Policy measures and reduced short-term risks buoyed markets[1]

In the three months to early December, forecasters cut their projections for global economic growth, yet the prices of most growth-sensitive assets rose. These assets benefited from further loosening of monetary policies and perceptions that some major near-term downside risks to the world economy had diminished. In particular, asset valuations reacted positively to new policy measures aimed at tackling the euro area crisis. They were also supported by news suggesting that a sharp and prolonged fall in Chinese economic growth was less likely. However, downside risks remained. Uncertainty about fiscal policy in the United States, which was on course to tighten substantially in the near term, encouraged cash hoarding and weighed on the prices of assets most vulnerable to budget cuts.

Asset prices rose despite a weakening economic outlook

The prices of most risky assets increased between early September and early December. In the advanced economies, yields on both investment grade and sub-investment grade corporate bonds fell to their lowest levels since before the 2008 financial crisis. The same was true of yields on emerging market bonds, whether issued by sovereigns or corporates, or denominated in local or international currencies. And yields on bonds backed by mortgages and other collateral fell to their lowest levels ever. Meanwhile, equity prices mostly rose during the early part of the period, although they fell back somewhat later on.

Unusually, equity and fixed income gains coincided with a weakening of the global economic outlook. Forecasters cut their projections for 2012 and 2013 global economic growth. Without any significant offsetting upward revisions, they substantially reduced their forecasts for Greece, Italy and Spain in Europe, as well as for Brazil, China and India in the emerging world. In the past, falling growth forecasts have usually been associated with rising expected default rates and higher bond yields. But this time, bond yields fell (Graph 1). Similarly, most equity prices ended the period a little above their starting levels, despite weakening corporate

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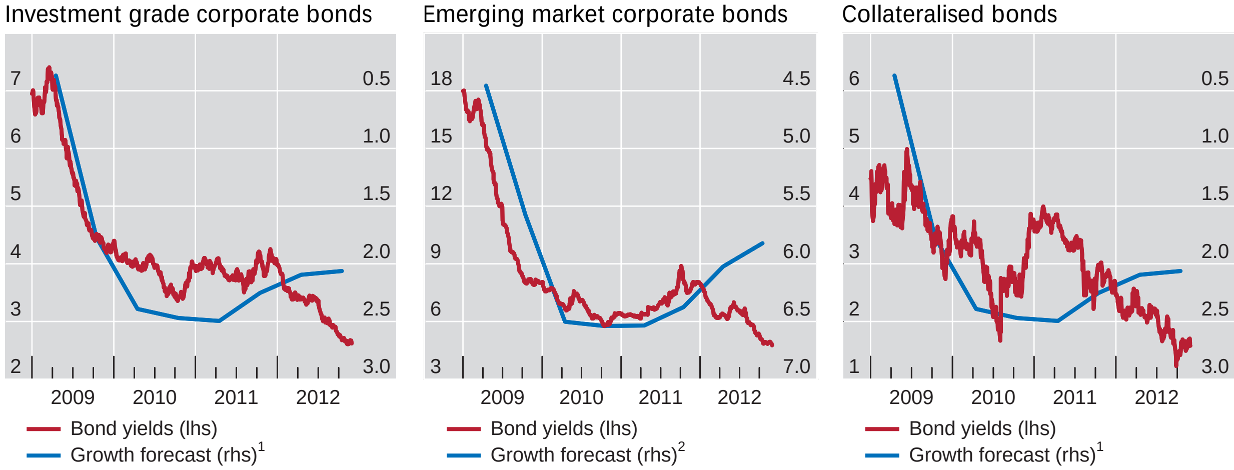
Bond yields and economic growth forecasts

In per cent | Graph 1



Bond yields are yields on Bank of America Merrill Lynch global bond indices. The collateralised index comprises bonds backed by residential mortgages, commercial mortgages, credit card receivables and other assets. Growth forecasts are approximate annualised three-year-ahead forecasts constructed from projections for the current and three subsequent calendar years.

[1] For advanced economies. [2] For emerging markets.

Sources: IMF, *World Economic Outlook*; Datastream; BIS calculations.

