

Monetary policy operating procedures in South Africa

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Introduction

The new socio-political structure in South Africa led to a need to re-integrate the economy into a rapidly changing global financial environment after a long period of increasing isolation. As a result, considerable changes were brought about in South Africa's financial system over the past five years or will be implemented in the near future.

At the centre of the South African programme for financial reform is the gradual phasing-out of exchange controls. Good progress has been made in the liberalisation of the economy in that:

- all effective exchange controls on current account transactions have been lifted;
- exchange controls on non-residents have been fully removed;
- the two-tier exchange rate system for certain capital account transactions was formally terminated in 1995;
- South African resident corporates were given permission to make direct investments within certain limits in branches and subsidiaries in foreign countries;
- South African institutional investors (insurers, pension funds and mutual funds) may now diversify up to 10 per cent of the total assets managed by them in foreign currency denominated assets; and
- South African individuals who are registered taxpayers in good standing and over the age of eighteen years are allowed to transfer limited amounts abroad or to hold foreign currency deposits with domestic authorised foreign exchange dealers; and the gold mines are now allowed to market all their gold directly and not by decree through the central bank.

Further relaxations are planned for the future which will be decided on in accordance with the circumstances at the time and will depend

particularly on the foreign liquidity position of the country and the stability in domestic and international economic conditions.

The removal of direct controls on capital movements led to a large number of foreign banks establishing branch offices and subsidiaries in the domestic market, while many South African banks extended their activities to other countries. Major changes were at the same time introduced in the operations of the South African financial markets in equities, bonds and financial derivatives, which contributed to considerable increases in the turnover in these markets. These changes also caused the participation of non-residents in the domestic financial markets to increase substantially. Non-residents are now responsible for more than half the transactions in the market for foreign exchange, nearly one-third of the turnover on the Johannesburg Stock Exchange and just over one-sixth of the volumes on the Bond Exchange.

The process of financial sector reform in South Africa is continuing. Three important changes were planned for 1998. First, a major revision of the national payment system was implemented from 9th March when the manually operated interbank settlement was replaced by a new automated system. Real-time gross settlements is to be implemented in three phases in the coming years. Secondly, new monetary policy operating procedures were introduced on 13th March because of certain inherent weaknesses in the current procedures. Finally, the Government appointed certain private banks as primary dealers in Government bonds; market-making in government bonds by these primary dealers started in April 1998.

In this paper the current and proposed changes to the monetary policy operating procedures in South Africa will be described in some detail and reference will be made to the other reforms only to the extent that they may influence the operating procedures. As a general background to the discussion, the monetary policy framework followed in South Africa is first explained in Section 2. This is followed in Section 3 by a portrayal of the previous monetary policy operating procedures and the problems experienced in the application of these procedures. Section 4 then provides a description of the new monetary policy operating procedures that were implemented in March 1998,¹ and a few concluding observations are made in Section 5.

¹ The experience with the new procedures in the first few months after their introduction is described in the Appendix to this paper.

1. The monetary policy framework

(i) Institutional arrangements and accountability

The South African Reserve bank is responsible for the formulation and implementation of monetary policy in South Africa. This responsibility of the central bank is spelled out clearly in the Constitution of the Republic of South Africa, which specifies that it is the task of the Reserve Bank to protect the value of the currency in the interest of balanced and sustainable economic growth in the country.

The Constitution further states that in the pursuit of this objective the Reserve Bank must perform its functions independently and without fear, favour or prejudice. However, it is also required that there must be regular consultations between the Reserve Bank and the Minister of Finance. In accordance with this requirement and to ensure coordination between monetary policy and broader macro-economic objectives, regular meetings are arranged at which the Reserve Bank's Governors Committee (consisting of the Governor and three deputy governors) and the Minister of Finance and senior officials from his Department discuss economic developments and policy.

The Reserve Bank is also accountable for monetary policy. In terms of Section 31 of the Reserve Bank Act, Act no 90 of 1989, the Governor of the Bank must submit each year to the Minister of Finance a report on the implementation of monetary policy, while Section 32 of the Act states that the Bank must submit each month a statement of its assets and liabilities and each year its financial statements to the Department of Finance. These annual reports and financial statements are laid upon the Table in Parliament by the Minister of Finance. In addition, the Governor of the Reserve Bank may be, and on several occasions has been, called upon to appear before the Parliamentary Portfolio Standing Committee on Finance to explain monetary policy and to answer questions on the Bank's views on financial and economic developments.

Section 37 of the Reserve Bank Act provides that if at any time the Minister of Finance is of the opinion that the Bank has failed to comply with any provision of the Act or of a regulation made thereunder, he may by notice in writing require the Board of the Bank to make good or remedy the default within a specified time. If the Board fails to comply with such a notice, the Minister may apply to the Supreme Court for an

order compelling the Board to make good or remedy the default, and the Court may make such order thereon as it thinks fit.

(ii) The objectives of monetary policy

In line with the stipulation in the Constitution, the ultimate objective of monetary policy in South Africa is to establish a stable financial environment in support of sustainable real economic growth over the medium and long term. Although financial stability does not guarantee that the real economy will perform at maximum capacity, the Reserve Bank believes that it is an important precondition for the attainment of the economic growth potential. In the end, many other economic as well as non-economic factors will of course determine the actual economic growth performance. Instability in the financial sector will, however, inevitably be detrimental for economic growth.

A low inflation rate, or rather a rate that has no material effects on the macroeconomic decisions of consumers, investors, traders, producers and all other participants in total economic activity, is normally regarded as synonymous with stable financial conditions. In other words, financial stability is obtained when people are not concerned about the rate of inflation or any systemic risks in the financial sector when important economic decisions are made. If these preconditions do not exist, the unstable financial conditions are an important if not overbearing stumbling block in the way of high and sustainable economic growth.

To give greater assurance to economic decision-makers about the stance of monetary policy and underlying financial conditions, a number of countries in the 1990s began to apply inflation targeting as their monetary policy strategy where a precommitment to an explicit quantitative inflation target is made. This monetary policy strategy is primarily motivated by the desire to provide an anchor for monetary policy that can serve as an effective co-ordination device for the setting of prices of final products, production factors and financial assets.

South Africa has not opted for this approach because of the difficulties that are experienced in controlling the inflation rate. Many exogenous supply shocks or changes in other government policies result in price changes over which a central bank has no control and cannot prevent. Some of the countries applying inflation targeting have

attempted to identify these types of developments that cannot immediately be countered by monetary policy measures and to exclude them from their inflation targets. They, for example, adjust the price index that they use for targeting purposes for the effects of factors such as a drought or other climatic conditions on food prices, changes in international commodity prices and indirect taxes.

