LIQUIDITY MANAGEMENT POLICY

Introduction

On 21 December 1984, the Reserve Bank announced details of new liquidity management arrangements. These involved the introduction of a tender system for the sale of Treasury bills; the payment of interest on settlement balances at the Reserve Bank; changes in the Bank's approach to open market operations and to discounting of government securities; and the abolition of the compensatory deposit scheme after March 1985. (Details of the announcement were included in the January 1985 *Bulletin*, p.14.).

This article describes the background to these decisions and sets out the Bank's view of the rationale for the new approach. Details of the Bank's liquidity management operations will be discussed regularly in future in the quarterly *Bulletin* articles on monetary conditions.

The Role of Liquidity Management Policy

The essential role of liquidity management policy is to enable the financial system and, in particular, the short end of the market including the settlement process, to function in an orderly manner which is consistent with monetary policy objectives. While liquidity management arrangements can be presented as a relatively self-contained package, the design, operation and interpretation of such a package involve consideration of all aspects of the role of the monetary authorities. For example, the nature of monetary policy objectives, the techniques chosen to achieve these objectives, the role of the Reserve Bank in safeguarding the integrity and operations of the financial system generally, are all important factors which will affect, and be affected by, the choice of liquidity management arrangements. Moreover, the overall framework for monetary control needs to be able to cope with uncertainties about economic and financial developments and also be flexible enough to accommodate shifts in the balance among the various economic objectives over time, without requiring substantial changes to the operating methods.

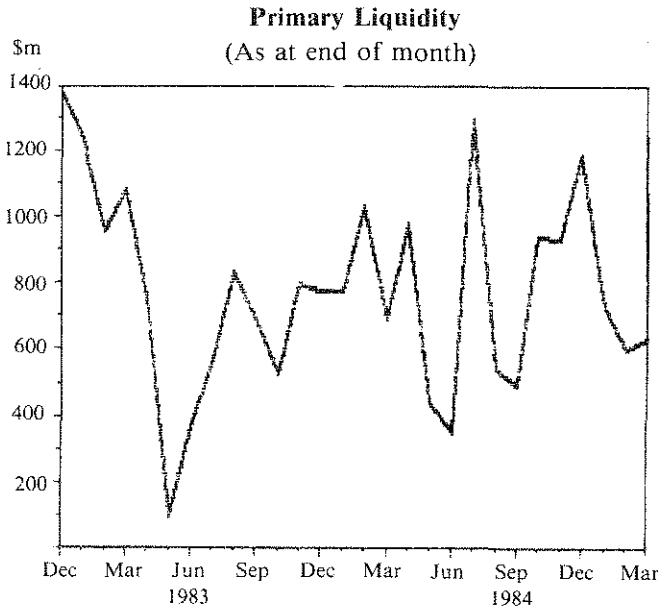
Primary Liquidity

Liquidity management activity is concerned most directly with the management of the 'primary' liquidity (or 'monetary base') of the financial system. There is no single 'correct' definition of primary liquidity. In principle, it should consist of all those assets which can be used at will by the private sector to settle debts with the Reserve Bank arising from private sector transactions with the Government or the Bank itself.

The Bank is currently using a pragmatic definition of primary liquidity which is an approximation of 'financial system liquidity', rather than 'private sector liquidity'. In particular, accounts at the Reserve Bank from non-financial institutions, and non-institutional liquid claims on Government (such as Kiwi Stock) are excluded from the definition, on the basis that they are not *directly* available to the financial institutions for settlement purposes. The view has been taken also that the effective liquidity of bank notes is rather low for most practical purposes — the institutions normally maintain an inventory of notes determined by their customers' requirements and do not hold them for the purpose of settlement with the Reserve Bank. On the other hand, all private sector holdings of Treasury bills, and government stock with less than six months to maturity, are included in the definition. At present, the Bank will purchase on demand (through its discount window) all such securities at a margin of 1 per cent above market yields. Thus, they are all cashable, although at a discount penalty which effectively increases with the maturity of the security. Since December 1984, government securities with more than six months remaining to maturity have not been discountable on demand.