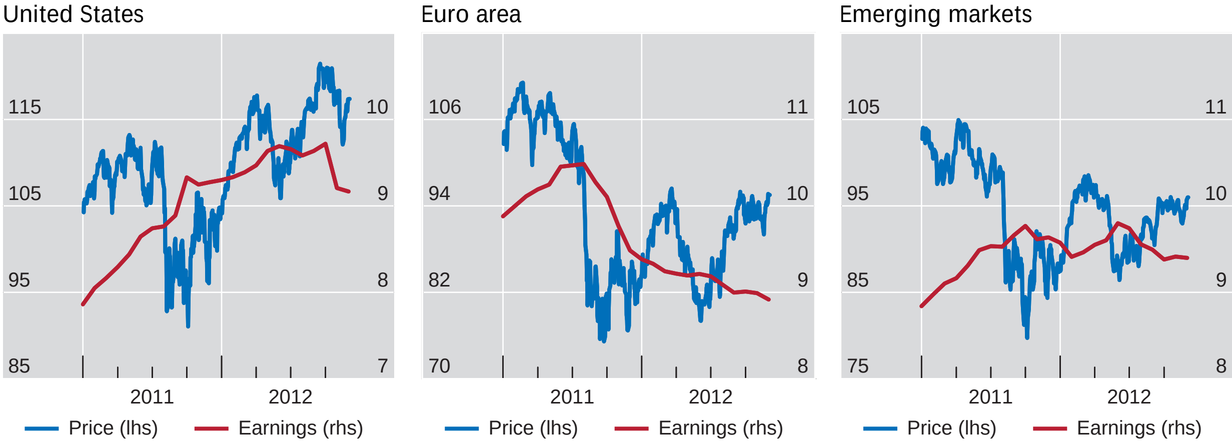
earnings expectations (Graph 2). Earnings expectations for US companies in the S&P 500 Index dropped particularly sharply following a decline in reported earnings – the first in 11 quarters – and as an unusually high proportion of firms warned that future profits could fall short of analysts' forecasts.

Looser monetary policies supported asset prices

Market participants attributed a significant part of the rally in asset prices to further loosening by central banks, notably the Federal Reserve. On 13 September, the Fed announced that it would immediately begin expanding its balance sheet through monthly purchases of $40 billion worth of mortgage-backed securities. In contrast to previous rounds of asset buying, US policymakers left the size of the programme open-ended, stating that it would continue until the labour market outlook had substantially improved. At the same time, the Fed pushed its forward guidance several months further into the future, saying that it expected to maintain its policy rate at exceptionally low levels until at least mid-2015, even if the US economic recovery had strengthened by then. The Bank of Japan also extended its asset purchasing programme, both in September and October, raising purchases of Japanese government securities and other assets planned before the end of 2013 by ¥21 trillion. Meanwhile, policy rates were cut in Australia, Brazil, Colombia, the Czech Republic, Hungary, Israel, Korea, the Philippines, Sweden and Thailand.

Equity prices and earnings[1]

Per share, as percentages of December 2010 prices Graph 2



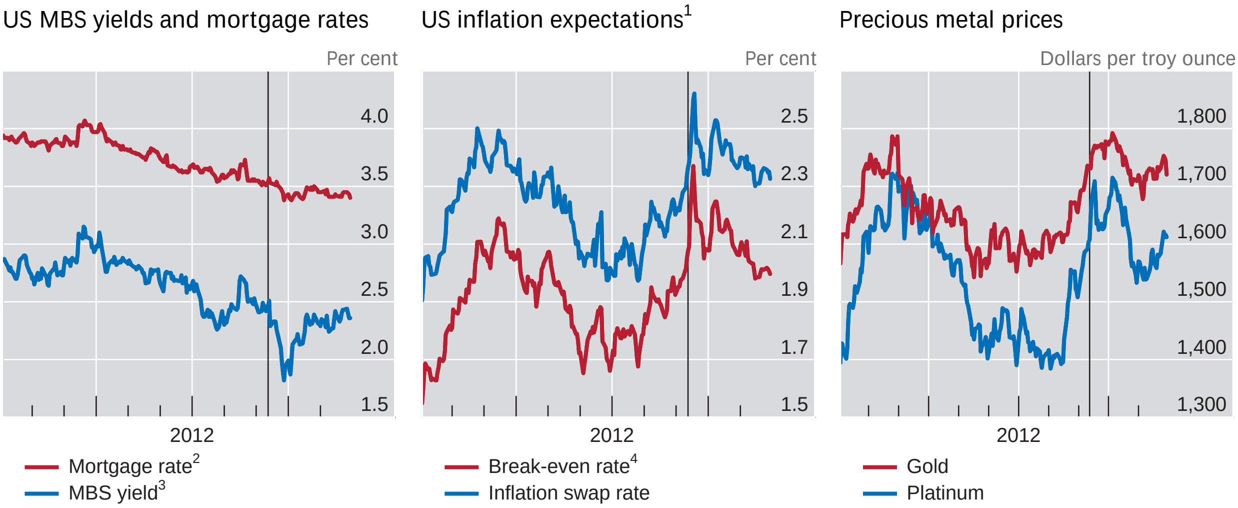
[1] Prices of equities in the respective Morgan Stanley Capital International indices and average 12-month-ahead forecasts of their earnings.

