

# CENTRAL BANK MARKET OPERATIONS

*Address by Mr Ric Battellino, Deputy Governor,  
to Retail Financial Services Forum, Sydney,  
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Central bank market operations around the world have been in the news in recent weeks, so I thought it might be useful to take this opportunity to run through those developments. While this topic may seem somewhat distant from retail financial services, there is in fact a strong relevance to today's conference, because much of what central banks do in financial markets eventually flows through the whole financial system, including retail services.

## **Background**

The Reserve Bank has been using market operations to implement monetary policy since the 1980s.<sup>1</sup> Essentially, this involves dealing in markets to influence the interest rate on overnight funds in the money market – also known as the cash rate. Central banks are able to closely control the overnight interest rate because they have unlimited ability to inject funds into, or withdraw funds from, the money market. This model for implementing monetary policy is now fairly standard across the developed world.

The Reserve Bank Board sets the stance of monetary policy in terms of a target for the cash rate because this rate ultimately influences the broad spectrum of interest rates in the money and capital markets and the interest rates that intermediaries charge on loans, including those in the retail market. In effect, all interest rates in the financial system are determined in one way or another relative to the cash rate. By targeting the cash rate, central banks are therefore able to exert broad influence over the overall cost of credit in the economy and, in turn, economic activity and inflation.

After the Reserve Bank Board has decided the target for the cash rate each month, the Domestic Markets Department of the Bank is responsible for keeping the actual cash rate in the market as close as possible to the target over the ensuing inter-meeting period. A major determinant of the cash rate is the aggregate level of balances held by commercial banks in their exchange settlement accounts at the Reserve Bank. These are the funds that banks rely on to meet their daily settlement obligations to each other and to the Reserve Bank. If banks do not have enough of these funds, they risk failing in their payments, so a shortage of funds causes banks to bid more aggressively in the money market to try to restore their holdings. On the other hand, because these funds earn an interest rate that is below the rate that could be earned in the market (25 points below the cash rate), banks do not want to hold more than necessary.

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<sup>1</sup> For details of the Reserve Bank's market operations see <http://www.rba.gov.au/MarketOperations/>.

As such, a build-up in exchange settlement balances makes banks more eager to lend funds, and this pushes market interest rates down.

The job of Domestic Markets Department is therefore to ensure that the aggregate supply of exchange settlement balances is sufficient for the cash market to clear each day at the target cash rate. As can be seen from Graph 1, the level of exchange settlement balances necessary to achieve this is typically around \$700–800 million. However, for various reasons, there are times when banks need more, or less, cash. In these cases, the Reserve Bank responds by adjusting the amount it provides, in order to equilibrate demand and supply. It does this by buying securities

to increase the supply of exchange settlement balances and selling securities to reduce the supply. These transactions may be either outright purchases or sales, or repurchase agreements which involve the sale of a security with an undertaking to repurchase it at a future agreed date and at an agreed price. In recent years, the Reserve Bank's operations have been predominantly by way of repurchase agreements.

It is worth noting that the range of securities that the Bank is prepared to deal in has been widened over the

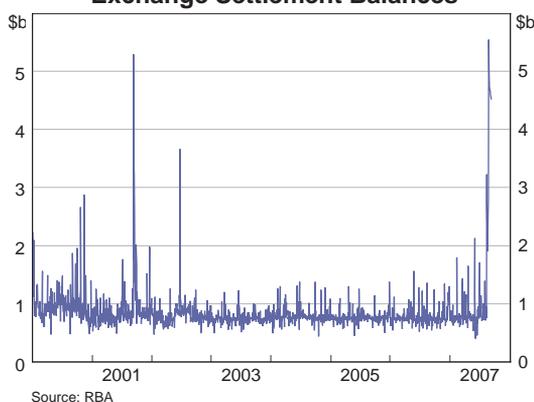
years. Ten years ago, the Bank only dealt in Commonwealth Government securities, but in response to the diminished supply of these securities and in recognition of growing markets in other securities, the Bank over the years has added semi-government securities, bonds issued by international organisations and Australian bank bills to the list of securities in which it is prepared to deal.