In view of this difficulty, the complexities of the transmission mechanism of monetary policy and the long time lags associated with monetary policy measures, the South African Reserve Bank has preferred to steer away from inflation targeting. The main objective of monetary policy in South Africa is nevertheless to bring the domestic inflation rate in line with the average rate of inflation in the country's major trading partners and major international competitors. In this policy statement, however, no formal commitments are made about the quantitative inflation rate, the price index involved or the specific time span over which the central bank intends to reach this goal.

In order to provide advance notification of the likely stance of monetary policy, specific money supply guidelines are announced by the Reserve Bank early in each calendar year. The rationale for using money supply as an intermediate objective of monetary policy is that the growth in money supply is a vital element in the process of inflation, the greater predictability of monetary policy assists the private-sector enterprises in reaching business decisions and it provides a yardstick against which the actual performance of monetary policy can be judged.

The money supply aggregate that is used to state the intermediate objective of monetary policy in South Africa is M3. This comprehensive aggregate consists of all bank notes and coin in circulation plus all deposits of the domestic private sector with banking institutions. The Reserve Bank decided to use M3 for this purpose because it is the money supply aggregate that has the most stable relationship with domestic demand and is unaffected by deposit shifts between different maturities. The guidelines are normally set in the form of a tolerance range of 4 percentage points in the growth of the average M3 from the fourth quarter of the preceding year to the fourth quarter of the guideline year.

The term "guidelines" is used rather than the more common term "targets" to indicate that no rigid or overriding «money rule» is pursued by the authorities. Instead, the monetary authorities apply the guidelines

in a flexible and low profile manner and do not leave interest rates and exchange rates completely free to find their own levels at all times. The Reserve Bank continues to exercise discretionary judgement in deciding what combination of money growth, interest rates and exchange rates to aim at in any given set of circumstances. As a result of the complexity of functional relationships between economic variables, the Bank feels that it is unwise to rely on only one single indicator under all circumstances.

To achieve overall financial stability, the Reserve Bank accordingly strives to:

- restrict the rate of increase in the money supply to predetermined and publicly announced guidelines;
- maintain the rate of increase in domestic credit extension by the banking sector at a level consistent with the money supply objectives;
- promote a general level of interest rates (and a yield curve) in conformity with the aforementioned objectives;
- lend support to the foreign exchange market to promote orderly adjustments in the floating exchange rate of the rand, and a relatively stable real effective value of the rand;
- support the development of sound and well-managed private banking institutions; and
- encourage the development of efficient and well-functioning financial markets.

2. The operating procedures prior to March 1998

The Reserve Bank can create the monetary conditions to obtain a suitable growth rate in the money supply by controlling the reserve assets that banks have to hold or by operating on the level of interest rates. In the Reserve Bank's previous operating procedures the Bank opted for the so-called classical cash reserve system based on recommendations made by the *Commission of Inquiry into the Monetary System and Monetary Policy in South Africa* (the De Kock Commission). In this system the Bank rate, i.e. the lowest rate at which the Reserve Bank provided accommodation to the banks, was the operating variable for the implementation of monetary policy, while the demand for liquidity by the banks was fully met provided they had the required collateral. Cash reserves were required to create a need for liquidity by

the banking sector. To make accommodation procedures more effective, other operating instruments were also used to influence overall money market liquidity.

(i) Bank rate as operating variable

From the mid-1960s to the early 1980s, monetary policy in South Africa was based on the banks' liquid asset requirements. With the adoption of the classical cash reserve system, the Reserve Bank reinstated the Bank rate as its basic rate for the rediscounting of Treasury bills. Before December 1983 the Reserve Bank's refinancing rates were linked to the recorded levels of the market rates on the paper rediscounted, i.e. the Bank rate was fixed at a predetermined margin above the Treasury bill rate depending on the paper rediscounted. From December 1983 the Bank rate and the other refinancing rates were set by and varied at the discretion of the Reserve Bank. Changes in the Bank rate and associated refinancing rates were then used to influence the general level of interest rates in the economy and, through the transmission mechanism, other economic aggregates such as money supply, bank credit extension and the rate of inflation.

At first the Bank rate was changed frequently and at times relatively large adjustments were made. For example, in the first eight months of 1984 throughout the Bank rate was adjusted sharply upwards in two steps from 17.75% at the beginning of the year to 18.75% in July and 21.75% in August. This was then followed by a decrease of 1 percentage point in November 1984 and an increase of 1 percentage point in January 1985. From May 1985 the Bank rate was then reduced nearly every month to 13% at the end of the year, with an initial reduction of 200 basis points followed by further decreases of generally 100 basis points.

From 1989 the emphasis of monetary policy shifted from a cyclical to a more medium and long-term approach and the Reserve Bank began to adjust the Bank rate more infrequently in several steps in the same direction before reversing the monetary policy stance. For instance, between the end of October 1989 and early 1998 the Bank rate was adjusted twelve times. At first it was reduced in six steps from 19% to 12% between 11th March 1991 and 28th October 1993. This was followed by five increases in the Bank rate to 17% from 26th September 1994 to 21st November 1996. On 20th October 1997 it was lowered

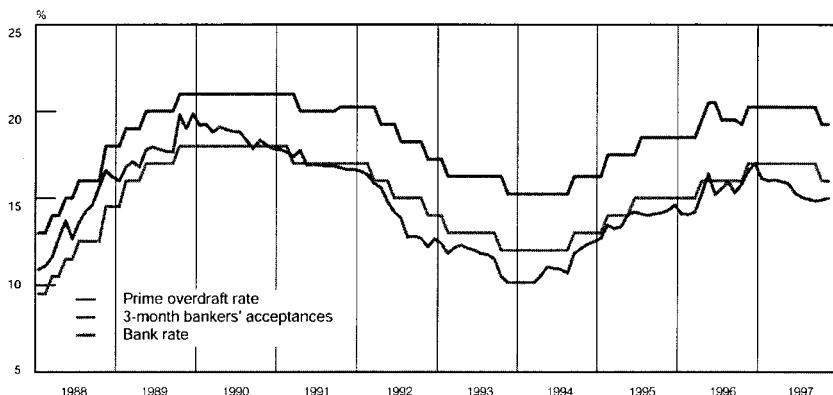
again to 16%. In all these adjustments changes of 100 basis points were made each time.

The Reserve Bank's rates were effective in influencing other market rates because it forced the banks to borrow smaller or larger amounts from the Bank at the declared refinancing rates through the management of the liquidity shortage in the money market. The Bank's power in this regard resided in the fact that it is the ultimate provider and destroyer of cash reserves. Because the Reserve Bank refinanced the banks fully and automatically at the declared refinancing rates, the Bank rate or the highest refinancing rate placed an effective ceiling on short-term interest rates. A bank expecting a shortage of cash at the daily clearing had no reason to pay more than the Reserve Bank's rate for additional cash balances, while a bank experiencing a surplus position was willing to accept a lower call rate than the Bank rate on its anticipated surplus as it earned no interest on deposits at the Reserve Bank.