Source: Datastream.

The Fed's measures had significant, if short-lived, effects on US financial markets. Most directly, they compressed yields on mortgage-backed securities, which led to reductions in mortgage rates (Graph 3, left-hand panel). As the gap between these two metrics widened, US bank equity prices increased relative to the equity market as a whole. In addition, the Federal Reserve's new commitment to potentially unlimited balance sheet expansion boosted both market-based indicators of expected inflation and the prices of precious metals used as inflation

Reaction to news of third round of Federal Reserve asset purchases

Graph 3



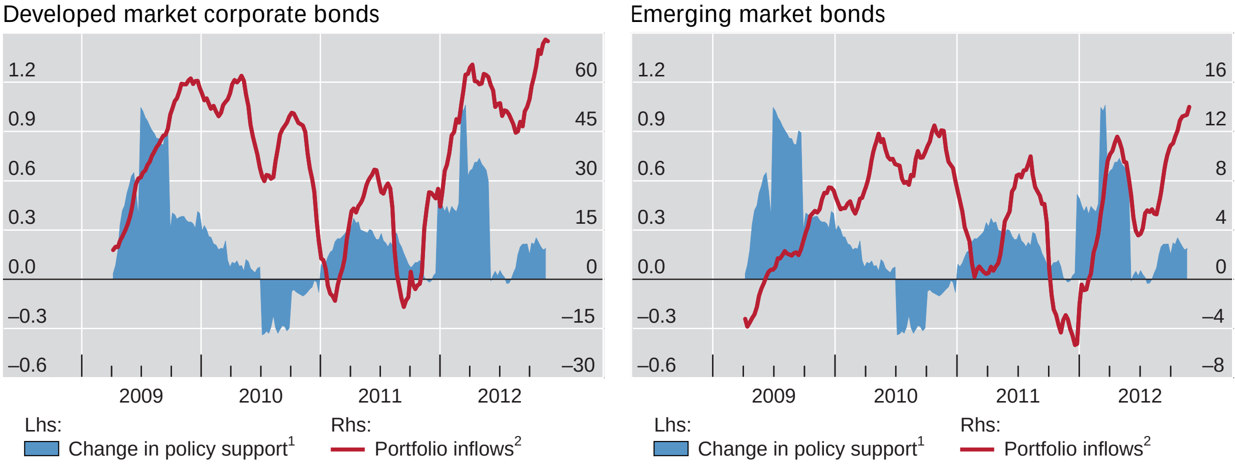
The vertical lines indicate 12 September 2012, the date of last closing prices before the news about Federal Reserve asset purchases.

[1] Over a five-year horizon. [2] Average rate on new 30-year fixed rate mortgages according to Bankrate.com. [3] Yield on Barclays Capital index of 30-year mortgage-backed securities (MBS) issued by the Federal National Mortgage Association. [4] Difference between yields on conventional and inflation-linked US Treasury bonds.

Sources: Bloomberg; Datastream.

Bond inflows and major central bank policies

In trillions of US dollars — Graph 4



[1] Change over three months in the sum of asset holdings purchased via reserve creation by the Bank of England, the Bank of Japan and the Federal Reserve, and via the ECB's outstanding longer-term refinancing operations. [2] Net flows over three months into managed bond funds.

Sources: ECB; Bank of Japan; Datastream; EPFR; BIS calculations.

hedges (Graph 3, centre and right-hand panels). With this rise in expected inflation, the US dollar depreciated slightly. Within a few weeks, however, both expected inflation and the value of the dollar returned to the levels seen before the 13 September announcement, possibly because incoming economic data suggested less monetary easing than originally expected.

More broadly, further quantitative stimulus by the major central banks appeared to nudge investors into taking on more risk. In particular, developed market corporate bond funds and emerging market government and corporate bond funds each attracted net inflows (Graph 4).

With investors' demand for risky assets increasing, bond issuers were able to place more debt than in previous months. This included the sale of some relatively risky types of bond. For example, non-financial corporate bond issuance rose to and remained near its year-to-date peak in September, October and November, with disproportionate increases in sub-investment grade issuance. Also during these three months, emerging market bond issuance outpaced that of the previous year, with placements of corporate bonds rising by more than those of government bonds. And, over the same period, European subordinated bond issuance was distinctly stronger than earlier in the year, not only for financial borrowers, who brought forward some planned 2013 issuance owing to forthcoming regulatory changes, but also for non-financial borrowers.

