SOUTH AFRICAN RESERVE BANK

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South Africa's new system for implementing monetary policy

For most of my career at the SARB, as a member of the monetary policy committee, I have worked on interest rate decisions. But only recently have I taken on the financial markets portfolio, and with it oversight of how monetary policy is implemented, so that interest rates transmit to the economy.

As it happens, this has been an interesting time to make that shift, because we have been making big changes to our monetary policy implementation framework.[1]

I would therefore like to centre this speech on monetary policy implementation. Later we can discuss the outlook for the economy, and the challenges facing monetary policy. But I hope it will be interesting for all of you as I reflect on the underlying plumbing of monetary policy, including the role of our balance sheet, the monetary base and money creation, and the payments system.

The main aim of monetary policy implementation in South Africa, as in many other economies, is to keep short-term market rates close to the policy rate chosen by the MPC. What we are really doing is setting the return on the safest and most liquid rand asset – the yield on money – which our relatively large and sophisticated financial markets then factor into other asset prices, taking into account their different risk and liquidity characteristics. In this way, our control of a relatively small asset class allows us to have significant effects on much larger financial markets, and ultimately influence the real economy.

What exactly is this money we control? If you look at the Reserve Bank's balance sheet, you will find two things that can be called money. One is notes and coin. These are Reserve Bank liabilities which are carried around by the general public. Their total value is about R170 billion currently. Everyone is familiar with these, but they are not very important for monetary policy implementation. We provide notes and coin in whatever amount is demanded by the public, and pay no interest on these, so they are not a lever we use for controlling interest rates.

[1] Detailed information on the new framework is available at: https://www.resbank.co.za/en/home/what-we-do/financial-markets/monetary-policy-implementation-framework

The other is electronic money, which is known as bank reserves or settlement balances. This is a form of money held exclusively in SAMOS, the South African Multiple Option Settlement System, which is the backbone of the national payments system. It is managed by the SARB. SAMOS accounts are held mainly by banks, 28 currently, who transact directly with the Reserve Bank. They use these reserves to settle payments between each other. The total supply of bank reserves is around R220 billion, of which about R140 billion is required reserves. This is the form of money used to implement monetary policy.

This R220 billion is only a fraction of the total amount of money in the economy. If you turn to our *Quarterly Bulletin*, where you will find comprehensive statistics on monetary aggregates or money supply, you will see that M3 – which is a broad measure of money, including all bank deposits and money market shares – was R4.72 *trillion* at the end of 2022. The total supply of SARB money was therefore only about 8% of total money in the economy.

How is it that most money is not SARB money? Why can anyone else can create money? Isn't that counterfeiting?

In fact, money creation is a normal characteristic of a banking system. Banks routinely create money through the process of making loans. It works in a very simple way.[2] A bank takes in a deposit and that deposit meets the definition of money – for example, this is the money you have in the bank. But then the bank makes a loan, for instance to someone who borrows for a car or a house. And that loan also appears as a deposit at a bank, which is also money. In this way, the act of credit creation expands the money supply.

The constraint on banks is that every deposit is a promise to pay in bank reserves, which are the liabilities of the central bank.[3] Banks have no power to create these and can instead only access them on terms worked out by the central bank, through its monetary policy implementation framework. This creates a powerful constraint on banks. Whenever they create money, they are obliged to ensure these rands are always valued at par with bank reserves. This obligation is tested many times daily: every time a payment goes from one bank to another, this settlement is conducted through the SAMOS system using bank reserves. So, if bank A creates money by extending a loan to a household, and that household then buys something from someone who banks with Bank B, Bank A will have to transfer bank reserves to Bank B. If they don't have the bank reserves to settle, this bank will be in great trouble. For this reason, while the SARB only creates a small fraction of the money in the economy, it sets the standard for what that money is worth. This is the basis for modern monetary policy implementation.

Let's now consider how monetary policy was implemented before our recent reform.

Between 1998 and 2022, monetary policy in South Africa worked through a shortage or classical cash reserve system. Essentially, we created fixed demand for bank reserves by levying a reserve requirement on banks. We then drained cash so the market was short: the amount of money needed for the reserve requirement was larger than the amount available.