The primary liquidity definition currently in use for operational purposes therefore consists of trading bank demand deposits at the Reserve Bank and private sector holdings of government securities (both stock and Treasury bills) with less than six months to maturity. Work is underway to review the appropriateness of this definition, and this will be the subject of a later *Bulletin* note. The Bank will also commence publication of primary liquidity data when this review is complete.

While a convenient primary liquidity definition is required at this stage for operational purposes, the choice of a monetary base definition for monetary



control purposes in the medium term is essentially an empirical matter, involving scrutiny of which of the available base indicators has the closest and most stable relationship with broader monetary objectives and indicators such as the various money supply and credit aggregates and interest rates. It is likely to be some time before these relationships can be reliably assessed under the new operating arrangements for monetary policy.

To some extent, however, the use of a single aggregate indicator of liquidity conditions would always need to be treated with caution. In practice, a spectrum of liquidity is available, and pressure points of excess or deficiency, with corresponding behavioural responses, can appear at any point on the spectrum. The authorities need to be concerned not only with the level of primary liquidity but also with its structure (in terms of both asset-type and maturity).

Finally, it should be noted that the primary liquidity definition includes only domestic assets. Under the previous fixed exchange rate system, the Reserve Bank stood ready to buy and sell foreign exchange on demand (subject to the normal two-day settlement delay). Institutions with liquid offshore funds could therefore have regarded these as a form of primary liquidity. Under the floating exchange rate system, the Bank will no longer buy or sell foreign exchange on demand, so that this potential source of domestic liquidity is no longer available to the institutions. On the other hand, the closure of the Bank's foreign exchange window also means that the institutions are now less exposed to fluctuations in their domestic liquidity position which used to arise from fluctuations in the external accounts. The float is therefore likely to have caused a shift in the demand for 'domestic' primary liquidity, although it is not possible to quantify this effect.

Sources of Variation in Liquidity

Primary liquidity consists of Government and Reserve Bank liabilities, and therefore can change only as a result of private sector transactions with the Government or the Reserve Bank. The main classes of transactions are the budget items (tax and expenditure), Government domestic borrowing transactions, and Reserve Bank market operations.

Monetary policy is now being conducted on the basis of virtually fully funding (through borrowing) the net Government and Reserve Bank injection to the monetary base. In other words, the policy approach implies that the level of primary liquidity will be kept fairly stable. However, in practice the liquidity position will still show changes of a seasonal or temporary nature some of which will be sizeable. Government transactions can fluctuate widely on a day to day basis because of the lumpiness of individual transactions. For example, there is an obvious seasonal pattern to liquidity arising from the seasonality of tax collection arrangements. Some of these influences are difficult to predict given the present state of the Bank's information systems.

Monetary Control

The current monetary policy strategy will be discussed in detail in a further article in a later *Bulletin*. The main operational aim has already been mentioned — i.e. the intention to virtually fully fund through domestic borrowing the net public sector liquidity injection. Essentially, this aim amounts to keeping the level of primary liquidity (or the monetary base) fairly stable. This is seen as a necessary condition for monetary control in the medium term. The level of base liquid reserves of the institutions effectively imposes a constraint (although not necessarily a rigorous one in the short-term) on the extent to which the balance sheets of the institutions, and thus money and credit aggregates, can grow.

The general aims of liquidity management policy which are consistent with this approach to monetary control are qualitatively clear. The various instruments of policy should be used in such a way that the institutions are reasonably responsive to permanent changes in their liquid reserve position, but are not unduly sensitive to more random day-to-day, or seasonal, fluctuations in their position.

In practice, however, it is not always easy for the authorities and the individual institutions to distinguish immediately permanent shifts from shorter-term fluctuations. The policy arrangements have to allow for this uncertainty in an appropriate way. The implication is that if the authorities were to adopt a short-term stabilisation role in the money markets it should ideally enable 'signals' to be readily distinguished from 'noise' in the system.

However, the choice of an operating strategy for liquidity management and the setting of monetary policy objectives are not independent. The longer-run private sector demand for primary liquidity will be determined by a number of factors, including:

— the institutions' assessment of their likely settlement requirements with the Reserve Bank in the period ahead;

— the likely cost of purchasing additional primary liquidity, from either other institutions or the Reserve Bank;

— the rate of return on primary liquidity.