This ceiling that the Bank rate and the other refinancing rates of the Reserve Bank placed on money market rates is clearly illustrated in Graph 1. From this graph it is apparent that the interest rate on bankers' acceptances with a maturity of three months generally remained below the Bank rate after the middle of 1991. In the period before 1991 the rate on bankers' acceptances was above the Bank rate because refinancing on this paper was provided at a higher penalty rate. Under exceptional circumstances money market rates might even exceed the Bank rate if an increase in the Bank rate was generally expected. However, this would likely be the case only over a relatively short period of time.

The Bank rate also influenced longer-term lending rates of the banks, such as overdraft rates and the rates on mortgage bonds, because they were normally linked to the Bank rate. The relatively fixed relationship between the Bank rate and the prime overdraft rate of the banks is also illustrated in Graph 1. Banks did not have to observe any obligatory minimum or maximum margins above the Bank rate in the determination of their prime overdraft rates. In fact, the De Kock Commission actually recommended that a bank should be encouraged to determine its own prime overdraft rate in response to market forces and in competition with other banks. The banks in South Africa informally continued to link their prime overdraft rates to the Bank rate and usually quoted the same prime overdraft rate to the public. In some cases, overdrafts were provided to certain clients below prime.

Graph 1
Short-term interest rates



(ii) Refinancing procedures

The liquidity needs of the banks in the current system were fully and automatically met by the Reserve Bank on certain predetermined terms, conditions and costs. The refinancing was granted on the initiative and at the request of banks. Initially the cash shortage of banks was accommodated in two ways viz:

- through the rediscounting of Treasury bills and Reserve Bank bills at the Bank rate, and Land Bank bills and liquid bankers' acceptances at rates fixed at the Bank's discretion, all such paper with a maturity of not more than 91 days; and
- through the extension of overnight loans against security of Treasury bills, Reserve Bank bills, Land Bank bills, liquid bankers' acceptances, and long-term gilt and semi-gilt-edged stock. The interest rates were suitably differentiated, with rates on long-term public-sector stock for example about 450 basis points above the Bank rate.

These procedures for providing accommodation to the banks had certain important disadvantages, namely:

- the wide range of accommodation rates (seven) and a long list of refinancable assets complicated the system;
- the rediscounting of liquid bankers' acceptances represented an openended facility because bankers' acceptances could be readily created and easily tailored to achieve liquid status; and

- the Reserve Bank was exposed to a credit risk by the rediscounting procedure.

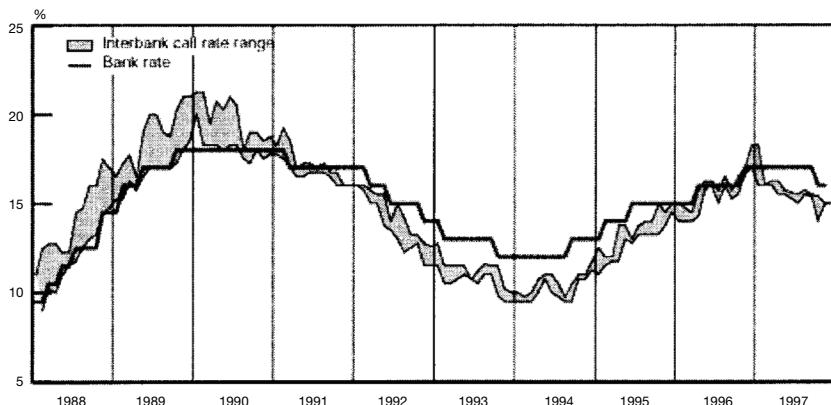
In view of these shortcomings the Reserve Bank discontinued the provision of refinancing through rediscounting from 1st May 1993 and limited it to the extension of overnight loans at:

- the Bank rate when such loans were covered by 105 per cent or better in Treasury bills, central government bonds, Reserve Bank bills and Land Bank bills with an unexpired maturity of 91 days or less;
- the Bank rate plus a margin (which varied between 0.75 and 1.5 percentage points), when such loans were covered by 105 per cent or better in Treasury bills, South African Reserve Bank bills, Land Bank bills and central government bonds with an unexpired maturity of 92 days or longer, but shorter than three years; and
- a discretionary or negotiated rate for limited periods of time against collateral of other forms of security, such as bank-endorsed bills and long-term government bonds. This facility was available only in exceptional circumstances to banks with serious liquidity problems.

These changes in the system of accommodation simplified the accommodation rate structure and ended the open-endedness of the system because refinancing was no longer granted by the rediscounting of liquid bankers' acceptances. The administrative burden of the Reserve Bank in having to verify the liquid status of bankers' acceptances was also removed. The changes introduced in 1993 contributed to more stability in money market interest rates. As illustrated in Graph 2, the monthly interbank call rate range (i.e. the difference between maximum and minimum interbank call rates during a month) narrowed considerably in the 1990s. This was partly caused by the fact that the penalty rate in the accommodation system was reduced from 4 percentage points to only 1.5 percentage points on 1st May 1993, which reduced the aggressive bidding for funds in the interbank market as liquidity needs could be met at the Reserve Bank at relatively low cost. Other factors which led to greater stability in money market rates were the policy to change the Bank rate less frequently and terminating the special status that discount houses enjoyed in the banking sector.

Although the accommodation system brought about relative stability in money market interest rates, it also made these rates insensitive to liquidity changes because the money market shortage was always financed fully and automatically by the Reserve Bank. The size of

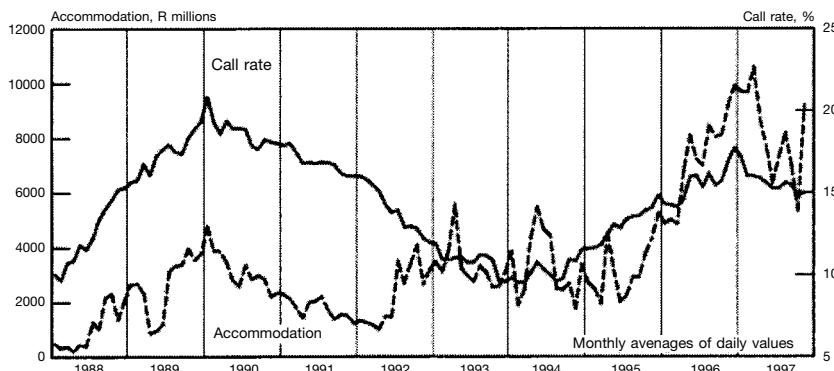
Graph 2
Interbank call rate and Bank rate



the money market shortage often only had a very limited influence on money market interest rates. As long as the banks believed that the Bank rate would remain unchanged even though the money market shortage was increasing, they did not see any merit in repricing their deposit books on movements in the shortage. For instance, during the turmoil in the South African foreign exchange market in 1996 the money market shortage rose from R5.8 billion at the end of June 1996 to R9.3 billion at the end of September 1996, but money market interest rates showed no clear upward or downward tendency. Only after a prolonged and sustained rise in the money market shortage could some reaction in short-term interest rates be detected.