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[2] In John Kenneth Galbraith's memorable phrase, "The process by which banks create money is so simple that the mind is repelled."

[3] For an accessible discussion of this process, see Pontus Rendahl & Lukas B. Freund. "Banks do not create money out of thin air"14 December 2019. Available at: https://cepr.org/voxeu/columns/banks-do-not-create-money-out-thin-air

This forced banks to come to the SARB to fund the missing balances, which we provided through weekly auctions where we charged the repo rate.

In theory, and most often in practice too, the market ended up with exactly enough liquidity to satisfy reserve requirements, no more and no less. For excess reserves, which is any cash banks were not required to hold for regulatory purposes, the SARB would only pay a penalty deposit rate of repo minus 1%. This incentivized banks to minimise their holdings of banks reserves, lending out spare cash to other banks. With an efficient interbank market, at the end of each day banks would all be able to meet their reserve requirements precisely, with no surplus balances.

This used to work quite smoothly and gave us reasonably effective monetary policy transmission. But the framework became increasingly difficult to operate over time, mainly due to the accumulation of foreign-exchange reserves, which were funded with the creation of new bank reserves. To maintain a shortage, we had to drain these, and we were worried that our draining tools wouldn't be up to the task.

In 2020 this risk manifested: we had a bond purchase programme to prevent severe market dysfunction; we opted to absorb the dollar flows from the IMF and other multilateral lenders into the foreign exchange reserves; we participated in the loan guarantee scheme. All these things increased SAMOS balances. We also faced a dilemma: in conditions of financial strain, our financial stability mandate inclined us to provide more liquidity, but our implementation framework still required us to create a shortage of liquidity.

For the next two years, we muddled through. We tolerated a smaller shortage than before, in the region of R30 billion rather than R56 billion. To create this shortage, despite greater liquidity pressures, we had to use draining tools which were distortionary and expensive. For instance, we relied quite heavily on FX swaps, which contributed to high and volatile rates in the forward market, likely hampering investment by non-residents.[4] The volumes of public sector funds we took into the SARB cost around 30 basis points over repo.[5]

In addition, we were concerned that our toolkit could fail if the supply of bank reserves increased further, in which case the shortage might have disappeared. In particular, we knew National Treasury might need its deposits at the SARB, of which R26 billion had been drawn during COVID, leaving just over R40 billion – more than the existing shortage.

At the same time, we were fortunate that leading central banks had accumulated a wealth of experience in dealing with surplus liquidity. This meant we could draw on their experiences to design a framework better suited to South African conditions, rather than trying to invent something from scratch.

What we came up with was in many ways the mirror image of the old framework. Whereas the old system depended on a shortage of bank reserves, the new one relies on a surplus, and where once the borrowing facility was the locus of policy transmission, so now this is a deposit

[4] For further details, see Box 5 of the April 2021 *Monetary Policy Review,* available at: https://www.resbank.co.za/content/dam/sarb/publications/monetary-policy-review/2021/MPRApr21Internet.pdf

[5] This refers to the CPD deposits taken on call at the SARB, rather than being placed with the market

facility. This meant we could stop draining liquidity, unwind those operations and let banks hold extra cash instead, on which they could earn the policy rate.

The logic of this system is that abundant liquidity puts downward pressure on rates. But the deposit facility forms a floor: it is not attractive to lend to anyone else, or buy assets, with an inferior return to what the SARB offers. For this reason, these frameworks are often called floor systems.

For our MPIF, we adopted a version of a floor system called a tiered floor, which had been pioneered in New Zealand and Norway. Tiered floors put limits on how much banks can leave with the central bank and still earn the policy rate; if you exceed your quota, you earn a lower rate. The motivation for adding this feature is to prevent banks from hoarding reserves, maintaining a functioning interbank market. Unlike countries with pure floor systems, we have not expanded our balances sheet so much that there is an enormous excess of bank reserves. We therefore wanted banks to lend some of their surplus to other banks, so the supply would be sufficient even without circulation of bank reserves through the interbank market. The idea is that the implementation framework isn't, by itself, forcing the SARB to expand its balance sheet.[6]

This new system was phased in between June and August last year. The transition to the new MPIF was generally smooth: we undertook extensive consultation with stakeholders before the transition, and we published a clear transition roadmap, which likely helped pre-empt problems and misunderstandings.

Initially we moved to a surplus of around R50 billion. Recently National Treasury has drawn down those deposits I mentioned earlier, and this has shifted the surplus to around R80 billion.

We have learnt from operating the system that it would likely function effectively with a surplus under R40 billion. Even when the surplus dipped to around those levels, on occasion, we did not see upward pressure on other market rates, and we did not see any more demand at our weekly repo auction.

The reason for building a bigger surplus than this is simple: it is cheaper, simpler and less distortionary to pay repo on excess bank reserves, in quotas, than to manage this liquidity using other tools. The size of the surplus is therefore based first on what quantity is sufficient to keep rates near the floor, and second on what achieves efficient management of the SARB's liability structure.

At this point in time, it seems safe to say we have successfully implemented a floor or surplus system of monetary policy implementation in South Africa.

This has a few interesting implications.

One, to our knowledge, we are the first emerging market to implement a floor-type system. These structures are now widely used by advanced economies, but until now emerging markets have not joined the trend. During our reform, we faced many questions about whether floor systems are suitable for emerging markets. Now there is better evidence than before to

[6] A recent discussion of this principle is Claudio Borio. "Getting up from the floor" 10 March 2023. Available at: https://www.bis.org/speeches/sp230426.pdf

say that they are: it is working in South Africa. This is useful information for peer countries who share our excess liquidity situation.

Two, we have relaxed the trade-offs between our price and financial stability mandates. With floor systems, unlike scarce-reserve systems, you can operate the balance sheet as a separate tool to interest rates, something central bankers call the 'decoupling principle'.[7] For instance, you can inject liquidity during periods of financial stress, to stabilise that system, without compromising the freedom of the monetary policy committee to select an interest rate, which will be implemented using the interest-on-reserves tool.[8] Next time we hit a crisis, we anticipate the financial system will start off more resilient, given a larger pre-existing liquidity supply. And if this proves inadequate, we have powerful tools to inject further liquidity.

Three, we seem to be getting more complete monetary policy transmission. In the old system, we could see the interbank market was struggling to achieve an efficient allocation of reserves, from 2020 onwards, with increased use of our penalty rate standing facilities each day. For instance, large volumes of excess reserves, on average about R5 billion a day, were coming back to the SARB each night and earning repo less 1 percentage point, something the system was meant to discourage, and which hadn't happened before the onset of COVID.

Worse, rates were not transmitting smoothly from the interbank market into the financial system. I mentioned earlier the problem of high and volatile rates on FX swaps – rates which have now compressed much closer to the policy rate, with significantly lower volatility. Another example is the repo market, where firms raise cash using collateral such as government bonds. We used to observe borrowing costs that differed markedly for residents and non-residents, with rates well above the policy rate even for short-term loans. Now we have seen these rates much closer to each other, and closer to our policy rate.

To conclude, monetary policy implementation is generally one of those things that works best when most people don't have to worry about it, like plumbing or electricity. Nonetheless, interest rates play a crucial role in all modern economies[9]; monetary policy is an important driver of these rates; and the process of policy transmission affects how these decisions reach into the economy, ultimately affecting all of us. I hope, therefore, it has been interesting and useful to you to reflect on our reforms in this area.

Thank you.

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[7] Jaime Caruana. "Unconventional monetary policies in time of crisis" *SUERF Annual Lecture.* 16 November 2009. Available at: https://www.bis.org/speeches/sp091118.htm

[8] Philip Turner. *The New Monetary Policy Resolution: Advice and Dissent. NIESR Occasional Paper.* No. LV. 2021. Available at: https://www.niesr.ac.uk/wp-content/uploads/2021/02/New-Monetary-Policy-Revolution.pdf

[9] A recent reiteration of this point is Jamie Dimon. "Chairman and CEO letter to shareholders" *JP Morgan Chase and Co. Annual Report 2022.* Available at: https://reports.jpmorganchase.com/investor-relations/2022/ar-ceo-letters.htm "Interest rates are extraordinarily important — they are the cosmological constant, or the mathematical certainty, that affect all things economic."