The nature of the interplay between these forces will be important in determining the policy significance of primary liquidity. For example, if the rate of return on primary liquidity is comparable to the yield on other (private sector) investments, and if the costs of obtaining additional liquidity are low, then institutions could be expected to be relatively indifferent to their liquid position, and to be rather slow to adjust their lending behaviour in response to changes in it. In this case, the level of primary liquidity would not have much policy significance. On the other hand, if the rate of return on liquidity is low, but the cost of obtaining additional liquidity is high, then the institutions could be very sensitive to fluctuations in their liquidity position. In this situation, the control of primary liquidity should have a more important effect on institutional behaviour, and thus on monetary and credit conditions.

At this stage, there is no simple way to determine the point between these extremes which is most appropriate for policy purposes, particularly given the recent sharp fluctuations in monetary conditions, and the major changes in the institutional environment and the approach to policy which have occurred in the last year. Appropriate allowance has to be made for the transition from the previous system to the new one.

The Settlement Process

The primary liquidity concept, measures the amount of money available to the private sector for the settlement of transactions with the Reserve Bank. Such settlements occur at the end of each day (in fact, the following morning when Databank processing is complete), and can be in either direction. For example, when people pay tax, the cheques are effectively credited to the Public Account at the Reserve Bank and the Reserve Bank accounts of the banks on which the cheques are drawn are debited accordingly. If the cash balances of the banks are insufficient, they must be funded by the immediate sale of some asset, usually Treasury bills, to the Reserve Bank through the discount window. Similarly, when the Government spends money, the cheque (drawn on the Public Account) is deposited in a private bank, presented to the Reserve Bank for payment, and the Reserve Bank account of the presenting bank is credited accordingly. If the banks are left with excess 'cash' in their Reserve Bank accounts, they may use the funds obtained to purchase government securities if they have any unsettled successful bids from stock or bill tenders.

The points of significance arising from these arrangements are:

— at the end of each day, the authorities must provide sufficient 'cash' for settlement purposes. The only issue is the price at which it is provided. In other words, at the end of each day, the Reserve Bank is the only resort for settling institutions;

— any transactions between the private sector and the Government or the Reserve Bank affect the liquidity position of the institutions which carry out the settlement function with the Reserve Bank, i.e. the four trading banks and the Post Office Savings Bank, whether or not these institutions were a party to the originating transaction. Other institutions may or may not be directly affected.

Effects of Changes in Liquidity

The level of liquidity may fall to a low level for a number of reasons. First, the stock tender policy stance adopted by the authorities may be firmer than expected because of a divergence between forecasts of future liquidity flows and actual flows. These divergences may involve timing only, or may arise from unexpected 'trend' changes in the underlying determinants of liquidity, such as the budget deficit. In the latter case, a revision to the debt programme itself may be warranted. But, in both cases, some offsetting open-market operation action may be required in the short-term. Without it, interest rates may move for a time in a way which is not consistent with monetary policy goals, and behaviour would be affected accordingly.

Secondly, liquidity can fall when a deliberate attempt is made by the authorities to bring pressure to bear on the institutions, but the institutions do not respond in the desired way. For example, the level of debt sales may be deliberately pitched at a level which would have the immediate effect of reducing the level of liquidity in order to induce the institutions to slow their lending. If the institutions do not respond to the tighter position in this way, or are slow to respond, then any resulting liquidity shortfall might need to be accommodated by the Reserve Bank, but probably at a relatively high price in order to reinforce the original intention of the policy, and further promote the desired adjustment process. Interest rate increases would normally be an integral part of this process.

To generalise, most conventional monetary policy operations will have a direct effect on primary liquidity. But whether liquidity management policy itself should reinforce this effect, or offset it, may depend on the source of monetary disturbance, the policy response selected, and the institutional framework in place. It is probably not feasible to establish a set of operating rules for liquidity management which would be appropriate for monetary control in all circumstances. Indeed, no country has felt able to adopt a completely mechanical approach to liquidity management.