Policy easing by major central banks did not lead to emerging market currency appreciation

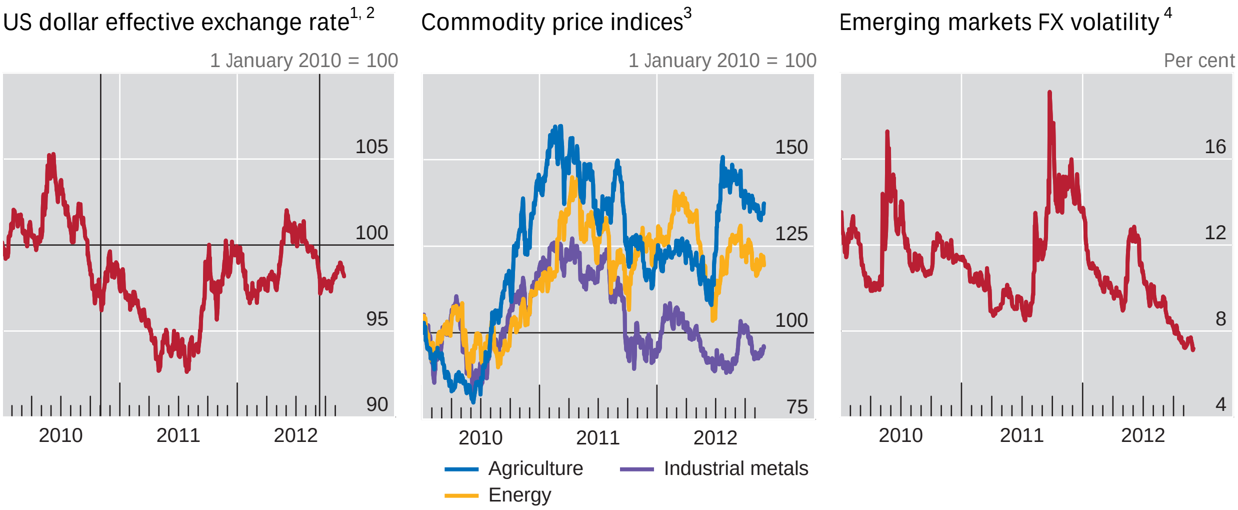
Easier monetary policies in advanced economies raised expectations that capital would flow into emerging market economies, causing their currencies to appreciate. When this happened in November 2010 and June 2011, the US dollar fell by more than 5%. Yet this time the US dollar appreciated in the three months from the beginning of September, both against a number of individual emerging market currencies and on a trade-weighted basis (Graph 5, left-hand panel).

Softer growth prospects in emerging markets partly explain why their currencies and capital flows reacted differently to monetary easing in advanced economies. They also put downward pressure on commodity prices (Graph 5, centre panel).

Several emerging market economies used policy measures in an attempt to stop their currencies from appreciating during the period. The Brazilian central bank intervened in foreign exchange markets, and currency traders gained the impression that other central banks in Latin America and East Asia were also in action. In addition, the Czech central bank said that it might consider intervention, depending on how its currency moved. In Korea, the authorities launched an investigation into compliance with restrictions on banks' foreign exchange positions that would gain from an appreciation of the local currency. Moreover, they tightened limits on banks' exposure to currency derivatives. All these measures were generally associated with more stable currency values, as evidenced by option implied volatilities (Graph 5, right-hand panel).

Exchange rates and commodity prices

Graph 5



[1] Geometric weighted average of 60 bilateral nominal exchange rates, with weights based on trade in 2008–10. [2] The vertical lines indicate the start of the Federal Reserve's second (3 November 2010) and third (13 September 2012) rounds of asset purchases. [3] S&P Goldman Sachs commodity indices. [4] Index of three-month at-the-money option implied volatilities, weighted by market turnover.

Sources: Bloomberg; Datastream; JP Morgan Chase.

