even accelerated – in many emerging market economies. For a discussion of the most extreme case, see E Chan and H Zhu, "Analysing bank lending data in China", *BIS Quarterly Review*, December 2009, pp 20–1.

Credit dynamics after crises: the historical record

Financial crises are often followed by protracted debt reduction. In a sample of 24 systemic banking crises,[①] 15 were followed by substantial declines in the ratio of credit to GDP. The average such peak-to-trough decline was 39 percentage points, or roughly 8 percentage points per year. The decline in the ratio was only slightly smaller than the preceding increase (48 percentage points on average). Perhaps surprisingly, the degree of debt reduction did not differ much across emerging market and advanced economies. After their banking crises of the early 1990s, the ratio of credit to GDP dropped 44 percentage points in Finland, 38 points in Norway and 35 points in Sweden, roughly in line with the sample average. In Japan, the private sector credit ratio fell 25 percentage points after peaking in the late 1990s. In most countries, the initial decline in debt ratios was driven primarily by a drop in real credit outstanding; in the later years of deleveraging, GDP growth was the main driver.

The economic costs of deleveraging are hard to discern at such an aggregate level. Output grew at an average annual rate of 2.4% during the post-crisis debt reduction phase, moderately below the average growth rate during the preceding credit boom. But output growth varied widely across countries during the post-crisis period: in Indonesia, Malaysia, Mexico and Thailand, for example, output slowed considerably; in other countries, growth accelerated.

① The sample is taken from S Cecchetti, M Kohler and C Upper, "Financial crises and economic activity", paper presented at the symposium on *Financial stability and economic policy* organised by the Federal Reserve Bank of Kansas City, Jackson Hole, Wyoming, 20–22 August 2009. Of the 40 crises analysed in the paper, six were dropped because of the poor quality of the credit data. Another 10 cases – the two that took place in periods of hyperinflation and the eight that occurred during transitions from socialism to a market economy – were discarded as being unlikely to offer any insights relevant to the current situation.

Private sector credit/GDP ratio[1]

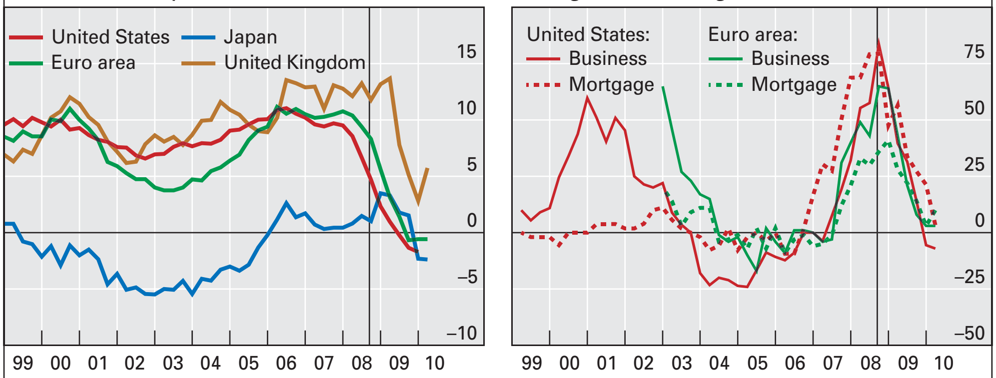
	Crisis date	Extreme credit/GDP ratio dates			Change in credit/GDP[2]		Annual real GDP growth	
		Previous trough	Peak	Next trough	Trough to peak	Peak to trough	Trough to peak	Peak to trough
Argentina	Dec 01	Sep 95	Jun 02	Sep 05	20	–30	2.3	1.1
Colombia	Jun 98	Mar 92	Dec 98	Mar 05	19	–24	3.8	2.4
Dominican Republic	Apr 03	Jun 95	Jun 03	Mar 07	29	–26	5.2	5.9
Finland	Sep 91	Mar 80	Mar 92	Mar 98	51	–44	2.0	2.6
Indonesia	Nov 97	Mar 93	Jun 98	Jun 02	83	–104	3.6	0.1
Japan	Nov 97	Dec 80	Jun 99	Dec 08	38	–25	1.8	0.4
Malaysia	Jul 97	Sep 93	Mar 98	Mar 01	75	–36	6.5	2.0
Mexico	Dec 94	Sep 88	Mar 95	Dec 96	27	–19	2.3	–0.5
Nicaragua[3]	Aug 00	Jun 96	Dec 00	Mar 02	19	–15	5.0	2.6
Norway	Oct 91	Mar 80	Jun 90	Dec 96	66	–38	2.7	3.7
Philippines	Jul 97	Jun 91	Dec 97	Mar 00	60	–18	3.1	3.0
Russia	Aug 98	Mar 96	Mar 99	Jun 01	32	–30	–0.6	6.9
Sweden	Sep 91	Sep 85	Sep 90	Mar 96	46	–35	2.5	1.2
Thailand	Jul 97	Dec 93	Dec 97	Jun 02	89	–79	6.2	0.8
Uruguay[3]	Jan 02	Mar 95	Sep 02	Mar 07	69	–64	0.5	4.1
Average					*48*	*–39*	*3.1*	*2.4*

[1] Credit as a percentage of nominal GDP. Credit equals the sum of IMF IFS domestic credit to the private sector and consolidated cross-border claims of BIS reporting banks on the non-bank private sector on an immediate borrower basis. [2] In percentage points of GDP. [3] Annual GDP data.

