



Occasional Analytical Note

AUGUST 2019

Monetary Policy in Fixed Exchange Rate Regime Economies

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Outline

- Introduction
- The Objectives of Monetary Policy in Fixed Exchange Rate Systems
- Instruments of Monetary Policy
- Monetary Policy Transmission
- Conclusion
- References

The views and opinions expressed in this article are those of the authors and do not necessarily reflect the official policy or position of the Central Bank of Lesotho (CBL).

Introduction

It is widely accepted that small open economies that follow a fixed exchange rate regime relinquish control of the size of their money supply. Money supply in these economies is endogenously determined. It is a result of the interactions of other economic variables rather than autonomous and decisive action by an authority such as the central bank (CB). In fixed exchange rate systems, monetary policy has the primary objective of defending the peg and ensuring financial stability, which, in turn, assist in maintaining price stability. This is achievable through liquidity management to contain fluctuations on bank reserves and by keeping interest rates at levels that stabilize capital flows.

The objective of this note is to contribute to the knowledge and understanding of how monetary policy works and affects the real economy in fixed exchange rate regime economies. Thorough understanding of these issues important for enable authorities, economists and the public at large to evaluate monetary policy and provide views and different perspectives for improvement where necessary. To this end, information from CBs' websites and existing literature was used to reflect on the objectives of monetary policy, the monetary policy instruments used and the monetary policy transmission channels in fixed exchange rate regimes.

The Objectives of Monetary Policy in Fixed Exchange Rate Systems

Table 1: Monetary Policy Objectives

Country	Monetary Policy Objective
Danmark	Keep the domestic currency, Krone, stable against the Euro.
Oman	Ensure the stability of the fixed exchange rate regime of the Rial Omani to the US Dollar.
Lesotho	Achieve and maintain price stability by protecting the peg of the Loti and the SA Rand.
Namibia	Ensure price stability through the fixed exchange rate regime.
Swaziland	Promote monetary stability by maintaining the peg of the Lilangeni to the SA Rand.

Source: CBs' websites

Danmarks Nationalbank conducts monetary policy by setting the monetary policy interest rates that are linked to lending and deposit facilities offered by the Danmarks Nationalbank to commercial banks and mortgage banks. These interest rates are changed in line with those of the European Central Bank (ECB).

In Oman, the monetary policy objective is attained through domestic liquidity management and maintenance of adequate foreign exchange reserves. Monetary policy is centered around management of domestic liquidity.

In the case of Lesotho, price stability is achieved by maintaining net international reserves (NIR) at a level that guarantees that, for every Loti issued, there is a sufficient amount of foreign currency reserves, that facilitates a one to one exchange of Loti for Rand.

Bank of Namibia monitors the level of official reserves to ensure full backing of domestic currency with foreign reserves.

In Swaziland, the level of foreign exchange reserves is maintained at or above three months of imports of goods and services to achieve

monetary policy objectives.

CBs in fixed exchange rate systems mention maintenance of the fixed exchange rate explicitly in their policy objective statement. This reflects that they regard it as a necessary condition for attainment of other macroeconomic outcomes such as price and monetary stability. Majority of

them indicate that they achieve this by maintaining foreign reserves at levels that are commensurate with the fixed exchange rate regime. Denmark does not refer to foreign reserves but rather talks about aligning interest rates with those of her anchor economy.

Instruments of Monetary Policy

Table 2: Indirect Instruments of Monetary Policy

Type of Fixed Exchange Rate Regime	RR	CLending	O/N SF Credit	CB Securities	RRR	TDeposits	PR	O/N SF Deposit	FXS
Currency Board	4	2	1	1	1	2	0	1	0
Conventional Peg	21	9	10	9	8	7	8	6	6
Total	25	11	11	10	9	9	8	7	6

Source: Khatat and Veyrune (2019) RR (Required Reserves), CLending (Collateralised lending), O/N SF (Overnight Standing Facility), CB (Central Bank), RRR (Repo and Reverse Repo), TDeposits (Term Deposits), PR (Policy Rate Setting), FXS (Foreign Exchange Swaps).