Graph 3, comparing average monthly values in the call rate of banks with the liquidity shortage in the market, clearly shows that the somewhat lagged relationship between changes in the call rate of banks and changes in the accommodation provided by the central bank that still existed in the late 1980s was no longer discernible from 1992 onwards. In this period expectations about changes in the Bank rate became a much more important factor than the available liquidity in the market in explaining changes in interest rates. Correct signals were not obtained from the market, even at times when money market shortages increased to very high levels. Market interest rates did not reflect the market's

Graph 3
Total accommodation and the inter-bank call rate



perception of liquidity conditions and were accordingly not an informative indicator to the authorities of underlying conditions. In a liberalised and globalised financial system with large and volatile capital movements between countries, it is of the utmost importance for interest rates to react quickly to underlying liquidity conditions.

The easy access to Reserve Bank accommodation at a fixed Bank rate not only contributed to the rigidity of rates in the money market, but also had a negative effect on the development of interbank trading in surplus funds and discouraged active trading in Treasury bills and short-dated government bonds. At times it also had a perverse effect on some interest rates in the market. For example, a rise in the money market shortage in certain circumstances could lead to an increased demand for Treasury bills, which could, in turn, lead to a decline in the tender rate for Treasury bills unless the amount of Treasury bills on offer at the tender was not increased substantially.

Another important disadvantage of the previous system of accommodation in South Africa was that it did not enable the Reserve Bank to provide clear signals to the market. Although money market interest rate changes were greatly influenced by expected changes in the Bank rate, the system of accommodation was relatively intransparent. The size of the money market shortage was intended to provide a signal of the

policy stance to the market, i.e. a large money market shortage was meant to signal the authority's displeasure or concern about current monetary and credit trends, while a small shortage was meant to show that the central bank had become more relaxed about the monetary policy stance. In practice this was not achieved because the signalling capacity of the shortage was limited by the fact that:

- the monetary authority was not always in control of the shortage because of difficulties encountered in projecting liquidity needs;
- factors that did not warrant interest rate increases could be responsible for a rise in the shortage, such as a strengthening of the Government's cash position; and
- the market might believe that the Reserve Bank was bluffing.

(iii) Cash reserve requirements

A statutory minimum reserve asset requirement has been employed as a monetary policy instrument since the establishment of the Reserve Bank in 1921. The cash reserve requirement has generally been regarded as a useful monetary policy instrument in that it provides a source of demand for central bank reserves in the event of large and sustained changes in domestic liquidity. Variations in cash reserve requirements have generally not been used in the day-to-day management of money market liquidity because they are comparatively unwieldy, take some time to become effective and frequent adjustments could disrupt the efficient management of banks' portfolios.

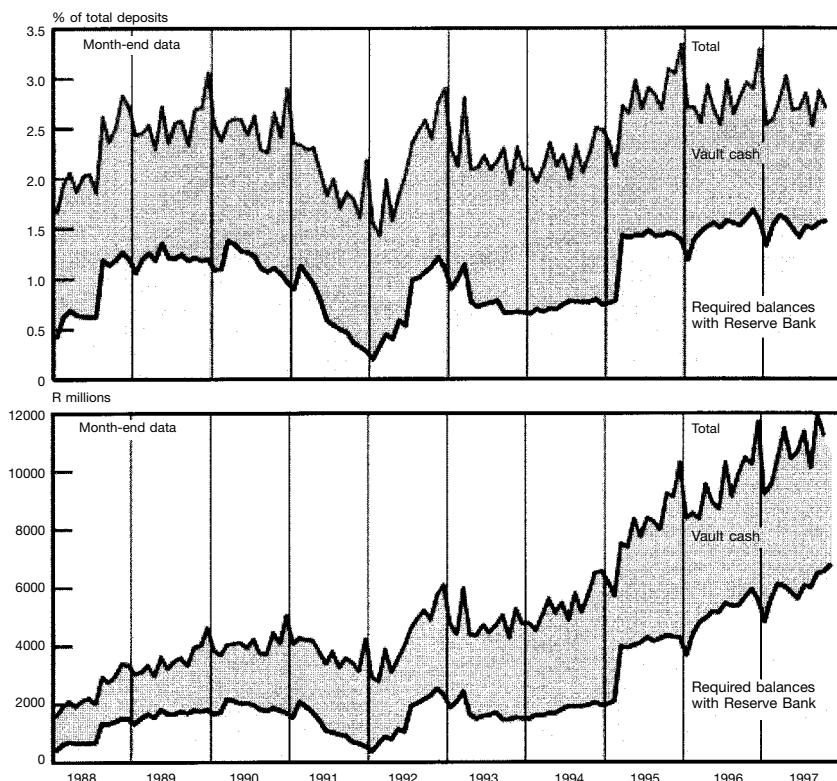
As illustrated in Table 1, the cash reserve requirement has changed considerably over time in South Africa. Changes were introduced to simplify the system or to counter certain practices applied by banks to circumvent the effects of the requirements. Although the reserve ratio was lowered over time, the amount of cash reserves that the banks were required to hold at the Reserve Bank rose from about R2 billion in 1988 to approximately R12 billion in 1997 due to the growth in the amount of deposits held at the banks. As a ratio of total deposits, the cash reserve holdings of South African banks declined during the 1980s to a lower turning-point at the beginning of 1992 of about 1.5% (see Graph 4). This ratio then rose relatively sharply and fluctuated more or less between 2½ and 3% from 1995 to 1997.

Table 1
Cash reserve requirements applicable in South Africa
from September 1983

Effective date	Cash reserve requirements
30 September 1983	8% of short-term liabilities, interest free with the Reserve Bank; 2% of medium-term liabilities, interest free with the Reserve Bank; and 2% of medium-term liabilities, interest free with the National Finance Corporation (a former subsidiary of the Reserve Bank).
15 March 1984	The requirement to hold 2% of medium-term liabilities with the National Finance Corporation was abolished.
31 July 1985	The banks' vault cash could qualify as part of the required cash reserves.
1 April 1986	The requirements were reduced to: 5% of short-term liabilities, interest free; 2% of medium-term liabilities, interest free.
1 February 1991	The requirement of 2% on medium-term deposits was withdrawn and the requirement on short-term liabilities was lowered to 4%.
21 July 1991 term	An additional requirement was introduced of 1% of short-term liabilities on which interest would be paid.
26 April 1993	The requirement against short-term liabilities was lowered immediately to 3% and a programme was announced to lower the basic requirement against short-term liabilities to 1.5% and to increase the requirement against all other liabilities from nil to 1.5% over a period of 15 months. The additional requirement was maintained.
20 August 1993	The reserve ratio was lowered from 1.5 to 1.0% of all liabilities. This change was also phased in by lowering the requirements on short-term liabilities with a further 0.1% each month and increasing the requirements on all other liabilities by 0.1% each month up to January 1994.
21 March 1995	The basic minimum reserve requirement was increased to 2% of all liabilities. The supplementary reserve balance equal to 1% of short-term liabilities was retained.