Asset prices were also supported by a reduction in some major downside risks

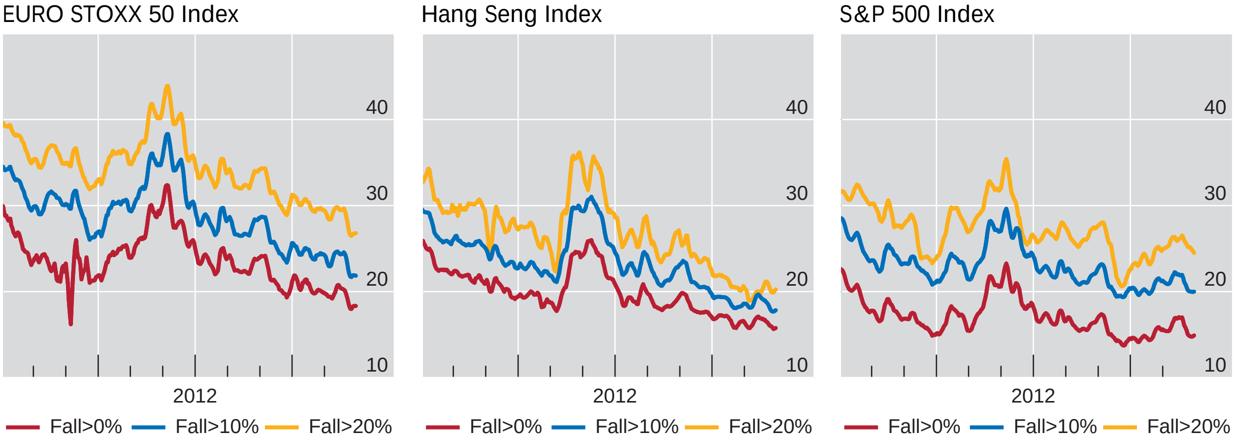
Asset prices also received support during the period from a perceived reduction in some major downside risks to the world economy. In particular, the prospect of a near-term worsening of the euro area crisis appeared to decline following new policy announcements. Also, the risk of a sharp and prolonged fall in Chinese growth seemed to recede after better than expected October economic data were released. However, the risk of an abrupt tightening of US fiscal policy from the beginning of 2013 lingered and even increased, according to some commentators, after federal elections again delivered a balance of political power vulnerable to stalemates.

Changes in the prices of options insuring against sharp declines in equity prices supported the perceived evolution of these risks (Graph 6). The cost of insuring against falls of 20% or more in the EURO STOXX 50 Index, a proxy for a sharp economic crisis in the euro area, fell in the three months from the beginning of September, although the price of protection against smaller price declines dropped by a similar amount. The cost of insurance against large falls in the Hang Seng Index, which might occur if Chinese economic growth were to slow sharply, also declined. The price of protection against smaller price drops fell by a lesser amount. By contrast, there was some increase in the cost of insuring against a fall of 20% or more in the S&P 500 Index, which might accompany an abrupt tightening of US fiscal policy. This rise slightly outpaced the cost of insuring against smaller price declines.

In the euro area, the ECB's plans to buy government bonds substantially boosted debt markets and underpinned financial markets more broadly. After ECB President Mario Draghi had alluded to these moves in a speech in London on

Cost of insurance against falls in equity price indices[1]

Implied volatilities, in per cent — Graph 6

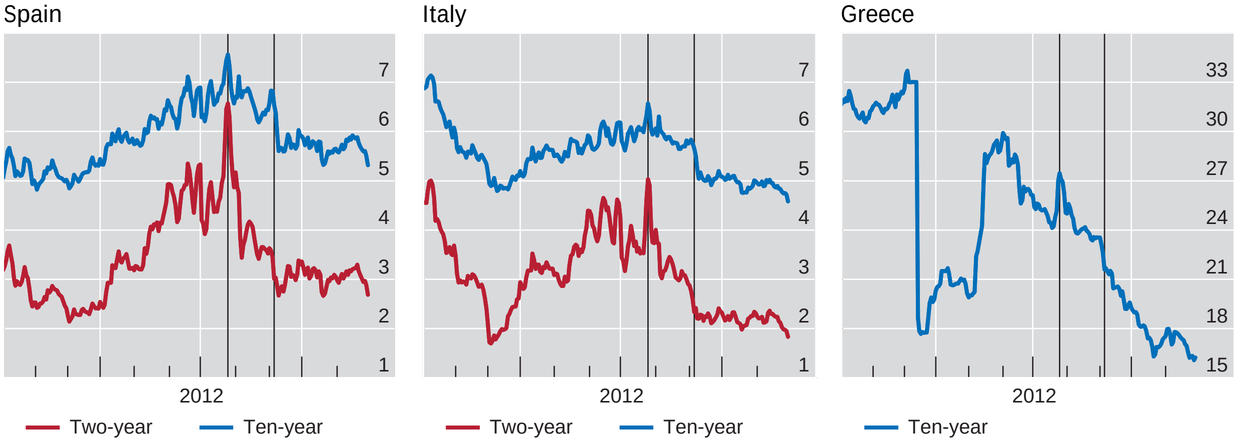


[1] Premiums for insurance against falls in equity price indices over three months relative to three-month forward prices, quoted as the implied volatilities that map to these premiums via the Black-Scholes option pricing formula. Higher implied volatilities correspond to higher premiums.

Source: Bloomberg.

Euro area government bond yields

In per cent | Graph 7



The vertical lines indicate 25 July and 5 September, which respectively provided the last closing yields before ECB President Draghi said that his institution "stands ready to do whatever it takes to save the euro" and the ECB detailed its plans for Outright Monetary Transactions.

Source: Bloomberg.