Required Reserves

CBs in fixed exchange rate regime economies utilize a range of indirect instruments of monetary policy. The most common tool among them is the required reserves (RR). The RR (or cash reserve ratio) is the minimum share of the public's deposits that commercial banks must hold as currency or deposits with the central bank. It is used in 25 out of 38 countries in the currency board and conventional peg exchange rate regime categories. Out of these 25, only 2 countries, Comoros and Morocco, remunerate required reserves at specified interest rates. The RR ratio varies from country to country, ranging from 1.0 per cent for Namibia to 20.0 per cent for Comoros.

RR are effective where the surplus liquidity is relatively small and stable. According to Rule (2011), they can be implemented on a scale that eradicates the excess liquidity, thus creating a shortage that could be addressed through liquidity injecting operations. They are easy to implement and do not expose the CB to any

direct costs or risks if they are unremunerated. However, unremunerated RR impose an implicit tax on commercial banks and can be distortionary (Montoro and Moreno, 2011). For example, increasing RR tends to reduce profits of a commercial bank. This may lead to increases in the cost of credit and reduction in the level of financial intermediation as commercial banks compensate themselves for the resultant loss by increasing their net interest margins through adjustments in deposit or lending rates.

Collateralized Lending

The second common tools are collateralized lending and overnight standing credit facility. With a collateralized loan, a borrower stakes an asset against the funds they are receiving as recourse to the lender in the event that he defaults on the initial loan. Assets or securities such as real estate, cars, and business assets could be leveraged to take out a loan. Collateralization of assets gives lenders a sufficient level of reassurance against default risk. CBs use collateralized lending to inject liquidity into the economy. The overnight standing

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Central Bank Securities

CB securities are in third position, used by 10 out of 38 fixed exchange rate regime economies. They are open market operations tools that are issued by the CB for liquidity management and financial market development, amongst other reasons. They can also be issued in foreign currency for the purpose of funding foreign currency reserves. They are mainly used for reducing excess holdings of reserves by commercial banks and are more relevant where there is structural excess liquidity. The monetary policy regime may also determine plausibility of the issue of CB securities (Gray and Pongsaparn, 2016). Inflation targeting countries require an effective OMO instrument such as the CB securities to maintain market rates close to the policy target. Exchange rate targeting economies may tolerate more volatility in interest rates while monetary aggregate targeting economies are likely to be characterized by low financial market development and limited use of market-based monetary instruments. These type of securities are not common among low income countries due to interest rate and administrative costs concerns and inadequate market infrastructure (trading and settlement systems), amongst other

factors (Gray and Pongsaparn, 2016). Some of the costs and benefits of CB securities as derived from Rule (2011), Gray and Pongsaparn (2015) include;

Costs

- They expose CBs to interest rate and administrative costs. The mopping up of excess liquidity at a specified rate may be too high a cost for balance sheets of some CBs.
- They may have a negative effect on the ability of government to issue its own securities because of their impact on liquidity in the market and so may warrant close coordination between the CB and government.

Benefits

- They provide some autonomy to the CB thus facilitating effective liquidity management, even under circumstances of limited or inactive government securities market.
- Unlike deposits, central bank securities are tradable, thus allowing counterparties access to their funds when they need them and sparing them the costs associated with borrowing from the short-term money market.
- In addition to assisting with monetary policy, they can stimulate development of the wider financial market because they have the potential to create secondary market trading in such securities.
- They serve as a substitute for unremunerated required reserves, which impose an implicit tax on depository institutions.

Repurchase Agreements (repos)

9 countries use repos. A repo is an agreement between two parties under which one party sells a security to the other, with a commitment to buy back the security at a later date for a specified price (Fleming and Garbade, 2003). They are essentially collateralized loans in the sense that they are contracted against assets, such as, government securities, mortgage-backed securities and other money market instruments, pledged as collateral.