International practice by central banks in this regard is quite varied: some central banks take a narrower range of securities than the Reserve Bank; others take a broader range. There has, however, been a general tendency over the years for central banks to widen the range of securities in which they are prepared to deal.

Over time, the Reserve Bank has also widened the range of counterparties with which it is prepared to deal. Currently, it deals with any holder of securities that is able to settle its transactions electronically through the dedicated RITS settlement system. In this regard, the Reserve Bank is at the more liberal end of the international spectrum. Many other central banks limit their dealing to banks or selected groups of primary dealers.

The daily routine in market operations is fairly straightforward. The Bank's dealing intentions are announced at 9.30 am each morning, dealing is completed over the subsequent half hour, and details of dealings are published at around 10.15 am. Second rounds of dealing may be undertaken later in the day if needed, but such circumstances have been rare.

**Graph 1**  
**Exchange Settlement Balances**



As well as these regular operations, the Bank has put in place a standing facility to allow market participants to access cash, at their discretion, in unforeseen circumstances. This facility allows banks and other holders of exchange settlement accounts to borrow overnight on a secured basis, though at a penalty of 25 basis points over the cash rate target. Banks typically use this facility only if they experience some operational difficulty or miscalculate their daily funds flows, which is rare.

With banks able to borrow from the Reserve Bank at their discretion at 25 points above the cash rate, and the Reserve Bank paying interest on exchange settlement balances at 25 points under the cash rate, the rate at which cash can trade in the market is confined to a 50-point corridor around the target. In practice, the degree of fluctuation is much less than this. As shown in Graph 2, so far this year there have only been three days when the cash rate has deviated from the target, on each occasion by only one or two basis points.

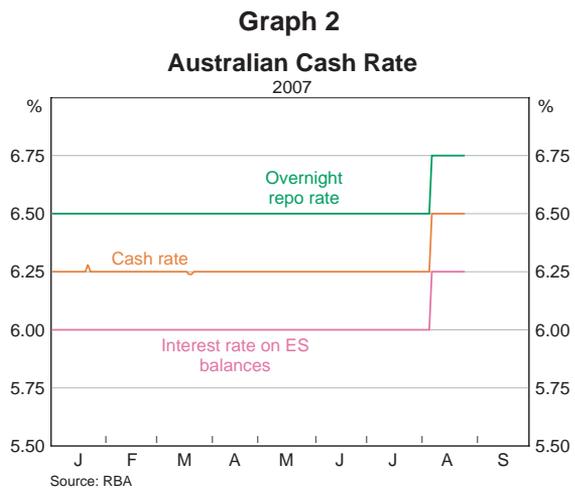
Even though each central bank around the world has its own idiosyncratic arrangements in relation to market operations, the essence of the arrangements is the same. It involves the central bank

buying and selling securities in the market to supply enough funds to banks to keep the actual short-term interest rate as close as possible to the target. These operations essentially work through the banking system and rely on banks passing on funds not only to each other but also to market participants more generally. Most of the time this works seamlessly, but there are times, such as the present, when it doesn't. Let me move therefore to these recent events.

### What Changed in the Past Couple of Weeks?

The problems experienced in money markets in recent weeks had their origins in the credit and market-related losses incurred by investors who had bought securities collateralised by US sub-prime mortgages. Various investment funds worldwide, including in Australia, have been reporting losses on these securities for some months now. Most of these have been hedge funds, and while the losses incurred in some cases have been severe, these problems for quite some time did not seem to have any significant ramifications more generally through the financial system.

That changed on 9 August, after a large European bank announced that it was freezing withdrawals from three of its investment funds due to losses incurred by those funds and the difficulty in valuing their security holdings. This seemed to trigger a shift to a much more risk-averse approach by money market participants in dealing with each other.



What seemed to be worrying people was that, while the US Fed had calculated the losses in the sub-prime market as being potentially as high as US\$100 billion, only a few billion of losses had been announced by investment funds. This naturally led market participants to question who was sitting on the prospective losses, and what this meant for the creditworthiness of market counterparties. Investors became much more risk-averse and banks severely curtailed their lending to each other, causing gridlock in the money market. The process spread quickly because once banks started to worry that others may stop lending to them, they in turn stopped lending to others.