26 July, the Governing Council provided details on 6 September. The ECB would buy bonds issued by euro area governments with residual maturities of one to three years, with the intention of accepting equal status to other creditors, conditional on those governments first agreeing to follow an economic adjustment programme. Yields on bonds of financially strained governments in the region subsequently fell, having already declined significantly since Mr Draghi's speech, especially at purchase-eligible maturities (Graph 7).

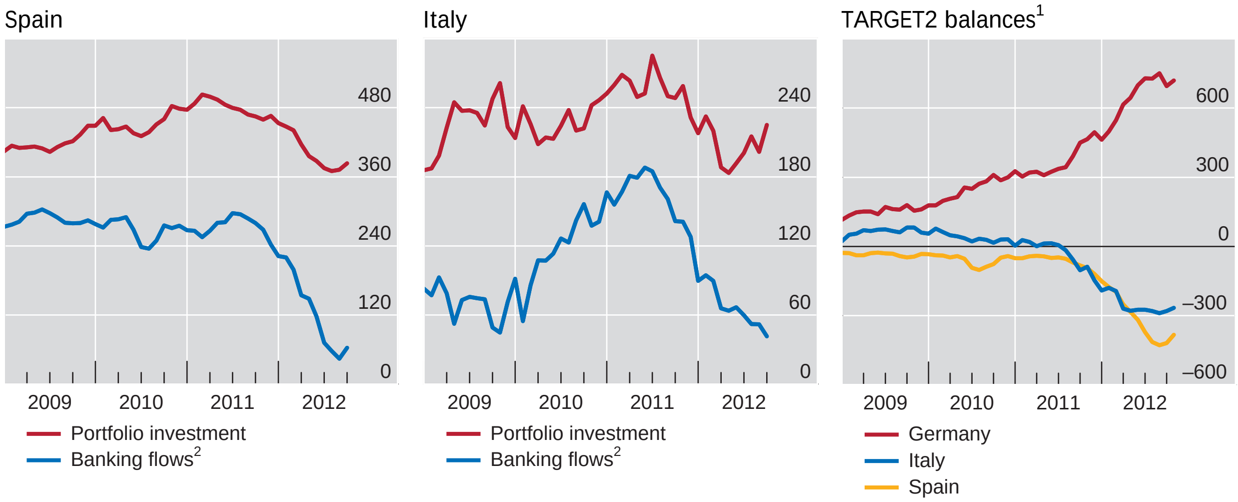
However, Spanish bond yields soon rebounded. This coincided with upward revisions to 2011 and anticipated 2012 budget deficits, clarification that European funds would not be available to finance legacy bank support programmes and a push for independence by the president of Catalonia. In contrast, Italian bond yields remained at much lower levels and in October the government issued a record amount of debt for a single European offering.

Asset prices rose particularly strongly in Greece, where the government eventually received further loan disbursements from its IMF/EU programme. These were due in September, but Greece had slipped behind some of the programme's economic targets. The government subsequently negotiated an adjusted programme, which included lower and later payments on Greece's official debt, transfer to Athens of profits on the Eurosystem's holdings of Greek government bonds and plans for a private sector debt buyback. According to press reports, many hedge funds bought Greek bonds in anticipation of such an outcome. This helped to drive yields lower in the three months to early December (Graph 7, right-hand panel). The Athens Stock Exchange equity price index rose by almost one third over the same period.

Capital flows also seemed to reflect the view that the euro crisis was less likely to intensify. With investors perceiving a reduced risk of currency

Cross-border capital flows and TARGET2 balances of selected euro area countries[1]

In billions of euros | Graph 8



[1] Cumulative net inflows since the start of EMU, and net claims of the national central banks on the ECB that reflect cumulative net purchases of goods and assets from domestic residents settled via the TARGET2 real-time gross settlement system. [2] All capital flows in the financial account of the balance of payments other than direct, portfolio and derivatives investments, excluding those of the central bank. These are largely deposits, loans and repos.

Sources: Deutsche Bundesbank; Bank of Italy; Bank of Spain; Datastream; BIS calculations.

redenomination,[2] portfolio investments flowed into Spain and Italy on a net basis in September. At the same time, outflows of deposits and other funding from banks in these countries slowed or levelled off (Graph 8, left-hand and centre panels). Separate data show that deposits at these banks also held up in October. Some of the net capital inflows to Spain and Italy probably came from Germany, as the Bundesbank saw a reduction in its claims on the ECB that were generated by net payments from other euro area countries. Conversely, the Spanish and Italian central banks' liabilities to the ECB generated by net payments to other euro area countries registered a decrease. These changes ran counter to the trend of the previous year or so (Graph 8, right-hand panel).

Despite this renewed support for the financially strained countries in the euro area, yields on bonds issued by the financially more robust governments were essentially unchanged. Yields on two-year bonds issued by France, Germany and the Netherlands remained close to zero, while yields on their 10-year debt also hovered at historically very low levels. Moody's downgrading of France from AAA had little effect on these yields.

Financial markets also drew support from news suggesting that a sharp and prolonged slowdown in Chinese economic growth seemed less likely. Fears of a "hard landing" in China were allayed, in particular, by rebounds in industrial production and export growth during October as well as a survey of purchasing managers. This reduced perceived default risk for assets vulnerable to a severe

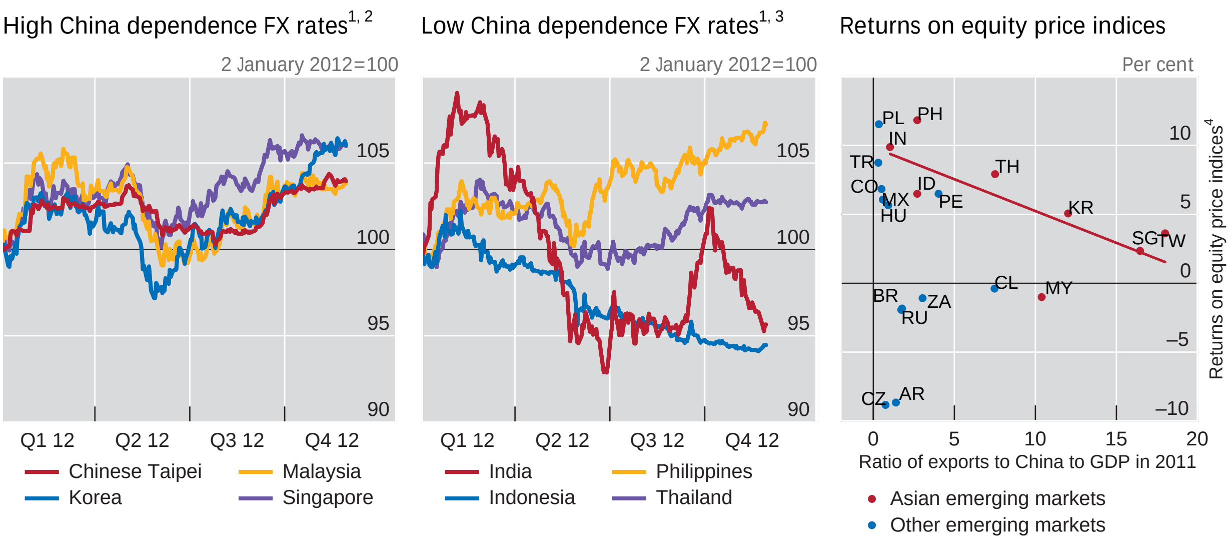
[2] This was suggested, for example, by reductions in spreads between yields on several euro-denominated bonds issued under international law by Italian government-owned companies and bonds with similar maturities issued by the Italian government under domestic law (see the box on page 70). It was also implied by the prices of intrade.com betting contracts that would pay off if any euro area country announced its intention to exit the euro by a specific date.

economic slowdown, such as bank loans. Reflecting this, Chinese bank equity prices outperformed non-bank equity prices in the three months to early December.

Although perceptions of major downside risks may have diminished, the effects of weakening economic growth in China nevertheless spread to other emerging markets, notably in Asia. Here, exchange rate movements in 2012 had already highlighted the importance of China to investors in several economies in the region. In particular, the exchange rates of economies highly dependent on exporting to China have moved almost in step, suggesting that they are driven largely by news from China, while those of less dependent economies have moved more idiosyncratically (Graph 9, left-hand and centre panels). Moreover, in the three months from the beginning of September, equity price indices in the more China-dependent Asian emerging market economies underperformed those of the less China-dependent ones. Meanwhile, non-Asian equity price indices appeared to be less driven by China news (Graph 9, right-hand panel).