Their main objective is daily liquidity adjustment and are more relevant in economies where the demand for funds from the central bank can be highly volatile. This mostly happens in economies without reserve requirements and averaging arrangements. Nonetheless, they could be used for long-term supply of liquidity at low intervals in countries with reserve requirements and averaging arrangements. Wakeling and Wilson (2010) and Rule (2011) identify the following costs and benefits of repos;

Costs

- Since they are short-term money market instruments and their interest rates change daily, they can be used speculatively for profit.

Benefits

- They are low risk instruments for monetary policy operations. The collateral reduces the inherent credit risk.
- Their terms (amount, maturity, frequency, interest rate e.t.c) may be tailored to liquidity conditions.
- They provide relatively easy control over liquidity because liquidity can be absorbed by a roll-over of some fraction of repos falling due.
- Since their credit risk premium is small they could provide relatively more accurate information on short-term interest rate expectations.
- They could help to develop the financial market by creating the demand for securities that serve as collateral and stimulating private repo market activity.
- By increasing the menu of investment options while also reducing risk and providing a higher return, repos facilitate foreign currency reserve management.

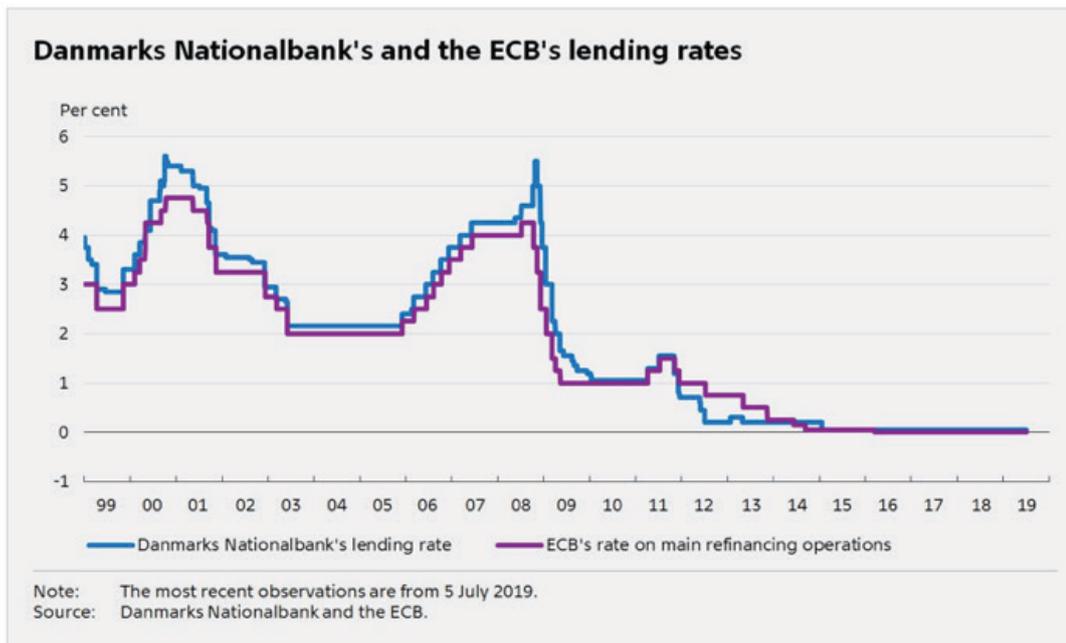
Term Deposits

Term deposits are the simplest tool available to CBs for dealing with surplus liquidity. The CB can require commercial banks to place deposits at the CB. The CB is at liberty to choose the maturity of the deposits, taking into account the operational costs of taking deposits vis-a-vis commercial banks' willingness to tie-up funds at the CB. For deposits to function as part of a monetary policy framework, the CB may have to put up an incentive to encourage commercial banks to deposit funds at the CB. The incentive could be in the form of remuneration on the deposits, particularly for maturities higher than overnight. However, deposits lack flexibility in the sense that the commercial bank cannot access the funds before maturity of the deposit (Rule, 2011). This may result in costs to the commercial bank, should it need the funds, which could be in the form of penalty costs for cancelling the deposit prior to its maturity or interest costs if the commercial bank has to resort to borrowing from other sources.