Sources: IMF, *International Financial Statistics*; Datastream; national data; BIS calculations. Table II.A

Credit growth and lending standards

Credit to the private non-financial sector[1] | Changes in lending standards[2]



The vertical line marks 15 September 2008, the date on which Lehman Brothers filed for Chapter 11 bankruptcy protection.

[1] Year-on-year growth, in per cent. [2] Net percentage of banks reporting tightening standards in surveys by national central banks.

Sources: Datastream; national data. Graph II.7

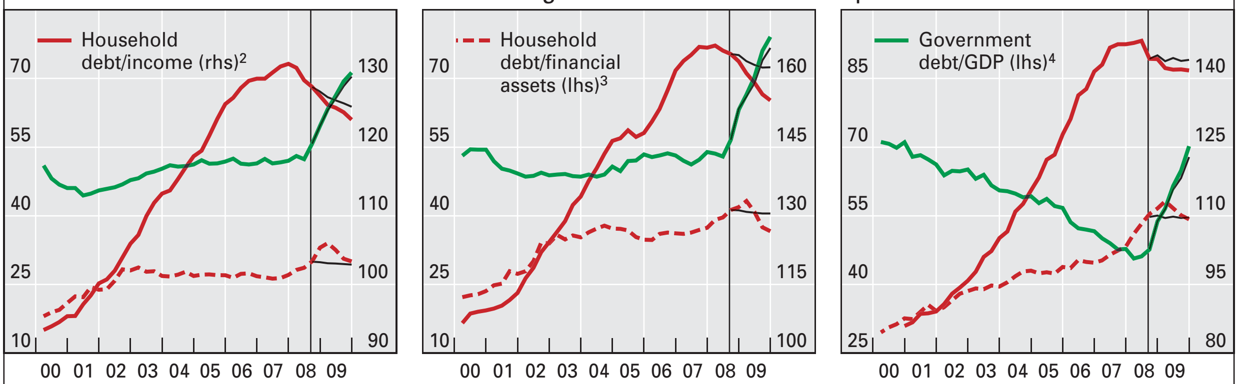
and by more than 10 percentage points in the United Kingdom (Graph II.8), although some of this decrease was due to the ongoing rise in household income. Household leverage, defined as the ratio of debt to financial assets, continued to increase during the crisis as asset prices plummeted.[9] In all three countries, this ratio peaked in early 2009 and is now at or below the levels recorded in late September 2008.

… but the historical record points towards further debt reduction

Regardless of the measure, household debt in all three countries remains well above the levels recorded in the middle of the decade, let alone those

Household and government debt[1]

United States | United Kingdom | Spain



The vertical line marks 15 September 2008, the date on which Lehman Brothers filed for Chapter 11 bankruptcy protection.

[1] The thin black lines show the data based on constant Q3 2008 denominators. [2] Households and non-profit organisations; as a percentage of household disposable income. [3] Households and non-profit organisations; as a percentage of household financial assets. [4] General government debt as a percentage of GDP.

Sources: Federal Reserve flow of funds accounts; national data. Graph II.8

[9] This is an imperfect measure, as it excludes real estate and the present value of human capital.

seen before the housing booms took off. The historical record thus suggests that substantial further debt reduction is still to come.

Summing up

Financial and economic recovery is under way, but it is both incomplete and fragile, at least in the major advanced economies. Monetary policy is still highly stimulative almost everywhere, despite first steps towards a more neutral policy stance in some economies. Fiscal policy remains expansionary, causing government debt levels to rise at an alarming pace. Banks have returned to profitability and reduced leverage, but several factors raise doubts about the sustainability of their profits and their ability to obtain funding. Private investment remains weak, and economic growth is still largely driven by inventory rebuilding. At the same time, a number of emerging market economies are facing quite the opposite problem: the direct impact of the crisis on output was smaller than feared, and the expansionary policies employed both domestically and abroad have boosted output growth to the point of overheating.

Tighter fiscal policy is on the horizon. The re-evaluation by market participants of the sustainability of public finances has already forced a number of euro area economies to introduce austerity measures, which are bound to have much more contractionary effects than a timely exit would have implied.

Monetary policymakers will have to take into account the effects of fiscal consolidation when deciding on when to normalise their policy stance. That said, in addition to the obvious risks of tightening too early there are also risks associated with tightening too late. Cutting interest rates to record lows was necessary to prevent the complete collapse of the financial system and the real economy, but keeping them low for too long could also delay the necessary adjustment to a more sustainable economic and financial model.