In early 1998, the cash reserve requirements of banks were 2% of the value of their total liabilities (as adjusted) on which no interest was

Graph 4
Cash reserve holdings of South African banks



paid. The banks were also required to hold additional interest-bearing cash reserves to the amount of 1% of their short-term liabilities (as adjusted). The reserve base of the banks for the basic requirement was total liabilities as adjusted for capital and reserves less interbank deposits and repurchase agreements of 31 days and shorter with government bonds and Treasury bills as security. The basic requirement was applicable on virtually all liabilities to avoid shifts between the various deposits to circumvent the requirements and because the growth in the broad M3 aggregate was used as a guideline or intermediate objective of monetary policy. The reserve base for the additional

requirement was restricted to only the short-term liabilities less deposits pledged as security for loans granted, the amounts owing by banks and mutual banks, repurchase agreements of 31 days and shorter with government bonds and Treasury bills as security, and 50% of remittances in transit.

The eligible assets for reserve requirements consisted of banks' balances on current and reserve accounts at the Reserve Bank plus their holdings of South African bank notes and coin in their vaults, tills and automated teller machines. Vault cash was included as part of the cash reserve requirements mainly in order to limit the financial, logistical and administrative burden on the banks. If vault cash was not included, some banks could at the end of the day transport it back to the Reserve Bank and redeem it for reserve deposits, thus increasing the administrative burden of the central bank and these banks.

As already indicated, no interest was paid on the basic requirement, while interest was paid on the supplementary requirements equal to a rate of 1/2 percentage point below the most recent Treasury bill tender rate. The maintenance period of cash reserve requirements was one month, starting from the fifteenth business day after the end of a specific month up to the fourteenth business day of the next month. This lagged accounting was applied to allow the banks enough time to complete their required monthly returns. Under the previous system banks were required to maintain the required reserve balances at the end of every day during the maintenance period, i.e. averaging over the month was not allowed.

(iv) Other operating instruments

Under the previous arrangements the Reserve Bank also influenced the liquidity in the money market by means of other operating instruments, consisting of:

- open-market operations or the outright buying or selling of domestic securities at the initiative of the central bank;
- adjustments in the investment portfolio of the Corporation for Public Deposits;
- the transferring of Government funds between Tax and Loan Accounts at private banks and the Exchequer Account at the Reserve Bank; and

- currency swaps, i.e. the simultaneous spot and forward transaction of dollar against rand.

Open-market operations have been used relatively extensively by the Reserve Bank as an operating instrument to affect liquidity since the early 1980s when South Africa moved away from direct to market-related measures to influence monetary conditions. The Reserve Bank also has been actively involved as market-maker in government paper, making it difficult to distinguish these transactions from “pure” open-market operations. The recent change to appoint private banks as primary dealers in government bonds should strengthen the Reserve Bank’s ability to pursue open-market operations more vigorously for monetary policy purposes.

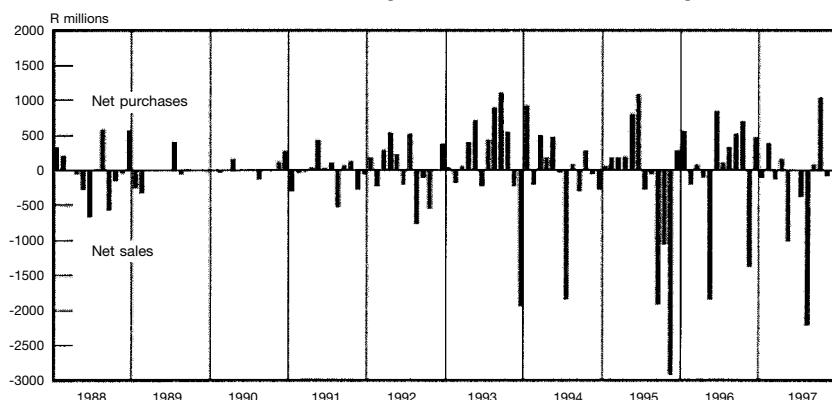
Under the previous arrangements, financial institutions could approach the Reserve Bank directly with bids and offers, or the Bank could take the initiative in buying and selling paper in the open market. Long-term government securities were mainly used in these transactions, because of the shortage of short-term and medium-term government paper which banks needed to comply with liquid asset requirements or to furnish as collateral in refinancing transactions with the central bank. The limited availability of government paper at times forced the Bank to conduct its open-market operations in securities of other public and private-sector entities. Special dated Treasury bills also were used by the authorities to influence money market liquidity. In addition, the amount of Treasury bills issued every week by means of a tender were adjusted specifically to effect money market conditions.

These transactions mainly took the form of outright sales and purchases of securities. Repurchase transactions were seldom employed because of uncertainties that existed about their legal status. The outright sale of government securities and other paper by the Reserve Bank in the open market also was limited due to the lack of sufficient holdings of securities by the Bank. In view of these shortcomings, the central bank resorted to adjusting the investment portfolio of the Corporation for Public Deposits to influence liquidity in the money market. The Corporation for Public Deposits was established in 1984 as a subsidiary of the Reserve Bank in order to rationalise the investment of short-term surplus funds of the public sector and to enable the monetary authority to control the investment of these funds more efficiently. The considerable extent to which the Reserve Bank made use

of open-market operations and adjustments in the portfolio of the Corporation for Public Deposits to influence liquidity in the money market is clearly shown in Graph 5.

The Reserve Bank in co-operation with the Treasury also transferred government funds to and from the private banks as part of its money market operations. Until 1993 all deposits of the Central Government were held on the Exchequer and Paymaster-General accounts at the Reserve Bank. In June 1993, Tax and Loan Accounts, i.e. interest-bearing deposit accounts of the Exchequer with private banking institutions, were opened by the Government. Since then transfers have been made between the accounts at the Reserve Bank and the Tax and Loan Accounts with private banks to neutralise the effect of the flow in government funds on the liquidity in the money market. These transfers are, however, in accordance with an agreement with the Government, generally not used as an open-market instrument. The use of this technique is in any case dependent on the availability of funds. In an attempt to improve its cash management, the Government, as a rule, no longer holds large deposits at the Reserve Bank that can be shifted between the central bank and the private banks. Moreover, frequent and unpredictable changes in the allocation of government deposits could create severe problems for the banks' asset and liability management.