Short-term Interest Rates

A country is regarded to set the short-term interest rate when it ties policy rate setting with or only has a standing facility for driving market rates (Khatat and Veyrune, 2019). Under free capital mobility conditions, a country that is susceptible to capital account shocks is better-off directing its policy rate close to that of its anchor economy, in alignment with the uncovered interest rate parity (UIP) condition (Khatat and Veyrune, 2019). Considerable and persistent deviations would result in imbalances in the money and foreign exchange markets and heightened chances of speculation, thus threatening the exchange rate peg. A number of countries with fixed exchange rate regimes set the level of their policy rate. Danmarks Nationalbank conducts monetary policy by setting the monetary policy interest rates that are linked to lending and deposit facilities offered to commercial banks and mortgage banks. These interest rates are changed in line with those of the ECB as demonstrated in Figure 1 below.

Figure 1: Danmark Nationalbank's Lending Rate and ECB's rate on Main Refinancing Operations



Source: Picture extracted from <http://www.nationalbanken.dk/en/monetarypolicy/implementation/Pages/default.aspx>

Khatat and Veyrone (2019) report that Hong Kong Monetary Authority (HKMA) and Saudi Arabian Monetary Authority (SAMA) influence their interest rates to move in line with those of the US Federal Reserve because they both have pegged their domestic currencies to the US Dollar. The HKMA sets its base rate, that is used to determine the discount window rate at 50 basis points above the prevailing US Fed Funds target rate or the average of the five-day moving averages of the overnight and one-month Hong Kong Offered Rates, whichever is the highest. One of SAMA's key monetary policy target rates, the overnight reverse repo rate closely follows the lower bound of Fed Funds target rate. Shambaugh (2004) finds evidence that interest rates in fixed exchange rate regime countries follow interest rates developments in anchor economies while this is not so much the case for floating economies. He therefore concludes that pegging results in loss of monetary policy autonomy. Uanguta and Ikhide (2002) showed that changes in the SA's policy rate are transmitted to Namibia's lending rates and private investment.

Standing Facilities

The overnight standing deposit facility allows counterparties to deposit funds with the CB. The interest rate on the deposit facility, the deposit rate, is usually substantially lower than the corresponding money market rate. As a result, credit institutions normally only use the standing facilities in the absence of other alternatives. The main purpose of the standing facilities is to contain the volatility of short-term money market interest rates.

Foreign Exchange Swaps

Foreign exchange swaps (FX swaps) are the least used direct instruments of monetary policy by fixed exchange rate regime countries. An FX swap is a financial transaction in which specific amounts of two different foreign currencies are exchanged by two counterparties. Essentially, one party borrows one currency from, and at the same time lends another to the second party. Each party uses the repayment obligation to its counterparty as collateral and the amount of repayment is fixed at the FX forward rate as at the beginning of the contract (Bank for International Settlements, 2008). Thus, they can be viewed as FX collateralised

borrowing/lending. Central banks use FX swaps as monetary policy instruments to alter domestic liquidity. They are also used to manage foreign exchange reserves and to stimulate development of domestic financial markets.

Hooyman (1994) explains that the FX swap has the following effect. When the CB buys foreign exchange with domestic currency and gets into an agreement to sell back the same amount in the future, at the forward exchange rate, its foreign assets increase. If the counterparty is the domestic commercial bank, its reserves are credited, thus increasing reserve money, hence money supply, while its foreign assets decline. The opposite would happen if the CB sold foreign exchange spot and bought it back forward.

The necessary conditions for the use of FX swap as a monetary policy tool include:

1. There should be a spot and forward foreign exchange market.
2. Forward exchange rate quotes should be readily available and market determined.
3. They are more suitable for a country that targets a monetary aggregate because they have an immediate and direct effect on the monetary base.

They are characterized by the following costs and benefits as outlined by Hooyman (1994);

Costs

- It may be a challenge for banks to act as counterparties because they will need to

get foreign exchange from the international market and if the required sum is large relative to their capital, they will be charged a risk premium thus creating a cost disadvantage for them.

- Only the banking sector can participate, leaving out institutional investors and large corporations, thus minimizing competition and efficiency of the market.
- Might not be the best option where monetary policy targets interest rates instead of a monetary aggregate because they have a direct effect on high-powered money.
- Their announcement might influence the exchange rate.

Benefits

- They are an option when the domestic short-term securities market is non-existent or not deep enough because the market in foreign exchange is generally active.
- They are a flexible instrument and the swap is easily reversible. They can also be easily rolled-over.
- The collateral minimizes default risk.

Direct Instruments of Monetary Policy

Direct instruments of monetary policy control prices (interest rate) or quantities (credit) through regulation by the central bank.

Table 3: Direct Instruments of Monetary Policy

Type of Fixed Exchange Rate Regime	Specific Lending Requirements	Interest Rate controls	Direct Credit	Credit Ceilings
Currency Board	1	1	0	1
Conventional Peg	9	9	6	4
Total	10	9	6	4

Source: Khatat and Veyrune (2019)

Alexander, Baliño and Ecoch (1996) identify the following costs and benefits of direct instruments of monetary policy;

Costs

- They may result in inefficient allocation of resources.
- They may result in credit allocation that is out of line with monetary policy objectives, such as one that is related to promotion of certain sectors of the economy.
- They may lose effectiveness because economic agents find means to circumvent them.
- They may lead to disintermediation as funds may be redirected to unregulated informal financial markets to avoid the controls.
- Their administration tends to breed corruption.

Benefits

- They are easy to implement.
- They have relatively low fiscal costs.
- They may be the only option for countries with undeveloped and non-competitive financial systems.

Fixed exchange rate regime economies use a plethora of direct and indirect instruments of monetary policy with the selection of tools differing from one economy to the other. Not all instruments are applicable in all situations. Some are more applicable in addressing long-term structural liquidity surplus, or where liquidity is small and stable or where there is high and volatile demand for funds from the CB, thus requiring high frequency liquidity adjustments. The different tools result in implicit costs, such as, market distortions and explicit costs mainly in the form of administrative and interest rate costs. They require market infrastructure, trading and settlement systems of different sophistication levels. They all have advantages and disadvantages with the latter appearing to outweigh the former for some instruments. These factors should play an important role in informing the choice of tools by CBs.

Monetary Policy Transmission

Table 4: Monetary Policy Transmission Channels

Country	Study / Source	Monetary Policy Transmission Channels
Hong Kong SAR	Hong Kong Monetary Authority (2008)	<ul style="list-style-type: none"> • Asset price (real estate) channel is important in the transmission of interest rate shocks to the property price and headline inflation rate but small on real GDP.
GCC	Cevik and Teksoz (2012) Espinoza and Prasad (2012)	<ul style="list-style-type: none"> • Domestic interest rates in Bahrain and Saudi Arabia mirrored US rates but those of Kuwait, Qatar and the United Arab Emirates diverged. • The interest rate channel is significant but the pass through is low. The interest rate channel is insignificant.
Nepal	Bhudha (2015)	<ul style="list-style-type: none"> • There is divergence between monetary policy rates in Nepal and policy rate in India because of the partially liberalized capital account. • Bank lending and asset price channels are effective though with long lags and the interest rate channel is weak.
Namibia	Uanguta and Ikhide (2002) