# 2. International and Foreign Exchange Markets

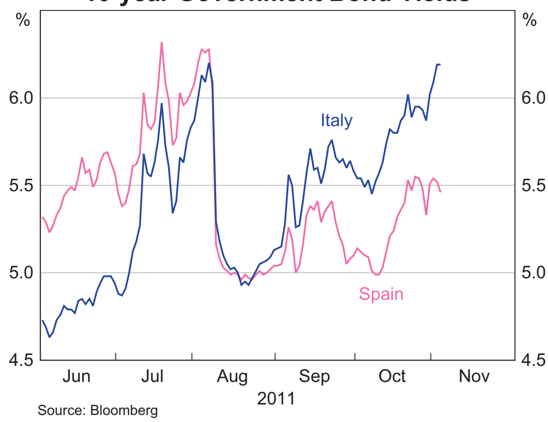
## Sovereign Debt Markets

Concerns about euro area government finances have intensified over the past year despite various policy responses. These responses have included financial assistance for Greece, Ireland and Portugal, comprising loans from other European countries and the IMF, and the purchase of these three countries' government bonds by the European Central Bank (ECB). To help fund these programs, in mid 2010 the euro area established the European Financial Stability Facility (EFSF), which had an initial lending capacity of around €250 billion, backed by guarantees from euro area countries.

Despite these measures, concern has spread from Greece, Ireland and Portugal to the government finances of Spain and Italy. Concerns rose in mid 2011 when it became clear that Greece would need additional external financial assistance, including from the private sector in the form of voluntary 'haircuts' on the value of outstanding Greek government bonds. At that time, these haircuts were expected to be around 20 per cent in net present value terms, and the additional official assistance was expected to be €109 billion.

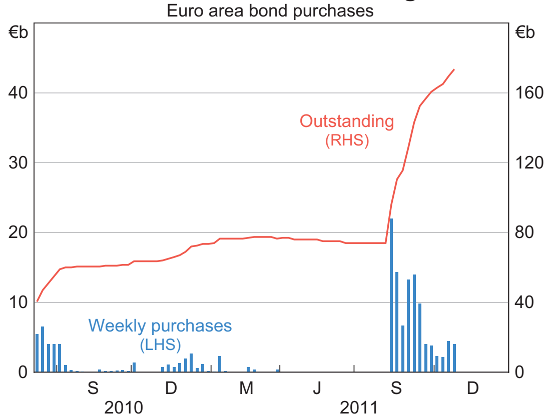
Yields on Italian government bonds rose particularly sharply in July and yields on Spanish sovereign bonds increased from already elevated levels (Graph 2.1). In response, the ECB extended its sovereign debt purchases in early August to include these bonds (Graph 2.2). This had an immediate effect of reducing the yields on these bonds but they have since increased again, particularly Italian yields. All major rating agencies downgraded Italy and Spain in recent months, some by multiple notches, due to fiscal sustainability and growth-related concerns. These downgrades were despite the Italian and Spanish Governments announcing additional austerity measures.

**Graph 2.1**
**10-year Government Bond Yields**



Source: Bloomberg

**Graph 2.2**
**ECB Securities Markets Program**
Euro area bond purchases

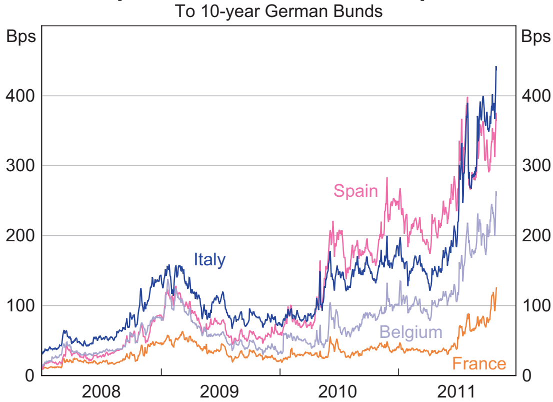


Source: European Central Bank

Due to the increased risk of contagion, European policymakers proposed changes to the EFSF in mid 2011, which were approved by all euro area countries by mid October. The facility will have an increased lending capacity of €440 billion (around €45 billion has already been allocated to the Ireland and Portugal programs and some will be committed to Greece), be able to buy euro area government bonds on primary and secondary markets, be permitted to lend to governments to finance bank recapitalisations, and may act on the basis of precautionary programs prior to official assistance.

France's government finances have come into focus, in part because France may need to provide additional support to other euro area governments. These concerns worsened after the French and Belgian Governments announced plans to break up and partly nationalise Dexia (see section on 'Financial Policy and Regulation') and due to broader concerns about the health of French banks, in part reflecting their exposures to the debt of the 'periphery' economies. Spreads between yields on French sovereign bonds and those on German Bunds widened significantly to more than 100 basis points, the highest since 1992 (Graph 2.3). Spreads on Belgian government bonds also widened.

**Graph 2.3**
**European Government Bond Spreads**
To 10-year German Bunds



Source: Bloomberg

Subsequently, European authorities proposed several measures aimed at restoring confidence in European sovereigns and banking systems. These include:

- a voluntary exchange of Greek government bonds involving a haircut of 50 per cent in nominal terms, intended to see Greece's government debt fall to around 120 per cent of GDP by 2020 from around 160 per cent of GDP currently;
- a new Greek assistance package of up to €130 billion, including up to €30 billion as credit enhancements for the bond exchange;
- banks marking their sovereign debt exposures to market and then increasing their core Tier 1 capital ratios to 9 per cent by mid 2012. Preliminary estimates by the European Banking Authority suggest a capital shortfall of €106 billion. Banks are expected to raise capital from the private sector and restrict dividends and bonuses if necessary. Any shortfall will be provided by national governments with, as a last resort, the funding coming from loans extended by the EFSF to member countries;
- providing government guarantees on banks' longer-term funding; and
- improving the effectiveness of the EFSF by leveraging its expected available lending capacity, by four or five times to around €1 trillion. Two broad options are being considered.

Details of many of these measures are yet to be finalised. Adding to the uncertainty about the plans, the Greek Prime Minister has proposed that Greece will hold a referendum to approve the new assistance package.

Officials from the European Commission, the ECB and the IMF (the 'troika') concluded their fifth review in October of the Greek Government's progress in meeting the targets under the first assistance program. Greece's budget deficit is expected to be well above target this year, on target in 2012 due to recently approved additional austerity measures, but then likely to exceed its 2013 and 2014 targets without further measures. European leaders and the IMF have both announced that should there be a referendum, there will be no further disbursements until after it is completed.

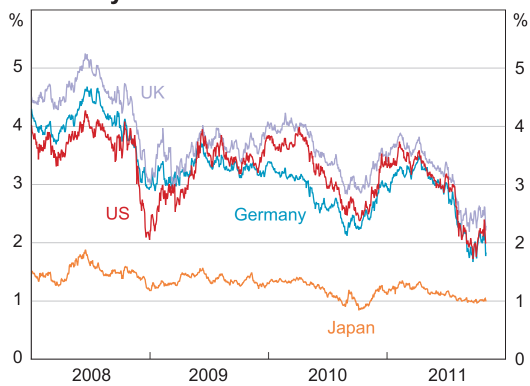
As a condition for Finland's participation in the second assistance package for Greece, an agreement was reached that will see Finland effectively reimbursed for losses of up to 40 per cent of its share of guarantees on Greek loans under the package. In return, Finland must make several concessions; no other countries have sought such an arrangement.

The troika's review of Ireland's economic program in October was favourable, with the Government meeting its commitments under the program, including comprehensive financial sector reforms. This has underpinned a significant narrowing in spreads on Irish government bonds.

Sovereign bond yields in most major economies declined sharply in recent months, with yields on US and German 10-year bonds falling to new multi-decade lows of well below 2 per cent (Graph 2.4). The declines occurred as investors switched funds towards these assets in the face of increased concerns about global growth prospects and European sovereign debt, and notwithstanding that yields were already at low levels. The US Federal Reserve's decision to increase its purchases of longer-term Treasuries also contributed to the decline in longer-term yields (see section on 'Central Bank Policy'). Yields were volatile in early August when Standard and Poor's (S&P) cut the US credit rating to AA+ but there was no lasting effect of this action.

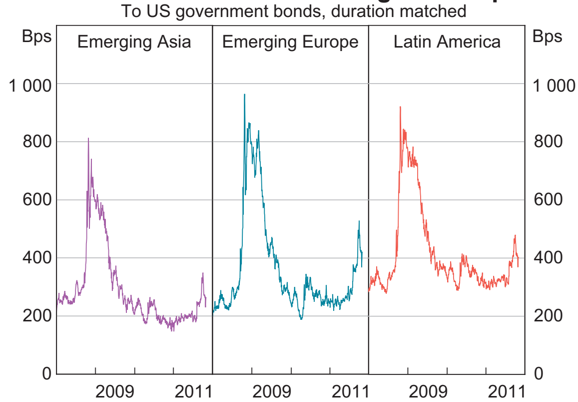
Through the first part of the year, spreads on US dollar-denominated debt issued by emerging market sovereigns had been relatively stable, notwithstanding the increasing concerns in Europe. These spreads widened between early August and early October reflecting the marked deterioration in financial market sentiment, but have recently narrowed (Graph 2.5).

**Graph 2.4**
**10-year Government Bond Yields**




Source: Bloomberg

**Graph 2.5**
**US Dollar-denominated Sovereign Debt Spreads**
To US government bonds, duration matched




Source: Thomson Reuters

## Central Bank Policy

Several central banks have eased monetary policy in response to the deterioration in financial market conditions and the weaker outlook for global growth. With their policy interest rates at, or close to, their effective lower bounds, the US Federal Reserve, ECB, Bank of England (BoE) and Bank of Japan eased policy via other means. Policy rates were lowered in Brazil, Indonesia and Israel in recent months (Table 2.1). In contrast, the Reserve Bank of India and the Bank of Thailand increased policy rates in response to ongoing domestic inflationary pressures.

**Table 2.1: Policy Rates**

| | Current level Per cent | | Most recent change | Cumulative increase Basis points |
|---|---|---|---|---|
| Euro area | 1.50 | ↑ | Jul 11 | 50 |
| Japan | 0.05 | ↓ | Oct 10 | – |
| United States | 0.125 | ↓ | Dec 08 | – |
| Brazil | 11.50 | ↓ | Oct 11 | – |
| Canada | 1.00 | ↑ | Sep 10 | 75 |
| China | 6.56 | ↑ | Jul 11 | 125 |
| India | 8.50 | ↑ | Oct 11 | 375 |
| Indonesia | 6.50 | ↓ | Oct 11 | – |
| Israel | 3.00 | ↓ | Sep 11 | – |
| Malaysia | 3.00 | ↑ | May 11 | 100 |
| Mexico | 4.50 | ↓ | Jul 09 | – |
| New Zealand | 2.50 | ↓ | Mar 11 | – |
| Norway | 2.25 | ↑ | May 11 | 100 |
| Russia | 8.25 | ↑ | Apr 11 | 50 |
| South Africa | 5.50 | ↓ | Nov 10 | – |
| South Korea | 3.25 | ↑ | Jun 11 | 125 |
| Sweden | 2.00 | ↑ | Jul 11 | 175 |
| Switzerland | 0.00 | ↓ | Aug 11 | – |
| Taiwan | 1.875 | ↑ | Jun 11 | 63 |
| Thailand | 3.50 | ↑ | Aug 11 | 225 |
| United Kingdom | 0.50 | ↓ | Mar 09 | – |

Source: central banks

The US Federal Reserve announced it would increase the average maturity of its Treasuries portfolio by purchasing US$400 billion of longer-maturity securities at par value, funded by selling some of its existing holdings of shorter-maturity securities. The Fed also announced it will reinvest principal payments from its holdings of agency securities in agency mortgage-backed securities (MBS); previously these payments were reinvested in Treasuries. Although the total size of the Fed's balance sheet will remain largely unchanged, the policy is expected to provide mild stimulus to the broader economy by reducing longer-term bond yields. US 30-year fixed mortgage rates have declined to low levels but tighter lending standards since the crisis and reduced housing equity have curtailed this transmission channel of US monetary policy.

Around US$44 billion of longer-term Treasuries have been purchased since the Fed's program commenced in early October, largely matching sales of shorter-term securities. The Fed already holds around one-quarter of outstanding longer-term US Treasuries, with this share expected to rise to around two-fifths as a result of the latest program (Table 2.2). The Fed also stated that its policy rate is likely to remain at exceptionally low levels until at least mid 2013 and that an expansion of its large-scale asset purchases could be considered should additional monetary stimulus be required.

**Table 2.2: Federal Reserve Holdings of US Treasury Bonds[(a)]**
As at 28 September 2011, par values

| **Residual maturity** Years | **Federal Reserve holdings** US$ billion | **Share of total outstanding** Per cent |
|---|---|---|
| 0 to 3 | 517 | 16 |
| 3 to 6 | 484 | 25 |
| 6 to 8 | 311 | 39 |
| 8 to 10 | 94 | 15 |
| 10 to 20 | 89 | 33 |
| 20 to 30 | 74 | 13 |
| **Total** | **1 569** | **21** |

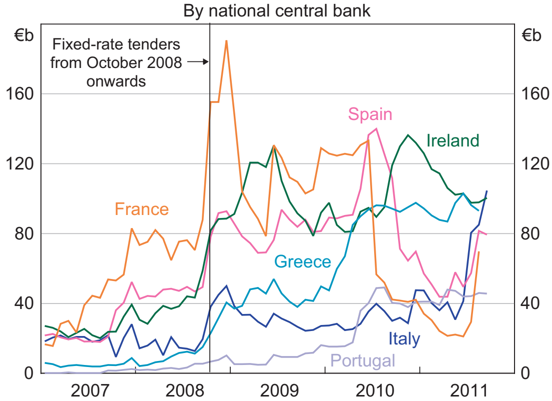
(a) Excludes Treasury Inflation Protected Securities
Sources: Bloomberg; Federal Reserve Bank of New York

The ECB's balance sheet has expanded markedly over recent months. In addition to the resumption of its sovereign debt purchases, ECB lending to banks has risen by nearly half since early April, with the bulk of this increase occurring since July. The latest available data show that a large share of this recent rise has been accounted for by lending to banks in Italy and France, although lending to the latter remained low relative to banking system assets (Graphs 2.6 and 2.7).

The ECB has also introduced additional measures to support bank funding and market liquidity. For the first time since late 2009, the ECB provided unlimited 12-month funding (against eligible collateral) at its policy rate in October and a 13-month operation, intended to span end 2012, will be conducted in December. Moreover, it will continue to provide unlimited shorter-term funding at its policy rate for as long as necessary, and at least until July 2012. The ECB also announced that it will purchase €40 billion of covered bonds over the next year in primary and/or secondary markets. The ECB already holds nearly €60 billion in covered bonds from an initial program that was completed in June 2010.

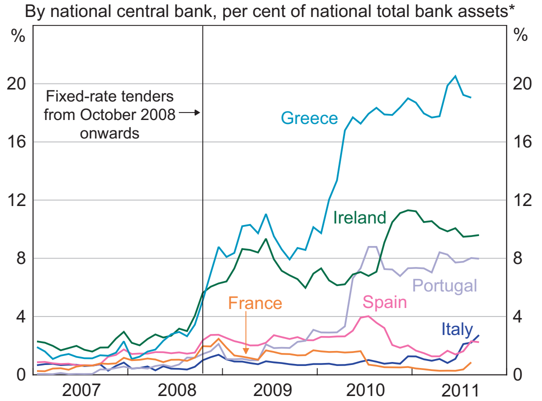
The BoE eased policy by renewing its purchases of government securities in October. It intends to purchase £75 billion of gilts over a four-month period; the BoE had purchased £200 billion of gilts between

**Graph 2.6**
**ECB Lending to Banks***
By national central bank




* Lending provided through monetary policy operations only
Source: central banks

**Graph 2.7**
**ECB Lending**
By national central bank, per cent of national total bank assets*




* Banks proxied by credit institutions for all countries except Portugal and France which use the broader category of monetary financial institutions
Source: central banks

March 2009 and January 2010. This will increase the BoE's holdings of outstanding gilts to around 30 per cent. Recent research by the BoE suggested that the policy easing effect of the £200 billion in gilt purchases may have been equivalent to a 150–300 basis points reduction in the policy rate.

## Financial Policy and Regulation

In Europe, the Belgian, French and Luxembourg Governments announced a plan to break up and partly nationalise Dexia. The bank had found it very difficult to access market funding, including for US dollars. The Belgian Government will acquire Dexia's Belgian retail operations for €4 billion and a 10-year €90 billion funding guarantee will be provided to the remaining privately held bank (Belgium will provide 60.5 per cent, France 36.5 per cent and Luxembourg 3 per cent). Dexia will also sell a number of subsidiaries to other investors. Following an earlier rescue in 2008, the Belgian and French Governments already own a significant stake in Dexia and have extended sizeable guarantees.

In the United States, the Federal Housing Finance Agency (FHFA) sued 17 large financial institutions in order to recover losses on MBS incurred by Fannie Mae and Freddie Mac. The lawsuits concern securities with a total face value of more than US$200 billion, although any losses for banks will be significantly smaller. Multiple other legal proceedings regarding banks' MBS issuance, mortgage lending and foreclosure practices have recently been launched or are ongoing.

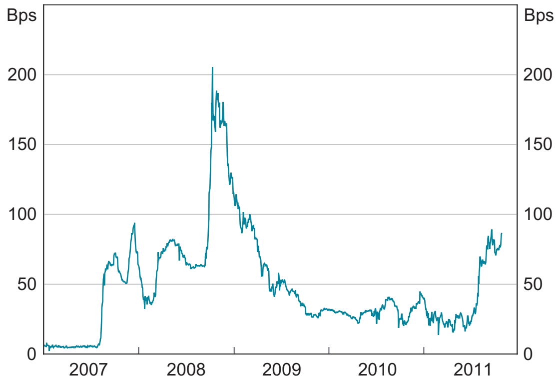
The FHFA also announced changes to its Home Affordable Refinance Program, introduced in 2009 to help borrowers to refinance mortgages owned or guaranteed by Fannie Mae and Freddie Mac. Mortgage modifications under the original program (895 000) were well short of initial expectations, in part because loan-to-valuation ratios (LVRs) could not be more than 125 per cent to qualify. Maximum LVRs will now not apply for fixed-rate loans, most fees for borrowers will be waived and banks will no longer need to meet certain loan representations and warranties. To qualify, borrowers must be current on repayments and not have had any late payments in the past six months. Borrowers will be encouraged to refinance into shorter-term mortgages so as to more quickly reduce loan balances and credit risk to Fannie and Freddie. The changes will become fully operational in the March quarter of 2012 and the program has been extended to end 2013.

US regulators also unveiled their proposal for the 'Volcker Rule' for banks, which forbids banks' proprietary trading activity and holdings in private equity and hedge funds. However, under the proposal banks may take trading positions on behalf of clients or as part of market-making activities, liquidity management and 'risk-mitigating hedging' (including of bank-wide portfolio risks). The proposal also introduces increased compliance and reporting requirements, to assist regulators in identifying permissible versus prohibited activities. Several regulatory agencies will be responsible for interpreting the rule and monitoring compliance in different markets.

## Credit Markets

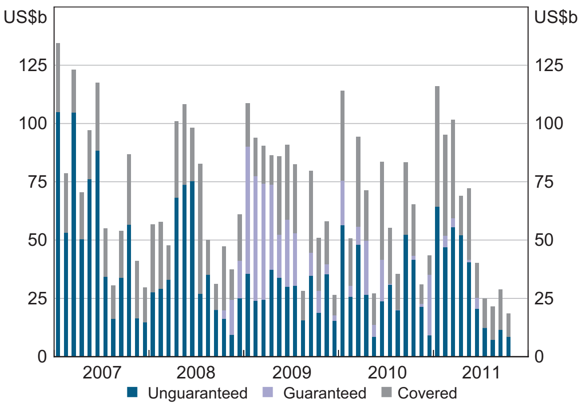
Credit market conditions have been stressed in recent months, particularly in unsecured lending markets, as concerns about fiscal sustainability in the euro area intensified. Funding pressures increased for some European banks and those in the 'periphery' countries remained largely locked out of funding markets. Reflecting heightened counterparty concerns, the cost to European banks of borrowing euros in the short-term unsecured market rose to its highest level since early 2009 (Graph 2.8). European banks' longer-term funding costs have also increased, while their bond issuance, even secured issuance in the form of covered bonds, has slowed sharply (Graph 2.9). However, the ECB's expansion of its liquidity provision described above means that banks are able to obtain funding in the period ahead, provided they hold sufficient acceptable collateral.

**Graph 2.8**
**Euro Interbank Borrowing Spread**
To overnight indexed swaps, 3-month maturity




Source: Bloomberg

**Graph 2.9**
**Euro Area Bank Bond Issuance**

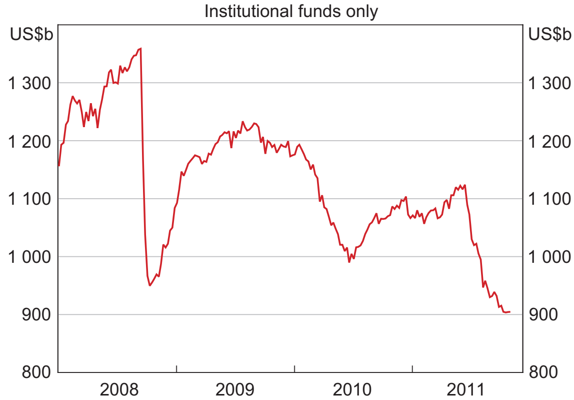



Sources: Bloomberg; Dealogic; RBA; Thomson Reuters

European banks also experienced a significant increase in the cost of borrowing US dollars to fund their US dollar obligations, which remain large in some cases. In part, this higher cost was because US money market funds have sharply reduced their holdings of European bank US dollar debt, by more than investor outflows from these funds (Graph 2.10). 'Prime' institutional funds have reduced their exposures to euro area banks by around half since May, with French bank exposures around three-fifths lower. As a result, European banks increasingly turned to foreign exchange markets to raise US dollars, with some banks also sourcing US dollars in repo markets. This increased the cost of swapping euros into US dollars relative to the cost of unsecured interbank funding (Graph 2.11). Some banks have also announced plans to further scale back their US dollar obligations.

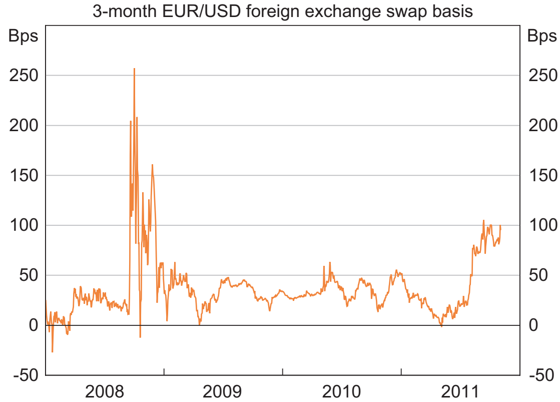
To alleviate banks' US dollar funding pressures around the end of the year, the major central banks announced that they will conduct US dollar liquidity operations with maturities of around three months in October, November and December. These are in addition to ongoing seven-day US dollar swap operations. However, recourse to these facilities has so far been negligible.

**Graph 2.10**
**US Prime Money Market Fund Assets**
Institutional funds only




Source: Investment Company Institute

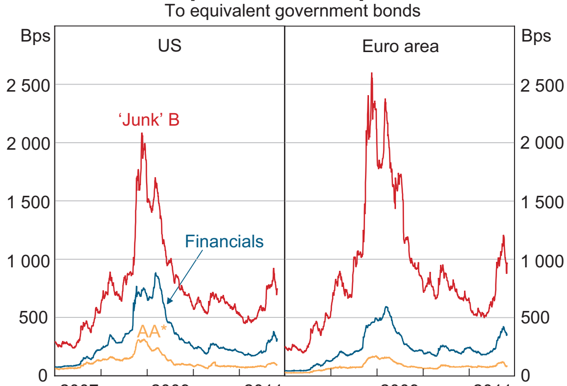
**Graph 2.11**
**Cost of Swapping Euros into US Dollars***
3-month EUR/USD foreign exchange swap basis




* Relative to the cost of unsecured interbank funding
Source: Bloomberg

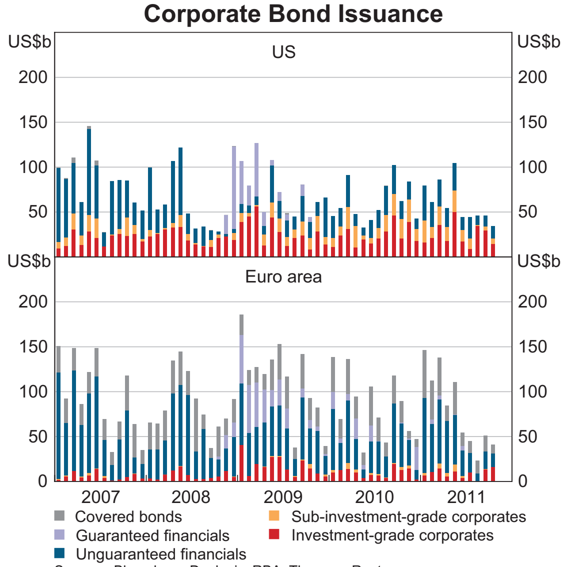
Reflecting the broader tensions in financial markets, corporate bond spreads in the United States and the euro area increased over the past few months (Graph 2.12). Spreads generally widened to the highest levels in around two years, with the increase for lower-rated companies and financial institutions most pronounced. However, yields on corporate bonds for highly rated non-financial companies fell modestly. Corporate bond issuance generally moderated in recent months (Graph 2.13).

**Graph 2.12**
**Corporate Bond Spreads**
To equivalent government bonds




* Non-financial corporates
Sources: Bank of America Merrill Lynch; Bloomberg; RBA

**Graph 2.13**
**Corporate Bond Issuance**




Sources: Bloomberg; Dealogic; RBA; Thomson Reuters

## Equities

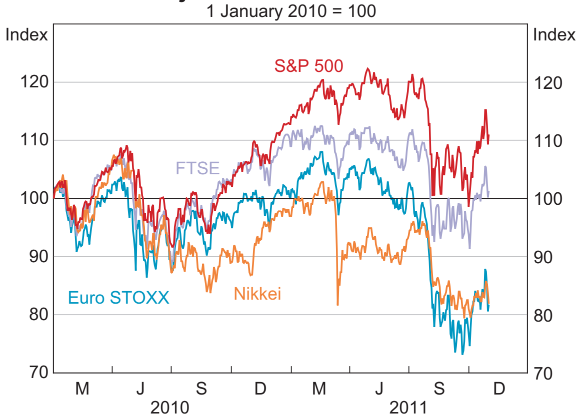
Global equity prices have exhibited sharp swings since mid year (Table 2.3, Graph 2.14). Share prices fell amid sovereign debt and global growth concerns, and in the euro area and Japan reached the lowest levels since early 2009. Although global equity prices increased with the announcement in October of plans to recapitalise European banks, they remain 13 per cent below the peak reached earlier this year. Share price volatility implied by options also remains elevated (Graph 2.15).

**Table 2.3: Changes in International Share Prices**
Per cent

| | Since end 2010 | Since previous *Statement* |
|---|---|---|
| United States | | |
| – Dow Jones | 2 | –1 |
| – S&P 500 | –2 | –2 |
| – NASDAQ | 0 | –2 |
| Euro area | | |
| – STOXX | –18 | –9 |
| United Kingdom | | |
| – FTSE | –7 | –2 |
| Japan | | |
| – Nikkei | –16 | –10 |
| Canada | | |
| – TSE 300 | –9 | –4 |
| Australia | | |
| – ASX 200 | –12 | –3 |
| China | | |
| – China A | –11 | –6 |
| MSCI indices | | |
| – Emerging Asia | –12 | –8 |
| – Latin America | –14 | 2 |
| – Emerging Europe | –13 | –10 |
| **– World** | **–9** | **–4** |

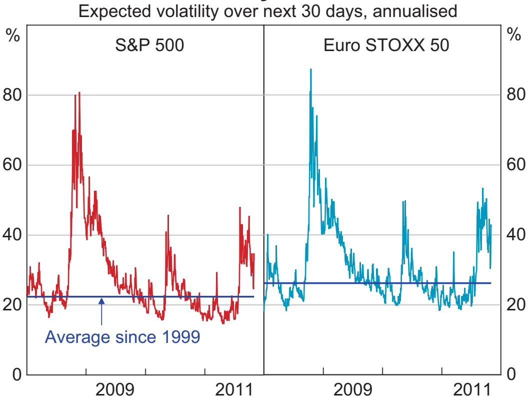
Source: Bloomberg

## Graph 2.14
**Major Share Price Indices**
1 January 2010 = 100




Source: Bloomberg

## Graph 2.15
**Volatility Indices**
Expected volatility over next 30 days, annualised

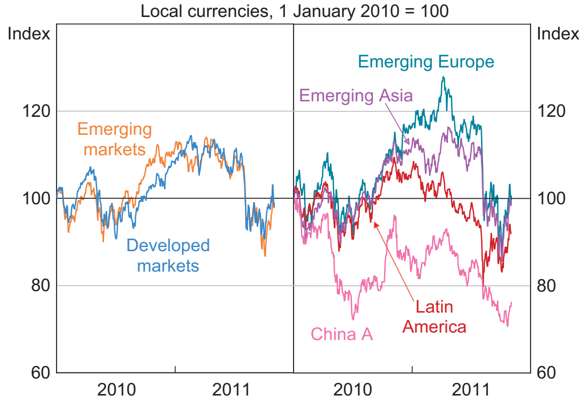



Source: Bloomberg

Banking sector share prices in the major economies continued to underperform, with the euro area banking index falling close to its March 2009 trough. Many banks are now trading at a significant discount to their book value. Earnings of large European and US banks reported for the September quarter were mixed both in absolute terms and relative to analysts' expectations. Investment banking revenues were generally weak and aggregate loan-loss provisions made in the quarter were modestly higher but remained well below those recorded between 2008 and 2010. In aggregate, about two-thirds of the six largest US banks' earnings were due to accounting gains on their own debt and derivatives positions; this also supported large European banks' earnings. The credit ratings of a number of large banks were downgraded in recent months, either due to downgrades of their sovereigns, a lower likelihood of government support and/or funding pressures. In addition, Fitch placed Goldman Sachs and Morgan Stanley on negative credit watch because these institutions' business models are particularly sensitive to market sentiment and regulatory changes.

Equity prices in emerging markets generally underperformed those in developed markets in recent months, a notable exception being Latin American equities (Graph 2.16). The decline in emerging Asia share prices partly reflected concerns by some about a possible sharp slowing in the Chinese economy and about the effect of slowing global growth on the region's exports. Some Asian equity markets experienced substantial selling by foreigners. Equity prices in Latin America rose in net terms over the past three months, supported in part by policy easing in Brazil, but have performed in line with other emerging equity markets since the start of the year.

## Graph 2.16
**Share Price Indices**
Local currencies, 1 January 2010 = 100

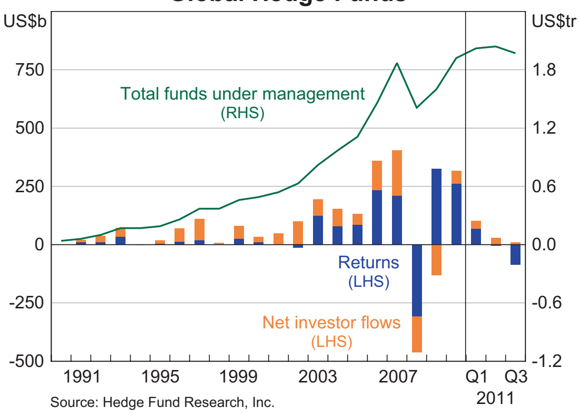



Sources: Bloomberg; MSCI

## Hedge Funds

Global hedge funds recorded a loss of 6.2 per cent over the three months to September, but nevertheless outperformed global equity markets over the same period (Graph 2.17). This is consistent with the tendency for global hedge funds to have experienced less volatile returns than global equity markets over recent years. Despite recent losses, global hedge funds have on average recouped the losses recorded during the 2008–09 global financial crisis, whereas the market value of global equities remains well below its 2007 peak. Funds under management fell over the September quarter to US$2.0 trillion, with recent losses outweighing relatively modest investor contributions.

**Graph 2.17**
**Global Hedge Funds**




Source: Hedge Fund Research, Inc.

**Table 2.4: Changes in the US Dollar against Selected Currencies**
Per cent

| | Over past year | Since previous *Statement* |
|---|---|---|
| South African rand | 16 | 19 |
| Swiss franc | –10 | 15 |
| Mexican peso | 10 | 15 |
| Brazilian real | 2 | 12 |
| Indian rupee | 11 | 11 |
| New Zealand dollar | –3 | 9 |
| South Korean won | 1 | 6 |
| Indonesian rupiah | 1 | 6 |
| Singapore dollar | –1 | 6 |
| Malaysian ringgit | 2 | 6 |
| Canadian dollar | 1 | 5 |
| European euro | 2 | 4 |
| Swedish krona | 0 | 4 |
| New Taiwan dollar | –1 | 4 |
| Australian dollar | –3 | 4 |
| Thai baht | 3 | 3 |
| UK pound sterling | 1 | 3 |
| Japanese yen | –3 | 1 |
| Philippine peso | 0 | 1 |
| Chinese renminbi | –5 | –1 |
| **Majors TWI** | **0** | **4** |
| **Broad TWI** | **1** | **5** |

Sources: Bloomberg; Board of Governors of the Federal Reserve System

## Foreign Exchange

With market participants continually reassessing the prospects for an orderly resolution of the situation in Europe, frequent fluctuations in risk sentiment have translated into an increase in exchange rate volatility over recent months.

The US dollar has appreciated over recent months, and has retained its safe-haven status in the minds of many investors despite S&P's downgrade of the US sovereign credit rating in early August (Table 2.4). As market uncertainty increased towards mid September, funds invested in assets in offshore markets were repatriated to the United States, and to a lesser extent Japan. Profit-taking to cover losses on other asset holdings also appears to have been a motivation for the withdrawal of funds from offshore markets (with gold also being sold around this time despite the rise in global economic uncertainty). As a result, the US dollar appreciated by 7 per cent in trade-weighted terms between late August and early October. However, the US dollar has since retraced some of these gains and is currently around 5 per cent above the historical low it reached in

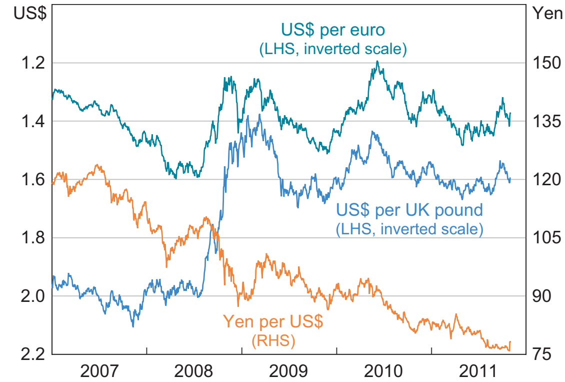
May, reflecting some improvement in risk sentiment after steps were taken by European policymakers to resolve the region's crisis.

The euro has traded in a relatively wide range over recent months, buffeted by the ongoing uncertainty. From late August and throughout September, growing scepticism regarding the Europeans' ability to resolve the debt crisis resulted in a 9 per cent depreciation of the euro against the US dollar over a five-week period, although the euro has reversed some of these losses since then. Overall, the euro has depreciated by 5 per cent against the US dollar since late August. Intraday volatility in the euro has risen to be currently around levels last seen in May 2010 (Graphs 2.18 and 2.19).

Amid the increase in market uncertainty, strong safe-haven demand saw the Swiss franc come under further appreciation pressure, posting record highs against the US dollar and the euro in mid August (Graph 2.20). The Swiss National Bank initially responded by introducing measures to increase franc liquidity and lower short-term interest rates, before imposing a ceiling of 1.20 Swiss francs per euro on 6 September. As a result, the Swiss franc has depreciated by around 15 per cent against the euro from its peak, but remains well above its long-run average. While intraday franc volatility has fallen from its exceptionally high levels in August, the franc is still sensitive to changes in market sentiment. With the attractiveness of the Swiss franc as a safe-haven asset now somewhat reduced, other perceived safe havens such as the US dollar and the Japanese yen have faced appreciation pressures.

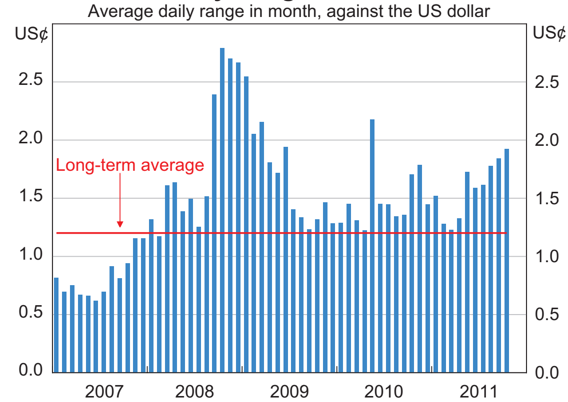
The yen initially appreciated to below 80 yen per US dollar in July on safe-haven demand and the repatriation of offshore investments. Between early August and mid October, it generally traded in a relatively tight range around 77 yen per US dollar. However, after the yen recorded a new post-World War II high of 75.32 yen per US dollar on 31 October, the Japanese authorities intervened for the fourth time in a little over a year. As a result, the yen has depreciated by around 3 per cent from the recent

**Graph 2.18**
**US Dollar**



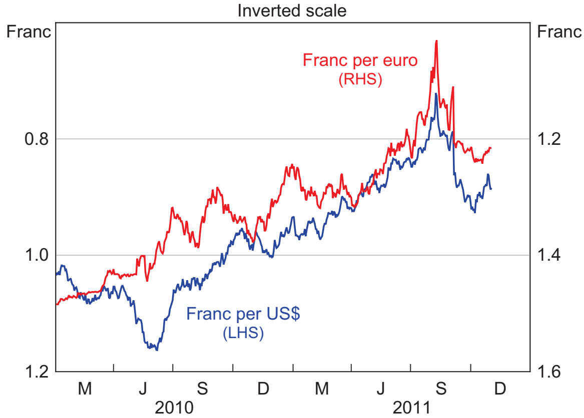

Source: Bloomberg

**Graph 2.19**
**Intraday Range in the Euro**
Average daily range in month, against the US dollar




Source: Bloomberg

**Graph 2.20**
**Swiss Franc**
Inverted scale



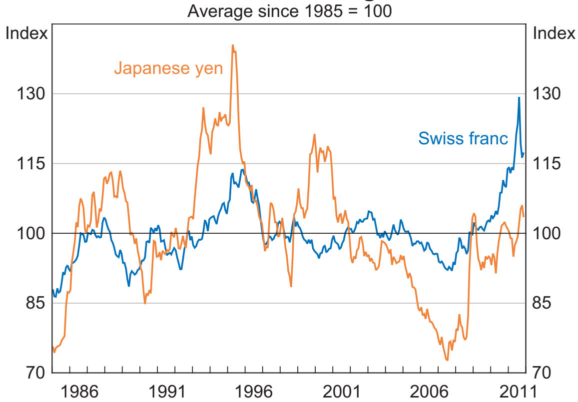

Source: Bloomberg

peak, and is currently trading around 78 yen per US dollar. The Japanese Government also recently proposed a package of measures that offers incentives for certain types of offshore investments in order to reduce appreciation pressures on the yen. The package includes some support measures for domestic exporters, which have become less internationally competitive as the exchange rate has strengthened.

While the yen has depreciated modestly against the US dollar over the past three months, it has appreciated by around 2 per cent in trade-weighted terms. In real terms, however, the yen trade-weighted exchange rate is not at particularly high levels, in contrast to the Swiss franc, which recently reached a new historical high in both real and nominal effective terms (Graph 2.21).

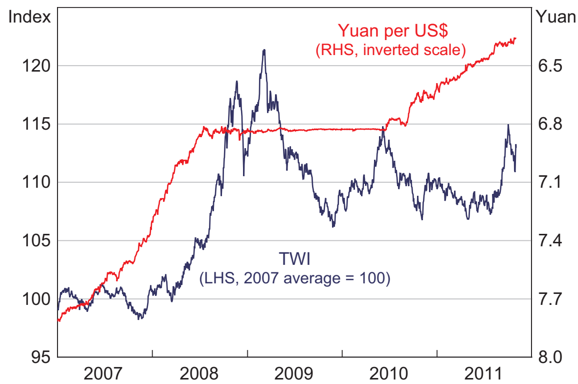
Despite the turbulent market conditions, the Chinese authorities have continued to gradually appreciate the renminbi over recent months. Overall, the renminbi has appreciated by around 4 per cent against the US dollar since the beginning of the year (Graph 2.22). In trade-weighted terms, the renminbi appreciated to a two-year high in early October, primarily reflecting the appreciation of the US dollar over the same period. It has since depreciated by 2 per cent from its peak.

**Graph 2.21**
**Real Effective Exchange Rates***
Average since 1985 = 100




* RBA estimates for October and November 2011
Sources: BIS; Bloomberg; RBA

**Graph 2.22**
**Chinese Renminbi***




* Onshore exchange rates
Sources: BIS; Bloomberg; RBA

The turbulent market conditions have been reflected, however, in the offshore renminbi exchange rate, which has traded at a discount to the onshore rate since late September. The negative market sentiment saw market participants sell renminbi in the offshore market, leading to a depreciation of the offshore exchange rate relative to the onshore exchange rate. The resulting spread between the onshore and offshore rates encouraged eligible firms to sell renminbi that had been acquired offshore through trade transactions at the higher onshore rate, with market reports indicating that this contributed to the exhaustion of the quarterly quota for renminbi conversion in late September. This quota applies to transactions undertaken by Bank of China (Hong Kong) (BoC(HK)), which operates the interbank renminbi market in Hong Kong and facilitates the settlement of renminbi-denominated trade transactions with the Mainland. The offshore rate is currently trading at a discount of around ½ per cent to the onshore rate, compared with an average premium of ¼ per cent since the offshore rate was introduced in September last year (Graph 2.23). The non-deliverable forward market currently embodies a small depreciation in the onshore renminbi exchange rate over the next year, for the first time since early 2009.

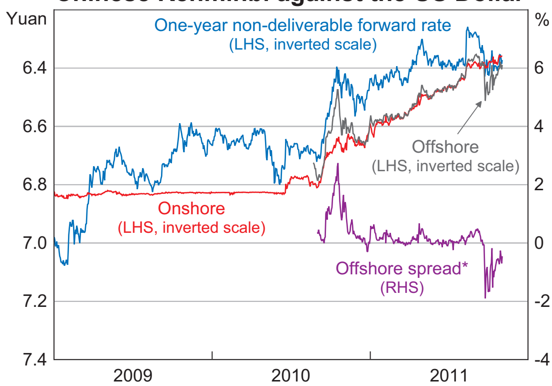
Through the first part of the year, emerging markets generally experienced strong capital inflows and upward pressure on their exchange rates, prompting intervention in foreign exchange markets and the introduction of various forms of capital controls to slow the pace of appreciation. However, since August, these trends have been reversed. Portfolio investment in emerging markets was reduced, particularly equity holdings, reversing some of the previous strong inflows. Emerging market currencies have generally depreciated against the US dollar over recent months, with the sharpest falls occurring in mid September as concerns about the outlook for the US economy added to the concerns about the euro area. Some of the falls in emerging market currencies, however, have since been partly retraced as sentiment had improved somewhat after steps were taken by the euro area authorities to resolve its regional debt crisis, notwithstanding an increase in market uncertainty more recently.

The South Korean won was particularly affected by the growing concerns in Europe, depreciating by as much as 12 per cent from its three-year high in early August. The Bank of Korea is reported to have intervened to support the won in late September by selling foreign exchange, with the won since appreciating by 6 per cent (Graph 2.24). In October, the authorities announced expansions in their currency swap arrangements with Japan and China.

Authorities in a number of other emerging Asian countries were also reported to have sold foreign exchange in larger-than-usual quantities. Consistent with this, the foreign exchange reserves of a number of emerging market economies declined over the September quarter, although valuation effects also played a role (Table 2.5). The declines in reserves were particularly pronounced in September, with Indonesia, Russia, South Korea, Taiwan and Thailand all recording large monthly falls in reserves. The Chinese reported a rare fall in their foreign exchange reserves – the largest fall in US dollar terms in at least 15 years. While valuation effects will have contributed to the fall, it seems that the Chinese

**Graph 2.23**

**Chinese Renminbi against the US Dollar**



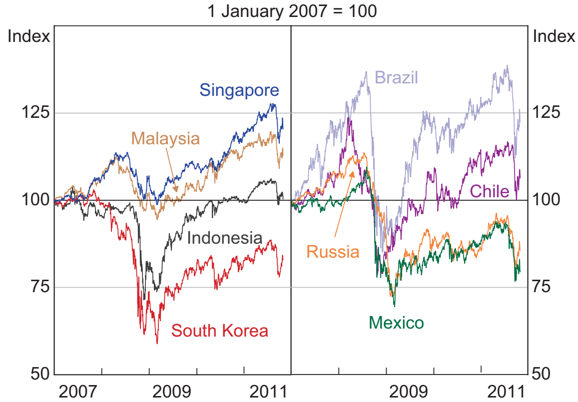

* Negative spread indicates one US dollar buys more yuan offshore than onshore

Source: Bloomberg

**Graph 2.24**

**Selected Currencies against the US Dollar**

1 January 2007 = 100




Source: Bloomberg

authorities accumulated less foreign exchange than usual over the period. Nevertheless, China's foreign exchange reserves still exceed US$3 trillion.

After reaching a 12-year high against the US dollar in late July, the Brazilian real had depreciated by almost 19 per cent by early October, though it has since recovered almost half of these losses. The Brazilian authorities responded by intervening in the foreign exchange swap market to support the real, a reversal of their previous strategy of introducing measures to dampen appreciation pressures.

**Table 2.5: Foreign Exchange Reserves**
US$ equivalent (billions)

| | Monthly change | | Level |
|---|---|---|---|
| | Jul–Aug 2011 average | Sep 2011 | As at end Sep 2011 |
| China | 33 | –61 | 3 202 |
| Japan | 37 | –12 | 1 123 |
| Russia | 6 | –24 | 460 |
| Taiwan | 0 | –11 | 389 |
| Brazil[a] | 9 | –3 | 341 |
| South Korea | 3 | –9 | 296 |
| Thailand | 1 | –8 | 170 |
| Indonesia | 2 | –10 | 115 |
| South Africa | 0 | –1 | 40 |
| Chile[a] | 1 | 1 | 36 |

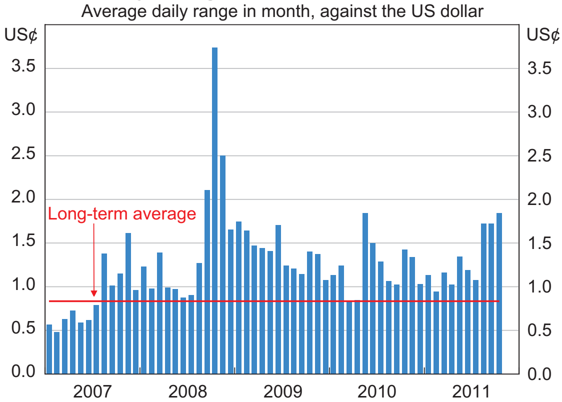
(a) RBA estimates of official reserve assets excluding gold
Sources: Bloomberg; CEIC; IMF; RBA

## Australian Dollar

Similar to most other currencies, the past three months have been a volatile period for the Australian dollar. Reflecting the market's broader uncertainty about the euro area debt situation, intraday volatility was elevated throughout the period, although liquidity in the market has remained satisfactory (Graph 2.25). From a recent high of more than US$1.10 in late July, the Australian dollar depreciated to an intraday low below US$0.94 on 5 October – its lowest level since September 2010 – but has since appreciated to be around US$1.02. On a trade-weighted basis, the Australian dollar is around 3 per cent higher than a year earlier and around 4 per cent below its recent high recorded in May (Graph 2.26, Table 2.6).

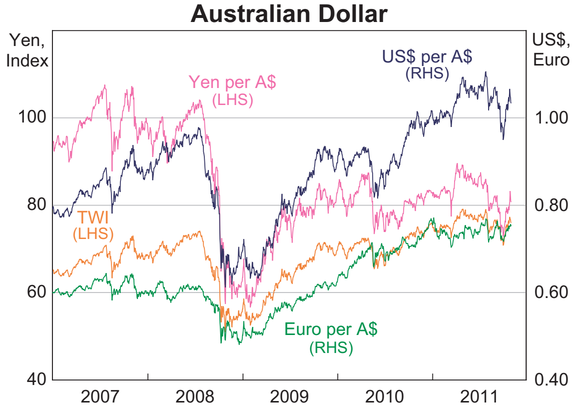
Through until mid September, the Australian dollar (and to a lesser extent, commodity prices) had remained relatively resilient in the face of large declines in global equity prices, in contrast to the experience in late 2008. However, as risk concerns broadened in September, the Australian dollar, and

**Graph 2.25**
**Intraday Range in the Australian Dollar**
Average daily range in month, against the US dollar




Source: Bloomberg

**Graph 2.26**
**Australian Dollar**




Sources: RBA; Thomson Reuters; WM/Reuters

**Table 2.6: Changes in the Australian Dollar against Selected TWI Currencies**
Per cent

| | Over past year | Since previous *Statement* |
|---|---|---|
| South African rand | 20 | 14 |
| Swiss franc | –7 | 10 |
| Indian rupee | 15 | 7 |
| New Zealand dollar | 1 | 5 |
| South Korean won | 4 | 2 |
| Indonesian rupiah | 4 | 2 |
| Singapore dollar | 2 | 2 |
| Malaysian ringgit | 5 | 2 |
| Canadian dollar | 4 | 1 |
| European euro | 6 | 0 |
| Thai baht | 7 | –1 |
| UK pound sterling | 4 | –1 |
| Japanese yen | 0 | –3 |
| US dollar | 4 | –4 |
| Chinese renminbi | –1 | –5 |
| **TWI** | **3** | **–1** |

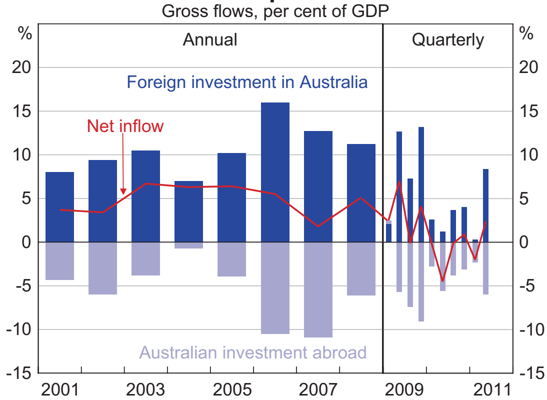
Sources: Bloomberg; Thomson Reuters; WM/Reuters

commodity indices, have reverted to moving more directly in line with swings in global financial market sentiment. (See 'Box A: A Comparison of Commodity Indices' for a discussion of why different commodity indices have diverged over recent years.)

## Capital Flows

Net capital inflows over the past two years have been dominated by inflows to the public sector. Net inflows of foreign investment into Federal Government securities continued in the June quarter although various offsetting outflows meant that the public sector overall made little net contribution. Instead, in the June quarter net capital inflows predominantly took the form of net foreign investment in the private sector, which recorded its largest net capital inflow since the December quarter 2009 (Graph 2.27). The net capital inflow to the private sector primarily reflected strong equity inflows to non-bank financial firms, who repatriated Australian equity investments from abroad as global equity prices declined. Foreign investors' net purchases of Australian bank debt securities remained subdued in the June quarter.

**Graph 2.27**
**Private Capital Flows***
Gross flows, per cent of GDP




* Assumes all direct investment is private. Includes state government and public corporations, and adjusted for US dollar swap facility in 2008–2009
Sources: ABS; RBA