However, not all near-term economic risks diminished, notably in the United States. Here, the government remained on course to cut its budget deficit by around 4% of GDP from the beginning of 2013, which most economists agreed would push the economy into recession. Uncertainty about whether and how this fiscal drag would be mitigated weighed on the prices of certain equities. In particular, prices of stocks with high dividend yields and from the defence sector fell relative to the broader US market. Such stocks are particularly vulnerable to higher dividend taxes and spending cuts, respectively (Graph 10, left-hand panel). Fiscal uncertainty also prompted US companies to keep more liquidity on hand in assets such as bank deposits and marketable securities (Graph 10, centre panel). This put further downward pressure on the yields of those assets. However, this near-term

Asian emerging market exchange rates and equity price indices — Graph 9



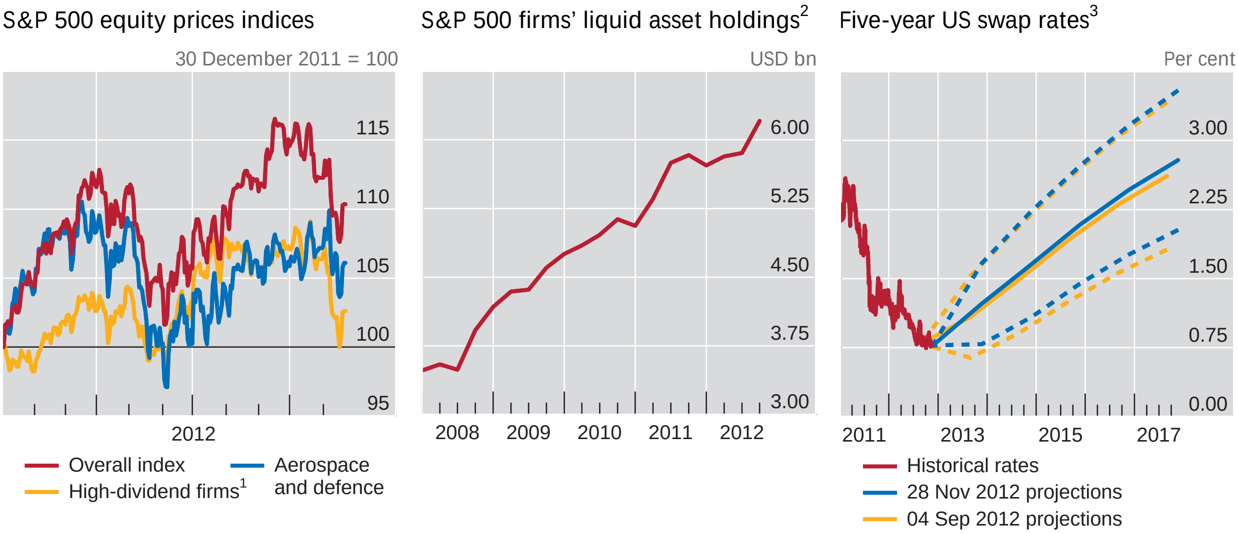
AR = Argentina, BR = Brazil, CL = Chile, CO = Colombia, CZ = Czech Republic, HU = Hungary, ID = Indonesia, IN = India, KR = Korea, MX = Mexico, MY = Malaysia, PE = Peru, PH = Philippines, PL = Poland, RU = Russia, SG = Singapore, TH = Thailand, TW = Chinese Taipei, TR = Turkey, ZA = South Africa.

[1] US dollars per unit of local currency; an increase indicates an appreciation against the US dollar. [2] Countries with ratios of exports to China to GDP in 2011 above 10%. [3] Countries with ratios of exports to China to GDP in 2011 below 10%. [4] In US dollar terms between end-August and early December 2012.

Sources: IMF, *Direction of Trade Statistics*, *World Economic Outlook*; Bloomberg; Datastream.

Financial market reaction to the US fiscal uncertainty

Graph 10



[1] Index of 50 firms paying the highest dividend yields. [2] Average across firms of cash and marketable securities holdings. [3] Central projections (solid lines) are forward prices, while upper and lower projections (dotted lines), which span about 70% of all interest rate possibilities, are derived from swaption volatilities.

Sources: Bloomberg; BIS calculations.

uncertainty had almost no effect between the beginning of September and the end of November on the future path of medium-term US interest rates as implied by derivatives prices (Graph 10, right-hand panel). This suggests that investors remained confident that the government would ultimately lower the trajectory of its debt.

Conclusion

Asset prices generally increased during the period from the beginning of September to early December, supported by further easing of monetary policies and perceptions that some major near-term downside risks had eased. Nevertheless, significant longer-term risks to future asset valuations remained, including those related to the euro area crisis, US fiscal policy and the subdued outlook for global economic growth. Yet equity implied volatilities, including those with longer horizons, fell close to the historically low levels of the mid-2000s. Similarly, some asset prices started to appear highly valued in historical terms relative to indicators of their riskiness. For example, global high-yield corporate bond spreads fell to levels comparable to those of late 2007, but with the default rate on these bonds running at around 3%, whereas it was closer to 1% in late 2007. The same was true of investment grade corporate bond spreads, but with respective default rates of a little over 1% and around 0.5%. Indeed, numerous bond investors said that they felt less well compensated for risk than in the past, but that they had little alternative with rates on many bank deposits close to zero and the supply of other low-risk investments in decline.