While there has been a widespread tightening in the availability of credit in all markets, those most affected have been the vehicles used by banks to invest in, or warehouse, mortgages. These vehicles, known variously as conduits, credit arbitrage funds or warehouses, had been set up by many banks around the world to finance mortgages off their balance sheets. The funding came from the issue of short-term securities backed by mortgages – so-called asset-backed commercial paper.

Until recently, these vehicles had found it very easy and cheap to raise money. Despite the fact that hardly a day went by without some respected commentator around the globe warning that credit risk was being under-priced, investors remained enthusiastic and credit spreads if anything continued to decline. For example, the yield on US 90-day asset-backed commercial paper for much of the past year had been similar to the overnight rate on fed funds. The amount of such paper issued almost doubled over the past couple of years, to US\$1 200 billion.

The market for asset-backed commercial paper extended well beyond the US, as banks in most countries had set up these conduit vehicles. Many of the securities issued by these vehicles were in international markets with the funds swapped back into the relevant domestic currency. Cross-border flows were large, creating strong links between national markets.

Cross-border links were also generated by the credit lines that these vehicles had established with banks in the event that the commercial paper market failed. These lines were spread across banks in a range of countries, so problems experienced by a conduit vehicle in one country affected banks in many countries.

When investor attitudes to credit risk changed abruptly in early August, these links quickly spread the problems worldwide. Asset-backed commercial paper markets came to a virtual standstill, forcing the bulk of these conduit vehicles to turn to the lines of credit they had negotiated with banks. This in turn meant that banks in a wide range of countries found themselves under increased funding pressure in order to meet commitments on credit lines.

The effects on markets across countries were very similar:

Overnight money market rates rose above the level targeted by central banks. For example, while the US Fed is currently targeting 5.25 per cent, the actual rate in the market rose to 6 per cent on 9 August (Graph 3).

In LIBOR and swap markets, which are further away from the direct influence of central banks because they are more internationally focused and have a greater diversity of participants, margins widened relative to cash rates (Graph 4).

Yields on securities issued by banks, such as short-term bankers acceptances, rose noticeably. In the US they were up by 0.25 percentage points for terms of 90 days (Graph 5).

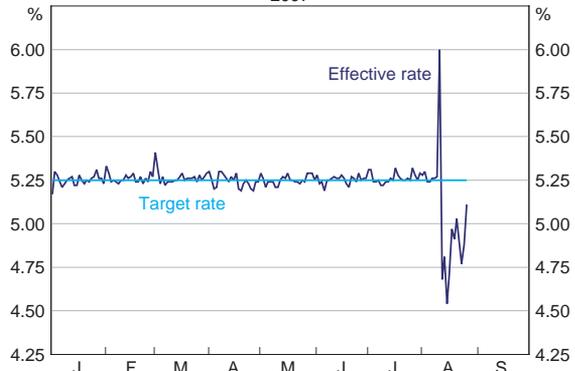
Yields on asset-backed commercial paper, which as noted had been at the same level as the fed funds rate for much of the past year, rose even more sharply, by about 60 basis points (Graph 6). More importantly, activity in this market dried up sharply, the effect being that for a time funding was not available at any price.

Yields on US treasury bills fell by almost 2 percentage points, to 3.25 per cent, as investors scrambled into secure and liquid investments (Graph 7).

There were also spillovers to other markets, including sharp falls in share prices, particularly for financial stocks, and some significant re-adjustment of exchange rates (Graph 8). These were all symptoms of rising risk aversion.

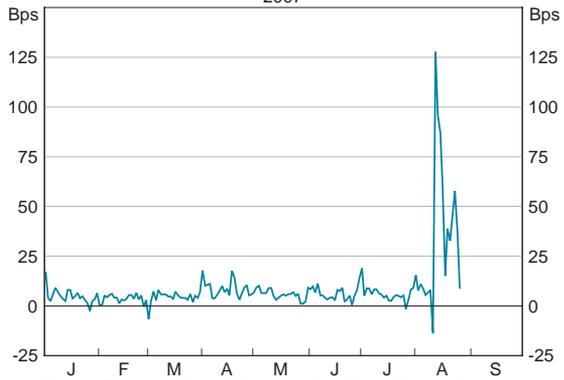
Central banks responded to this by sharply increasing the amount of funds supplied to their banks in the money market. Among the developed economies, the European Central Bank, the US Fed, the Bank of Japan, the Bank of Canada, the Swiss National Bank, the Norges Bank, the Reserve Bank of New Zealand, as well as ourselves here in Australia, all did so to varying degrees. Some also took other measures. The Fed, for example, cut the penalty rate on its discount window from 100 points

**Graph 3**  
**US Federal Funds Rates**  
2007



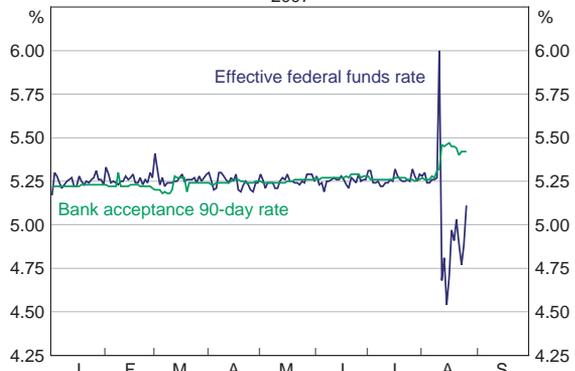
Sources: Bloomberg; Board of Governors of the Federal Reserve System

**Graph 4**  
**Spread Between US\$ Overnight LIBOR and Fed Funds**  
2007



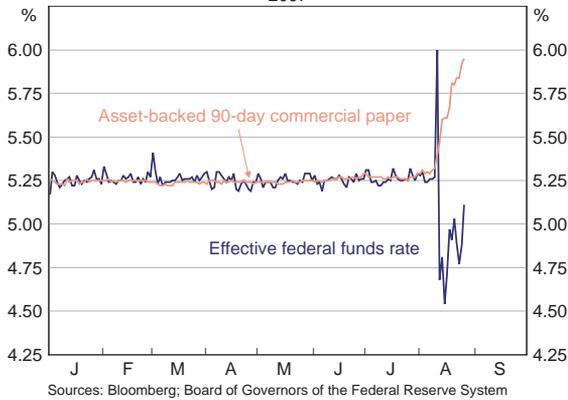
Sources: Bloomberg; Board of Governors of the Federal Reserve System

**Graph 5**  
**US Money Market Interest Rates**  
2007

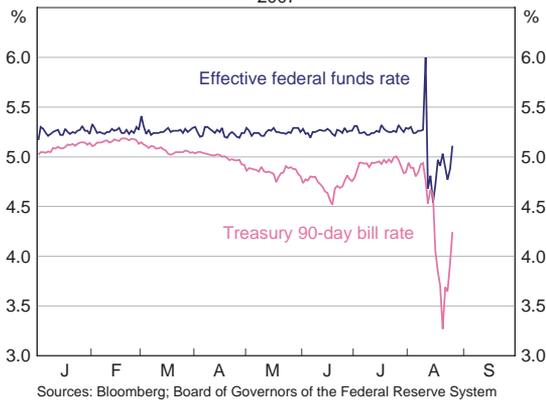


Sources: Bloomberg; Board of Governors of the Federal Reserve System

**Graph 6**  
**US Money Market Interest Rates**  
 2007



**Graph 7**  
**US Money Market Interest Rates**  
 2007



**Graph 8**  
**MSCI World Share Price Indices**  
 Local currencies, 2 January 2006 = 100



to 50 points in order to lessen the cost of emergency funding to banks. Some central banks also widened the range of securities in which they were prepared to deal.

None of these measures was intended as a change in monetary policy settings and no central bank has reduced its interest rate target. Neither should these measures be seen as an attempt to ‘bail out’ banks or markets. Rather, the measures have been technical operations aimed at breaking up the log jams in money markets and encouraging funds to flow again, in order to prevent monetary conditions becoming tighter than the settings that had been determined by the central bank monetary policy committees and boards in the various countries.

The operations have restored some degree of calm to markets but conditions have not yet returned to normal. Notably, yields on asset-backed commercial paper as yet have not fallen, indicating a continuing high degree of nervousness among investors.

Yields on US treasury bills have reversed some of their earlier fall, but still remain unusually low, again indicating a continuing strong risk aversion among investors. On the other hand, share markets in many countries have recovered strongly and some of the earlier exchange rate moves have also been largely reversed.

## The Australian Situation

Despite the fact that Australian banks are in very sound condition and have been experiencing minimal credit losses, they were nonetheless affected by the spread of the global money market turmoil. On the morning of 10 August, banks started telling us that they were noticing a reduced flow of funds through the market. The cost of raising funds in global markets through swaps had risen noticeably, putting more pressure on domestic funding sources. Yields on banks bills had jumped sharply overnight, and LIBOR rates by even more (Graph 9).

The Reserve Bank decided to supply more than the usual \$700–800 million of exchange settlement funds, so that the overnight interest rate would not rise above the target set by the Board in early August. Those operations were successful in maintaining the cash rate at the 6.5 per cent target, though other short-term market interest rates remained unusually elevated.

Since then, the Bank has continued to supply whatever amounts of exchange settlement balances were necessary to keep the cash rate at the target. In the process, balances rose to a peak of \$5.5 billion in the middle of last week, the highest level for some years, though some of this has been reversed recently. The Bank also skewed its market operations more towards bank bills, rather than government securities, to enhance confidence in the liquidity of highly-rated instruments in the bill market.

The proportion of the Bank's operations undertaken in bank bills has risen to around 80 per cent, well above the usual 30 per cent share.

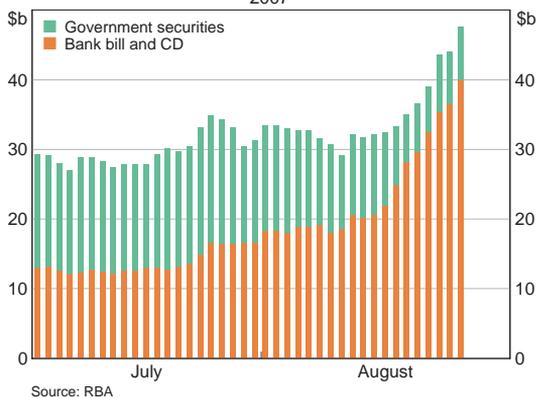
This has lifted the Bank's domestic bill repo book from a little over \$18 billion at the start of August to around \$40 billion today (Graph 10). The term of repos has also been lengthened appreciably, from the usual average of around 20 days to over 100 days, to provide greater certainty of funding (Graph 11).

These operations have held the cash rate at the target, and helped to stabilise market conditions more generally. Nonetheless, some pressures remain. Yields in the bill market remain

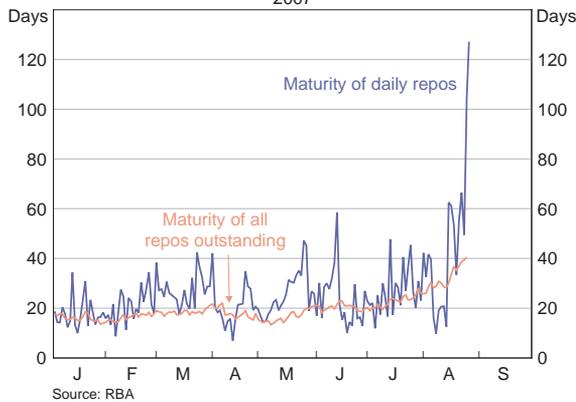
**Graph 9**  
**Australian Short-term Interest Rates**  
2007



**Graph 10**  
**RBA A\$ Repo Book**  
2007



**Graph 11**  
**Term of RBA Repos**  
 2007



The Bank will continue to monitor the situation carefully. If market developments warrant, the Bank has scope to further expand the provision of liquidity. These matters are being kept under review. ↗

somewhat higher than usual relative to the cash rate, and yields on asset-backed commercial paper even more so. The volume of securities issued has fallen, and the maturities have shortened. Banks have switched some of the funding of their conduits from the asset-backed commercial paper to on-balance-sheet, where it is supported by the banks' capital. This seems appropriate.

In recent days, there have been some encouraging signs of improvement in markets, both here in Australia and overseas.