

The Financial Implications of the Reserve Bank's Monetary Policy Operations

This article, which was prepared by David Wilson, shows how the Reserve Bank's monetary policy operations can be identified as business centres, and how they affect the Bank's expenditures, revenues and profit.

The Reserve Bank's annual accounts identify the income from and the expenditure on, the Bank's domestic financial assets and liabilities. However, the level of aggregation in the accounts means that little information is given about the financial implications of the range of market operations that the Bank conducts for monetary policy purposes. The purpose of this article is to explain how various components of the Bank's monetary policy implementation regime impact on the Bank's income and expenditure, and in particular, the contributions they make to the Bank's profit.

The Bank necessarily exercises monopoly power in order to give it effective monetary control. Monopoly power, in this context, involves the Bank wielding control over access to the liquidity that the wider economy requires in order to support economic activity. At its most basic, the supply of currency is determined by the Bank; the Bank's income from the monopoly issue of currency is seigniorage.¹ In practice, monetary policy exerts control over currency issue indirectly, via a range of monetary policy operations involving transactions in a variety of financial instruments. In each of these operations, the Bank increases or decreases available liquidity, from the standpoint of a monopoly supplier of that liquidity.

Just as currency issue generates seigniorage income, monetary policy operations generate income. The objective of the Bank's monetary policy operations framework is obviously not to maximise profits, but to deliver desired inflation outcomes in an efficient manner. One aspect of the efficiency objective is that the Bank should, in the course of its operations, impose as few distortions on the financial system as possible, consistent with retaining monetary control. From this perspective, to a point, lower profits from monetary policy operations can be more desirable than high profits, because such 'excess' profits might be considered a tax on the financial system (a tax that is likely to be relatively inefficient within the spectrum of government revenue raising alternatives).

¹ See article entitled "Accounting for the Reserve Bank's Domestic Bond Portfolio", *Reserve Bank Bulletin*, December 1992 pp 334-340.

The Monetary Policy Implementation Business Centres

In order to monitor the costs imposed on the banking system in implementing monetary policy and to identify any costs to the Bank, each monetary policy operation has been identified as a separate 'business centre'. The revenues, expenses and profits of each centre are recorded and monitored.

The Bank's monetary policy operation can be split into three main business centres:

1. Provision of settlement accounts.
2. The sale, discounting, and resale of Reserve Bank bills.
3. Liquidity management.

The remainder of this article explains how each business fits into the monetary policy framework, and how their revenues and expenses, and hence their profits are calculated. The profit figures shown in this article are illustrative of the magnitudes of the profits that can be expected given current monetary policy settings. They are not actual outcomes or forecasts.

Settlement Accounts

The targeted amount of cash in the bank's settlement accounts with the Reserve Bank is a key monetary policy lever. The Bank can tighten, or loosen, monetary conditions by decreasing or increasing the expected balances in the settlement accounts.

Currently the Reserve Bank pays a return of 3 percentage points below the interbank overnight rate for individual bank balances up to \$20 million, and nothing on balances above that amount. On the revenue side, an income can be imputed to the settlement account business by calculating what would happen to the Bank's revenues if the settlement account balances were changed. For example, if settlement cash fell, the Government's settlement account, the Crown Settlement Account, or (CSA) balance would increase, and the Bank would either pay more interest on positive CSA balances, or receive less income from negative CSA balances. The imputed earnings rate for the settlement account business is therefore the CSA rate, which in turn is set off short term interbank market rates, with a small adjustment for the superior credit of the Treasury and the Reserve Bank. Roughly, the profit on the settlement account balances is given by the average level of balances in the accounts and the 3 percent margin between the CSA rate and the rate on settlement balances up to \$20 million. While the Bank would make a larger profit on individual bank balances of over \$20 million, additional profits from this source is very low. The reason is that a bank with a large positive balance has an incentive to on-lend the amount above \$20 million to settlement banks whose balances are below \$20 million, rather than receive a zero return.

Although the cash target was set at \$20 million for most of the last year, actual settlement account balances over the period averaged around \$10 million. The reason for this lower balance is that the below-market rate of interest on settlement account balances gives the banks an incentive to under-subscribe the float tender (see below), in order to minimise

their settlement account balances. This does not affect the monetary policy impact of the cash target setting, as the probability of discounting is unchanged, but it does reduce the Bank's profit to about \$300,000. As this profit is the only compensation the Reserve Bank receives for the provision of settlement bank services, it is apparent that little if any monetary policy 'tax' is exacted through the settlement accounts.

Reserve Bank Bills

The Reserve Bank can influence monetary conditions by: altering the amount of Reserve Bank bills offered in tenders; changing the terms on which it will discount these bills; and deciding whether or not to re-offer discounted bills back to the market. The Reserve Bank bill 'business centre' has three sub-sectors: tendering, discounting, and the resale of discounted bills.