Competitive Neutrality

As well as helping to achieve monetary policy objectives and facilitating the settlement process, liquidity management operations need to be carried out in a way which promotes efficiency in the financial system. The Bank believes that efficiency is best promoted through market competition, where the various participants are on equal terms and where restrictions on entry to the market are minimal.

There are two main areas of application of this 'competitive neutrality' principle within the liquidity management area. First, there is the question of which institutions should have rights of access to the Reserve Bank (through deposit accounts, discount window, lending facilities, and dealing relationships). A number of considerations, to some extent conflicting, need to be taken into account in deciding access questions:

— restricted access may involve giving monopoly privileges, and would thus be inconsistent with the 'competitive neutrality' objective;

— restricted access may also involve the granting of a de facto 'status' in the eyes of the public which is unintended and undesirable especially if it is not matched by higher prudential standards;

— open access implies that the Bank should be prepared to deal with anyone, which can be operationally difficult at times, and requires that greater care be taken to ensure that other parties are capable of 'delivering' on transactions;

— open access may also be seen by some to inhibit market development to some extent if it reduces incentives for the development of specialist intermediaries in the government securities or settlement funds markets;

— restricted access can also inhibit market development, however, if there are not enough participants, or sufficient diversity of participants, to 'make' a particular market.

The general position taken by the Bank has been that any advantages of having restricted access are likely to be significantly outweighed by the disadvantages. Accordingly, a general policy of open access to the Reserve Bank has been preferred. For essentially practical reasons, access to the discount window and to a dealing relationship have been restricted to some extent by the application of minimum transaction sizes. These restrictions impose a necessary degree of operational limitation on access, without creating any unwarranted privileges or monopolies. They may also provide some incentive for a degree of specialisation and market-making to develop.

The other area of application of 'competitive neutrality' is in the conduct of open market operations. The Bank holds the view that wherever market interventions are undertaken, they should as far as possible be conducted on a fully competitive basis. The Bank's purchases and sales of securities therefore involve a competitive bidding technique, with open participation. Exceptions to this policy may occur but they are likely to be rare.

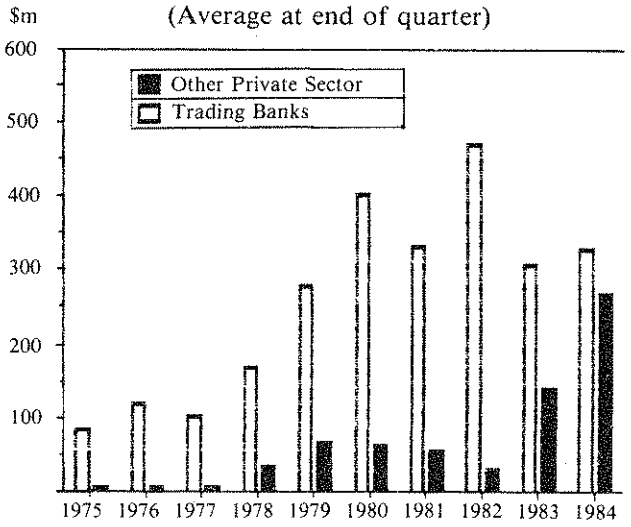
Past Liquidity Management Arrangements

A table at the end of this article compares the various elements of past liquidity management arrangements with the new arrangements. The previous arrangements as set out in that table had the following results:

(a) The trading banks generally kept cash balances in their settlement accounts to a minimum. Instead, they used Treasury bill holdings as settlement funds, buying these on days when they had a cash inflow, and discounting them on days of cash outflow. The quantity of Treasury bills on issue at any time was therefore essentially determined by the market rather than the Government.

(b) Treasury bill holdings were generally confined to the trading banks alone and no real secondary market for them existed (see graphs on short-term interest rates and Treasury bill holdings).

Holdings of Treasury Bills
(Average at end of quarter)

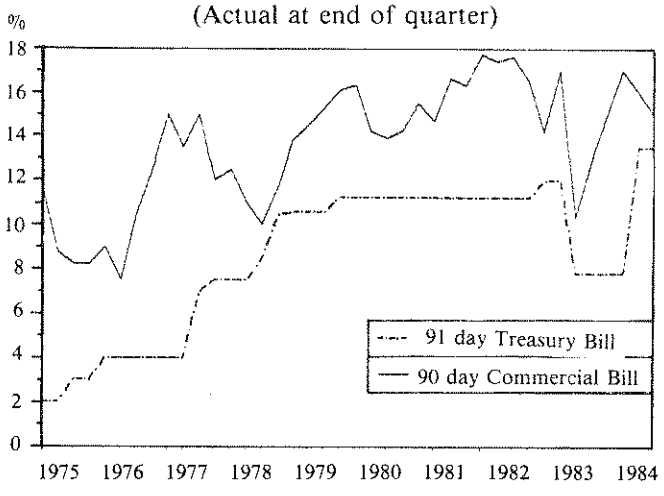


(c) The discount window effectively assumed a multiple role — it was not just a 'last resort' window, but also a settlement window which had to cope with daily liquidity fluctuations. Pricing of the discount window represented something of a compromise between those roles.

(d) This 'compromise' pricing and the fact that often all government securities (not just short-term ones) were discountable, meant that the discount window was relatively open. This implied, in turn, that the impact of monetary policy was at times weakened by the potential for the private sector to monetise holdings of government securities.

(e) The combination of an open foreign exchange window and a relatively open discount window meant that the Bank had only limited control over domestic liquidity conditions.

Short-Term Interest Rates
(Actual at end of quarter)



(f) Monetary policy operations could have no effect on short-term Government security yields, since both buying and selling rates were administered (rather than being market determined) and were changed infrequently.

(g) The only practical ways for the Bank to attempt to influence liquidity conditions were through changing the debt sales programme or by entering the commercial bill market, which was much larger and more active than the Treasury bill market, and one where yields were generally unconstrained.

(h) The various institutional arrangements effectively led to a number of implicit penalties, subsidies and distortions across institutional types. These distortions were probably all costly in terms of efficiency.

The New Arrangements

The inter-related strands described above suggest a need for a range of liquidity management tools, involving both discretionary elements and 'as of right' elements; and involving transactions both at market prices and at penal prices, depending on the circumstances. A liquidity management package must be sufficiently flexible to accommodate the pursuit of a range of objectives and to operate within an overall framework which is efficient and well understood by both the Bank and the market participants.

However, flexibility needs to be matched by a reasonable degree of stability in the conduct of liquidity management operations. Securing a desired behavioural response from the private sector requires that the 'rules of the game' be clear and well understood by the institutions, so that they are well aware of the possible consequences of their actions when they take decisions. This process of building up mutual understanding will clearly take time.

The review of liquidity management policy which has occurred since July 1984 has therefore blended a number of inter-related aims, including the following:

(a) to be able to manage liquidity more actively and thus ensure consistency with monetary policy objectives (i.e. to ensure that monetary policy objectives are not undermined by liquidity management operations);

(b) to shift the balance towards greater control over intervention quantities, and less direct influence on the prices (or interest rates). However, interest rates will always have a role as an indicator of money market conditions;

(c) to try to ensure that intervention prices (dealing rates, discount rates, interest on cash) do not involve any unintended penalty or subsidy elements;

(d) to enable the greater use of Treasury bills for deficit funding and Government cash management purposes, rather than as 'bankers cash', and to promote a more active secondary market in Treasury bills;

(e) to ensure that any rights of 'last resort' recourse to the Bank are priced in a way which ensures that they are indeed a last resort;

(f) to achieve these objectives through means which give reasonable stability. Monetary policy signals should be transmitted more efficiently through 'orderly' markets than through markets characterised by considerable volatility.

These aims led to a package which involves the following elements:

(a) the introduction of a Treasury bill tender system;

(b) closing the discount window for government securities with more than six months to maturity;

(c) more active use of open market operations on a daily basis at market interest rates, in order to smooth daily liquidity or interest rate fluctuations;

(d) paying interest, initially at 5 per cent, on cash balances held by the clearing institutions at the Reserve Bank, in order to provide an additional 'buffer' against fluctuations and errors;

(e) the abolition of the compensatory deposits scheme after the March 1985 tax period. Future seasonal fluctuations will be handled within the general liquidity management framework.

The 'float' of the New Zealand dollar, which came after implementation of the liquidity management package itself, is perhaps the most important single change in this area, in the sense that 'on demand' access to the foreign exchange window is no longer available. The Bank will continue to operate in the foreign exchange market to obtain the Government's overseas current account requirements and, if necessary, to moderate excessive volatility in the exchange rate. However, any such operations are included in the Government/Reserve Bank liquidity influences and therefore will be financed through domestic borrowing transactions. Thus, Reserve Bank foreign exchange dealings should have a timing influence only on domestic primary liquidity.

Broadly, the new arrangements are expected to operate as follows:

(a) the trend level of primary liquidity, or some close variant of the present definition, will be controlled through the approach of virtually fully funding the Government/Reserve Bank liquidity injection through ongoing Government stock tenders. Now that the foreign exchange window and the discount window for longer dated government stock are closed, the trend level of primary liquidity should be firmly controllable in this way;

(b) seasonal fluctuations in Government flows, which will be increased by the abolition of the compensatory deposit scheme, will be handled in several ways. First, it is intended that the stock tender programme itself will be 'seasonal' to some extent. Periods of large Government injection will usually also be periods of larger stock sales, and vice versa. This should reduce the extent of seasonal

variation in primary liquidity. Secondly, the Reserve Bank may elect to deal (at its discretion) in government securities with more than six months to maturity through open market operations if it becomes apparent that greater seasonal stability in the level of primary liquidity would be desirable. Thirdly, the amounts and maturities of Treasury bills which are offered in weekly tenders will substantially reflect the expected timing of known seasonal liquidity changes;

(c) shorter term fluctuations in liquidity conditions will also be handled, to the extent that they can be predicted, through the setting of Treasury bill tender amounts and maturities;

(d) finally, on any day, there can be errors in the forecast liquidity influences which have not been accommodated through the operations described so far. When these are of significant size or if short-term interest rates suggest strong uncertainty in the market place the Bank may decide to deal in the short-term market, through open market operations, to inject or withdraw cash.

Conclusion

The design of liquidity management arrangements has required consideration of a wide variety of objectives and techniques, which are complex and inter-related. The package which has now been implemented represents the results of an attempt to examine these issues in a comprehensive and integrated manner. Nevertheless, it has been necessary to strike a balance between competing objectives in some cases, and experience may suggest a need for some revision in due course.

This article has been concerned mainly with the operation of liquidity management arrangements in a settled environment. In fact, of course, the package was implemented as part of a rapid and radical process of financial deregulation, and at a time of very large fluctuations in domestic liquidity, due mainly to foreign exchange flows. This environment led to some difficulties in transition, and in interpreting market developments. However, useful experience has been gained, and the settling-down process seems to be well underway.

SUMMARY OF RESERVE BANK DISCOUNT POLICY

Date	Eligible Institutions	Eligible Securities	Interest Rate
From 1978	Trading banks and other securities specialised dealers (previously only trading banks had access to the discount window)	All government	Selling yield + 0.5 per cent
17/ 4/80			Up to 1 year — selling yield + 0.5 per cent Over 1 year — selling yield + 0.75 per cent
23/ 7/83	Automatic access to discount window temporarily removed, other than for Treasury bills.		
17/11/83	Discount window re-opened for trading banks only under same terms as applied prior to July 1983.		
24/ 7/84	Trading banks	All government securities	Up to 6 months —selling yield + 1.0 per cent 6–12 months — market yield[2] + 1.0–1.5 per cent Over 12 months — market yield[2] + 1.5 per cent
15/ 8/84	Unrestricted	All government securities	No change
24/12/84	Unrestricted	Government securities up to 6 months	Market yield[3] + 1.0 per cent

1. A number of 'specialised dealers in government securities' were recognised in 1978 with the objective of encouraging growth in the secondary market. These dealers were given virtually exclusive right of access to the Reserve Bank's portfolio of government securities. In return, they were required to maintain a record of trading in securities and of actively participating in the development of a market for government securities. Initially, 25 companies were authorised as specialised dealers, including the five trading banks, though the number of dealers subsequently changed as new companies were added and others deleted.
2. With the move to tendering government stock in September 1983, the Bank was no longer prepared to sell government stock out of portfolio on demand and discount rates for stock were based on a market yield curve.
3. As from the introduction of Treasury bill tenders in January 1985, bills are also no longer available on demand from the Bank's portfolio.

LIQUIDITY MANAGEMENT POLICY: PAST AND PRESENT

Previous Arrangements	Current Arrangements
1. Cash Balances at Reserve Bank	
No interest paid on Reserve Bank cash. Trading banks generally held minimal working balances at Reserve Bank.	From January 1985, interest paid on trading bank balances at Reserve Bank. Interest rate initially set at 5 per cent per annum.
2. Treasury Bills	
Sold on a tap basis between 1969 and January 1985, i.e. new issue bills were available on demand at government-determined yields. Yields were adjusted infrequently and generally remained below yields on comparable market instruments.	Sold by tenders, held on a weekly basis, commencing 29 January 1985. Tender quantities and maturities determined primarily by forecast liquidity flows. Yields determined by market bids.
3. Discount Policy	
(see separate table for more details)	
With a brief exception in 1983, the Reserve Bank was generally prepared to discount government securities of any maturity for trading banks, though at a margin over selling yields which meant that the cost of discounting increased with the period to maturity of the security being discounted. Banks also had access to the Reserve Bank's portfolio of government stock, prior to the introduction to stock tenders in September 1983, and to the Bank's portfolio of Treasury bills prior to the move to Treasury bill tenders in January 1985. The selling yield curve in both cases was based primarily on the respective tap issue rates. Access to the discount window and the Reserve Bank's portfolio was also available to specialised dealers between 1978 and 1983 and to all groups from August 1984.	From late December 1984, the Reserve Bank has been prepared to discount on demand only government securities with six months or less to maturity. Access to the discount window is available to all parties although a penal margin, initially set at 1 per cent over market yields, has been retained. With all wholesale government securities now being sold by tender, there is no automatic access to the Reserve Bank's portfolio of securities.
4. Open Market Operations	
Discretionary trading in securities by the Reserve Bank usually in commercial securities and generally limited to occasional buying operations aimed at easing interest rate pressures during periods of tight liquidity.	Reserve Bank will be an active trader in the market, both as a buyer and a seller of securities. Objective is to support the Treasury bill tenders by smoothing fluctuations in liquidity and short-term interest rates.

5. Lending Facilities

A formal lender-of-last resort facility existed for the official short-term money market dealers from 1962 until September 1984, when Reserve Bank approval of the four dealers operating in that market was withdrawn.

No similar borrowing facility has been available to other financial institutions.

A penal borrowing facility was available to the trading banks as part of the reserve asset ratio scheme (1973–85). The banks were required to borrow under this facility to make up any shortfall in their reserve asset holdings relative to the ratio requirement. The borrowing had to take place in the month following the shortfall and the proceeds were deposited back with the Reserve Bank; thereby not being available as general liquidity to support on-going lending operations.

No formal lending facility is now provided for financial institutions by the Reserve Bank.

6. Seasonal Tax Flows

A compensatory deposit scheme was operated over the March and September tax collection periods from 1978 until March 1985.

Under this scheme, the Reserve Bank placed short-term deposits with the trading banks over the main tax collection periods in order to spread out the associated liquidity withdrawal over a longer period.

As from September 1985, no special facility will be operated to handle the seasonality in current tax collection methods. The seasonal pattern of government flows will be offset by varying the size and timing of the stock and bill tenders and, where necessary, by Reserve Bank open market operations.

7. Foreign Exchange Window

Prior to March 1985, the Reserve Bank stood ready to buy or sell foreign exchange on demand, at prices fixed against a basket of currencies.

As from March 1985, the Reserve Bank effectively withdrew from the foreign exchange market, apart from discretionary trading associated with meeting the Government's foreign exchange requirements on current account and minor transactions for market testing.

This means that the private sector as a whole is now unable to influence its liquidity position through foreign exchange market transactions.