Graph 5
Net purchases and sales of Government stock by the SA Reserve Bank and Corporation for Public Deposits



The Reserve Bank has in recent years also made extensive use of foreign currency swaps to withdraw liquidity from the market i.e. the Bank sold dollars spot and repurchased it forward. When the Reserve Bank's foreign exchange holdings were relatively low, so-called "special currency swaps" were concluded with the banks. In these transactions the Bank sold US dollars to the banks, who then deposited this currency again with the Bank; the currency so deposited was, in turn, bought forward by the Bank. Such a transaction accordingly does not affect the foreign exchange rate, but withdraws liquidity from the money market.

3. The new monetary policy operating procedures

In view of the defects of the current monetary policy operating procedures and to improve the utilisation of domestic liquidity management as an operating tool of monetary policy, the Reserve Bank decided to introduce important changes to its operating procedures during March 1998. Instead of refinancing the liquidity needs of the money market fully and automatically at the initiative of the banks, more active liquidity management through discretionary market operations is now applied. In the new operating procedures repurchase transactions between the Reserve Bank and the banks became the main instruments to regulate liquidity. Banks are given the opportunity to tender on a daily basis for central bank funds through repurchase transactions, and accordingly are given more scope to manage their own liquidity position efficiently. These operations have the further advantages that they can be implemented quickly, they do not have a significant effect on the price of the underlying instrument and they can be easily adapted to changed conditions.

The information made available by the Reserve Bank at the daily tender, signals the intentions of the central bank in a transparent way to the market. Repurchase transactions generally are conducted at a variable rate and allotments are made at the individual bidding rates tendered by the banks, i.e. a multiple-rate auction or so-called U.S. style auction is applied. Fixed-rate auctions may at times be used to give the market a clear interest rate signal and, in periods of uncertainty, to exercise a stabilising influence on interest rate movements. In fixed-rate tenders, the banks are required to state in their bid the total amount of

money that they are willing to transact with the Reserve Bank. If the aggregate bid exceeds the total amount of liquidity to be allotted, the submitted bids are satisfied pro rata according to the ratio of the total amount of liquidity to be allotted to the aggregate bid amount.

The maturity of the regular tenders in repurchase transactions is one week. Where repurchase transactions are used to effect structural adjustments in liquidity, the maturity of these transactions tends to be longer than in the case of the regular tenders. Banks are expected to always cover their tender bids by a sufficient amount of eligible underlying assets, which only consist of central government bonds, Land Bank bills and Reserve Bank bills. The counterparties in the regular as well as the irregular tenders of repurchase transactions are restricted to banks, because these transactions are undertaken to regulate the daily liquidity of banking institutions.

The objective with these new procedures is to create more flexibility, but not instability in the determination of money market interest rates. Repurchase transactions are ideal for this purpose owing to the fact that they mature and can be renewed at short intervals and their terms can be adjusted immediately to changed market conditions. Changes in the repurchase rate should therefore be responsive to changes in underlying liquidity. The repurchase rate, in turn, will have an impact on market rates because it can be used effectively by the central bank to send signals to the market without having to change the Bank rate. At the same time, banks through their bids can send more reliable signals to the Reserve Bank about underlying market conditions.

For the effective implementation of repurchase and reverse-repurchase transactions in the management of liquidity, it is important to have reliable liquidity forecasts. The Reserve Bank already prepares liquidity forecasts on a daily basis for the current month, on a weekly and month-end basis for the next month, on a weekly and month-end basis for the following two months and on a month-end basis for a further three months. Projections are made for a six-month period because large fluctuations normally occur over month-ends and such projections allow some forward planning in liquidity management. Obviously, forecasts for the next day or two will be particularly significant for the proposed new operating procedures. Fortunately, the forecasts of the Bank for the next day or two are normally fairly accurate, although fluctuations in the government deposits with the Reserve Bank are

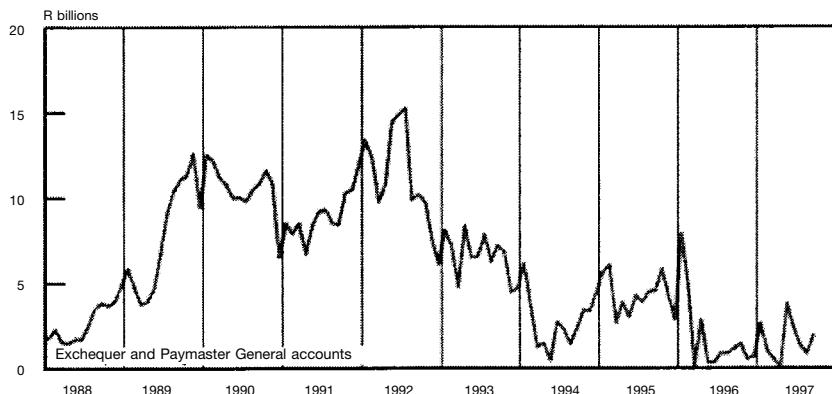
Table 2
Main characteristics of the new operations in repurchase transactions

Purpose	To provide or withdraw liquidity from the market on a regular basis.
Frequency	Regular daily tenders at 09:00. At times additional tenders may be undertaken in the afternoon to correct unforeseen variations in liquidity positions.
Type of tender	Normally variable-rate tenders based on the US-style auction or multi-rate auctions. At times fixed-rate auctions may be used to give the market a clear interest rate signal.
Maturity	One week for the regular tenders. The maturity of irregular tenders may be varied.
Counterparties	Only banks.
Auction procedures	Bids have to be submitted on designated forms to the Reserve Bank quoting tender rates in multiples of 0.005 and in amounts in multiples of R1 million. Bids will be allotted sequentially, by first allotting the highest price and then moving to lower prices until the full amount on offer has been allotted. The results of the tender are announced via the electronic news services and show: – the reference number and the date of the tender; – the type of tender; – the total amount of the tender; – the total amount allotted; – the percentage of the allotment in the case of fixed-rate tenders; – the minimum and maximum bid rate and the average allotment in the case of variable-rate tenders; and – the starting date and the maturity date of the tender.
Underlying asset	All central government bonds, Land Bank bills and Reserve Bank bills, irrespective of their maturities.

sometimes difficult to foresee. The policy now followed by the government to keep relatively small amounts on deposit with the Reserve Bank should alleviate this problem somewhat (see Graph 6).

The daily projections are revised during the course of the day when more accurate figures become available. This may on certain days require irregular operations in the form of additional tenders in the afternoon to

Graph 6
Government deposits with the Reserve Bank



correct the position. Reverse-repurchase transactions may have to be undertaken where too much liquidity was provided in the morning. These irregular tenders are announced at least one hour before they take place and the tender procedures are the same as those for the regular tenders.