(a) Reserve Bank Bill tenders

When the Reserve Bank offers to issue \$70 million of Reserve Bank bills in each of its twice weekly tenders the proceeds are invested with the Treasury in a Reserve Bank bill counterpart account. These deposits have the same maturity as the Reserve Bank bill and the Bank receives an interest rate comparable to a Treasury bill rate. The profit on the sale of Reserve Bank bills is, therefore, determined by the difference between Treasury bill yields and the average yield on Reserve Bank bills. This margin will depend on the demand for Reserve Bank bills, as a discountable asset, relative to its fixed supply, and has varied considerably in the past depending on the banks' perception of monetary conditions, and the degree of the friction in interbank cash market. More recently, however, the demand for bills has fallen (to the extent that tenders are frequently under-subscribed) and the average margin is now about 3-4 basis points. This implies a profit to the Bank, of \$300,000 to \$500,000 per year.

(b) Discounting of Reserve Bank Bills

When Reserve Bank bills reach 28 days, or less, to maturity they can be sold on demand to the Reserve Bank. The Bank, however, charges a margin (currently 90 basis points) above market rates for any Reserve Bank bills that are discounted. It can tighten or loosen monetary conditions by increasing or decreasing this margin.

Discounting can occur for many reasons but the three major causes are: forecast error in open market operations, float tender under-subscription, and voluntary discounting. Under current monetary policy settings the Bank expects that discounting, due to errors in the forecasts of the flows on which open market operations are based, will occur roughly every 10-15 days. Discounting due to float tender under-subscription occurs because banks make errors in establishing their positions before the float tender. If they do not bid for enough cash in the float tender they may have to discount in order to maintain a positive balance in their settlement accounts. Voluntary discounting can occur when a bank seeks to influence monetary conditions by discounting to leave the system with more cash, or if a bank wishes to avoid borrowing from another in the interbank settlement market.

When discounting occurs the Bank makes a profit which will depend on the size of the discount margin and the terms to maturity of the discounted bill. For example, if \$20 million of 3 day bills were discounted at a 90 basis point margin the Bank would make a profit of \$1500.

The Reserve Bank's profit from discounting will fluctuate considerably from year to year depending on the number of relatively infrequent large forecast errors and the degree of interbank 'friction', but is unlikely to be much more than \$200,000 per year.

(c) Resale of Reserve Bank Bills

When Reserve Bank bills with greater than 1 day to maturity are discounted the Bank will usually offer these back to the market to keep the level of primary liquidity constant. The effect of offering bills is to reduce the Crown Account balance, hence the imputed interest rate from the sale is the CSA interest rate. The margin between the CSA rate and yields paid on the re-offered bill, is often relatively wide. Because the bills are immediately discountable, successful bids of 50-60 points below market yields are common. However, given the relatively low volumes of bills re-offered, and their short maturities, the absolute level of profits is low. In a typical year it would be unlikely to exceed \$30,000.

Liquidity Management

The purpose of the Bank's liquidity management operations, which comprise the daily open market operations and revenue float tender, is to ensure that liquidity conditions are consistent with the desired monetary policy stance.

(a) Open Market Operations

In its daily open market operations the Bank either withdraws cash, by selling Treasury bills when the system is forecast to have excess liquidity, or injects cash, by advancing secured loans, when the system is forecast to be short. The Treasury bill sales have no financial implications for the Bank, as the Bank is effectively acting as an agent for the Treasury when issuing bills in open market operations.

When secured loans are made to the banking system, however, the loans remain on the Bank's books and are funded by changes in the CSA balance. The interest rate on the CSA is set to approximate the expected return on the Bank's secured loans so that this business breaks even over time. However, because the level of secured loans outstanding averages \$300-\$400 million, even very small differences in the average rate received and the CSA rate, can result in profits, or losses, of \$100,000 or more in a particular quarter.

Revenue Float Tender

Each day the government revenue flows are banked directly into the Crown Settlement Account. As these flows are large and unpredictable, the Bank does not offset them through the daily open market operations, because it cannot be sure that its forecasts will be accurate enough to keep liquidity conditions reasonably stable. Instead, once the revenue flows are known on the morning following a given business day, the Bank offers to lend the revenue flow back to the settlement banks (for value on that business day) through the revenue float tender.

On average the Bank lends about \$120 million a day and the average rate the Bank receives on those advances is very close to the interbank overnight rate. The cost of funds for the float tender is the CSA rate, which is slightly lower than the interbank overnight rate, and in a normal year the Bank would expect to make a profit of \$20,000 to \$50,000.

Table 1

Typical annual profits assuming March 1993 monetary policy settings

	\$
Settlement Account Balances	250,000 - 350,000
Reserve Bank Bills	
Profit on issue	300,000 - 400,000
Discounting	75,000 - 200,000
Re-issues	15,000 - 25,000
Liquidity Management	
Open market operations	nil
Revenue Float Tender	20,000 - 50,000
TOTAL	<hr/> 700,000 - 1,000,000

Summary

By separating its domestic market operations into separate business centres, the Bank is able to calculate its gross profit from various operations associated with implementing monetary policy. As the summary table shows, the Bank's profit, and hence any associated tax on the banking system, can normally be expected to be quite small, particularly when compared with the size of the financial system.