The Reserve Bank will of course not always be able to forecast the daily shortage of liquidity accurately and furnish in all the liquidity needs of banks by means of repurchase transactions. In order to enable banks to meet an unforeseen shortage of liquidity in the daily settlement, the present discount window facility has been replaced with a new marginal lending facility where overnight loans or loans for a few days are provided. Banks have unrestricted access to this facility against the collateral of government securities, Land Bank bills and Reserve Bank bills at their initiative for only a short period of time, which should lead to the development of a more smoothly functioning interbank market.

The Bank rate is charged on these loans and is normally at a premium above the interest rate on repurchase transactions. It should form a kind of upper limit or ceiling to the overnight market rate, because when liquidity positions are well balanced no bank will normally be willing to pay higher rates in the interbank market than it has to pay to the Reserve Bank under the marginal lending facility.

As part of these fine-tuning arrangements some other central banks have also opted for a deposit facility. Surplus funds of banks can be deposited with these central banks at a predetermined interest rate, which usually serves as a floor for other short-term interest rates. This provides a corridor wherein market interest rates can move, and in this way stabilises interest rate movements somewhat. Such a corridor system in South Africa may, however, retard the development of the market for interbank funds and will accordingly not form part of the new arrangements.

The South African authorities have decided to use the minimum cash reserve requirements not only to generate a stable demand for central bank money, but also as a short-term money management instrument to avoid excessive volatility in interest rates. To fulfil this function, banks are no longer required to maintain minimum cash reserves on a daily basis. Instead they are allowed to meet the cash reserve requirements on average over the maintenance period. This allows banks to have automatic recourse to their cash balances with the central bank on a daily basis as long as the average level of reserves during the maintenance period at least equals the cash reserve requirements. These balances at the central bank can therefore also be used as working balances.

The introduction of the new payment and settlement system which came into operation on 9th March 1998, has facilitated the use of both the marginal lending facility and the cash reserve requirements. The new system provides banks with their end-of-day settlement obligations from interbank transfers during the day, i.e. in real time, and enables them to receive funds obtained in the interbank market directly in their settlement accounts at the Reserve Bank. At the end of the day, the banks' unsettled intra-day debit position with the Reserve Bank is automatically considered as recourse to the marginal lending facility.

A second phase of the new payments system was introduced in September 1998. In this phase intra-day settlement has begun to operate in order to enable banks to do irrevocable interbank transfer of funds throughout the day. In the final phase on a date still to be determined, same-day settlement for retail payments will be introduced. The end-of-day settlement process will accordingly be moved from the morning following the day on which payments were made to the same day. At that time the new system will provide for real-time on-line settlement on a gross basis for all transactions.

Table 3
New operating procedures

Policy operation	Provision of liquidity	Type of transaction	Absorption of liquidity	Maturity	Frequency	Procedure
Main refinancing operation	Repurchases	Reverse-repurchases		Weekly	Daily	Standard tenders
Fine-tuning operations	Repurchases	Reverse-repurchases	Non-standardised Overnight	Irregular	Quick tenders	
	Marginal lending facility		Discretion of banks	Irregular		
	Cash reserve requirements		Averaging	Irregular		
	Foreign currency swaps	Foreign currency swaps		One month maintenance period	Irregular	Bilateral procedures
	Purchases of Treasury bills	Sales of Treasury bills	Non-standardised 3 and 6 months	Weekly/ Irregular	Tenders/ Bilateral	
	Portfolio of the Corporation for Public Deposits	Portfolio of the Corporation for Public Deposits	Non-standardised	Irregular	Bilateral procedures	
	Transferring of government funds	Transferring of government funds	Non-standardised	Irregular	Discretion of authorities	
Structural adjustments	Repurchases	Reverse-repurchases	Non-standardised	Irregular	Bilateral	
	Outright purchases of securities	Outright sales of securities	Non-standardised	Irregular	Bilateral	
	Variable cash reserve requirements	Variable cash reserve requirements	Non-standardised	Irregular	Discretion of central bank	

This system will allow banks to actively manage their liquidity positions even during the day, making intra-day calculations of their compliance with the cash reserve requirements possible. Cash reserves will be held on a bank's settlement account at the Reserve Bank, which will also serve to make and receive payments. Intra-day loans will be allowed, provided they are adequately collateralised, but at the end of the day this account will not be allowed to be overdrawn.

It was also decided that in the determination of the cash reserve requirements banks could deduct their repurchase transactions with the Reserve Bank from their reserve base. Requiring banks to hold cash reserve requirements against these transactions obviously partly offsets the objective of these type of transactions, i.e. to increase their liquidity.

In addition to repurchase and reverse-repurchase transactions, the marginal lending facility and the averaging provision in the determination of cash reserve requirements, other fine-tuning measures are also utilised to neutralise fluctuations in bank liquidity. As in the past, these instruments include sales or purchases of short-term Treasury bills, adjustments in the portfolio of the Corporation for Public Deposits, the transferring of Government funds between Tax and Loan Accounts at private banks and the Exchequer Account at the Reserve Bank, and foreign currency swaps.

As in the previous system, structural adjustments in the liquidity needs of the market, or changes in monetary policy objectives, may at times require more lasting adjustments in the demand for liquidity than that provided by the fine-tuning measures. These adjustments are designed to meet the banks' need for central bank money in a structural way or to limit their liquidity scope. Supplementary to irregular repurchase transactions, outright sales or purchases of domestic securities and variable cash reserve requirements can be applied to adjust the structural liquidity position of banks.

4. Conclusion

The recent changes in the monetary policy operating procedures should lead to:

- a quicker response in shorter-term interest rates to changed liquidity conditions and an improvement in the transmission process of monetary policy;

- greater flexibility in money market interest rates with enough safety valves to prevent undue volatility in interest rates;
- greater transparency in monetary policy through the various forms of signalling that can be used, which should improve the credibility of monetary policy that is extremely important in today's integrated but volatile financial world;
- the further development of the interbank and Treasury bill market in South Africa;
- improved signalling from the market to the Reserve Bank regarding changes in the underlying liquidity position; and
- more flexible options in the management of banks' liquidity positions.

APPENDIX

The first experience with the new monetary policy operating procedures

On 9th March 1998 the South African Reserve Bank changed the procedures of providing liquidity to the banking system from a virtual automatic accommodation of banks' daily liquidity needs to a repurchase-based auction system. To create orderly conditions in the changeover from the old to the new system of accommodation, the repurchase rate was fixed at 15%, i.e. the level of the old Bank rate, during the week from 9th to 13th March 1998. The maturities of the repurchase transactions entered into at the first tender were divided in five amounts spread out over the subsequent five tender days in order to achieve from the outset a relatively even spread of maturing repurchase transactions over one week.

To enable banks to meet an unforeseen shortage of liquidity in the daily settlement and to avoid excessive volatility in interest rates, two additional changes were also announced. First, the discount window facility was replaced with a marginal lending facility where overnight loans or loans for a few days are provided at the marginal lending rate. The banks have unrestricted access to this facility against the collateral of central government securities, Treasury bills, Reserve Bank debentures and Land Bank bills, irrespective of maturity (i.e. the same securities in which the central bank is willing to undertake repurchase transactions). As part of the transition, the marginal lending rate was fixed at 16% so that banks would initially not be penalised too heavily if they had to make use of this facility.

Secondly, banks were no longer bound to maintaining the required minimum cash reserves on a daily basis. Instead, they were allowed from 20th March 1998 to meet the cash reserve requirements on the basis of an average amount over each maintenance period of one month to supplement unexpected shortages of funds. The Reserve Bank also simplified the system of cash reserve requirements by applying one reserve ratio of 2½% on total adjusted liabilities from the beginning of the maintenance period starting on 23rd April 1998. This resulted in a reduction in the cash reserve requirements of about R500 million to a level of R11.5 billion on the liabilities at that time. If the vault cash

holdings of banks are subtracted from this total, it left approximately R6 billion available for the averaging provision.

After the Reserve Bank had allowed the repurchase rate to float, the average daily repurchase rate remained at about 15% until the end of March 1998. Subsequently, the repurchase rate became more sensitive to liquidity changes and moved downwards to a level of 14.79% on 11th May 1998.

From the middle of May 1998, South Africa became afflicted by the uncertain conditions in Asia and Russia, which also had ramifications for many other emerging economies. Often fuelled by unfounded rumours and speculation, downward pressure was put on the rand exchange rate. With rigid fiscal and other macro-economic policies, the burden of restoring financial stability fell heavily on monetary policy. In order to create orderly conditions, the Reserve Bank intervened quite heavily in the spot and forward foreign exchange market. Rand liquidity in the domestic money market was also substantially reduced by providing considerably less than the estimated liquidity requirement at the daily tender from 13th May 1998. Initially this had hardly any effect on the average repurchase rate, which moved only marginally upwards to 15.15% on 18th May 1998 despite the fact that only 25% of the liquidity requirement was provided on this day.

The slow response of the repurchase rate at that stage was attributed to a large extent to the low premium of the marginal lending rate above the repurchase rate. Banks were quite willing to borrow under this facility when they could not obtain the liquidity in the market. The Reserve Bank accordingly announced a change in the marginal lending rate from 20th May 1998 to a level that was allowed to fluctuate in accordance with movements in the repurchase rate, but that was fixed at 3 percentage points above the daily average repurchase rate. The daily average repurchase rate then started to move more sharply upwards to 16.09% on 25th May 1998. This was, however, still regarded as a too slow reaction taking into consideration the very small proportion of liquidity provided in relation to the requirements in the market.

On 26th May 1998 the Reserve Bank accordingly suspended the variable-rate auction system and replaced it with a system of fixed rate tenders at 18% conducted daily and with one-day maturities only. The length of the maturities was shortened because of the low level of daily liquidity requirements with a seven-day maturity. Simultaneously,

the marginal lending rate was raised to 10 percentage points above the repurchase rate and the Reserve Bank indicated that it would provide the full market liquidity at the new rate. On 2nd June 1998 the spread between the fixed repurchase rate and the marginal lending rate was widened further to 15 percentage points.

The fixing of the repurchase rate was regarded as a temporary measure and was meant to be maintained only until conditions in the financial markets had calmed down. After it had been concluded in a discussion with the four major banks that some stability had returned to the market at the beginning of June, the Reserve Bank therefore lowered the fixed repurchase rate in two steps by a half percentage point each time on 4th June 1998 and 12th June 1998. This brought the repurchase rate to 17% and the marginal lending rate to 32%.

When it became apparent that the South African rand would remain under attack for a longer period than originally envisaged, the Bank reinstated the variable-rate auction system on 19th June 1998 with repurchase transactions with a maturity of one day, and widened the spread between the marginal lending rate and the repurchase rate to 20 percentage points. At the daily tender the liquidity provided was R3.2 billion less than, or nearly 25% of, the liquidity requirement. As a result, the average repurchase rate increased to 20.38%, i.e. 3.38 percentage points above the fixed rate of the previous day, and the marginal lending rate was adjusted to 40.38%. The next day the repurchase rate jumped further to 23.90% in a nervous market, with the result that the Reserve Bank provided slightly more than the liquidity requirement on 23rd June 1998 to indicate to the market that the rate had over-reacted to the signals of the central bank. The rate then declined again sharply to 17.35% on 25th June 1998.

From 26th June 1998 the Reserve Bank shifted its policy stance again and provided less liquidity than required by the market. Although the amount at the daily tender was only R500 million under the liquidity requirement, or amounted to 95% of the funds required by the banks, this resulted in a sharp upward movement in the repurchase rate to 20.08% on 29th June 1998. After the Reserve bank had again explained its signalling procedures to the banks, the average daily repurchase rate started to stabilise somewhat. Although there was at first still a relatively large upward movement in the repurchase rate to 21.15% on 7th July 1998 with a liquidity provision ranging around 98% of

requirements, the repurchase rate subsequently started to edge up much more slowly to 21.37% on 26th August 1998 under more or less the same conditions.

At the beginning of the introduction of the new system of accommodation, the banks made relatively little use of the averaging provision under the cash reserve requirements. After the spread between the marginal lending rate and the repurchase rate had been widened substantially, the banks started to supplement their liquidity needs from this source in May 1998. From June some of the banks started to hold excess cash reserves at the Reserve bank as a safeguard to avoid making use of the marginal lending facility. The accumulation of large cash reserves created cash shortages in the interbank market and resulted in relatively large unintentional borrowings in the marginal lending facility for other banks, and presumably greater volatility in money market interest rates.

In view of these problems and after discussions had been held between the Reserve Bank and banks, it was announced that from 18th September 1998 surplus balances on cash reserves could not be allowed to be carried forward from one maintenance period to the next and that deposits on cash reserve accounts could only be allowed when a bank had previously made use of this facility to finance an unforeseen shortage. Moreover, deposits at any time during the maintenance period would be limited to the amount required to zero out any shortfalls on the cash reserve requirements.

All in all, the flexible repurchase system proved to be of considerable value with the turmoil in the foreign exchange market because it allowed interest rates to respond relatively quickly to the changed circumstances. The upward adjustment in money market interest rates, however, at times followed a rather erratic path. This was, of course, related to the general nervousness in the market, but also reflected teething problems encountered in the implementation of the new system. The instability in interest rates only disappeared after active guidance had been provided by the Reserve Bank regarding the signals to the market.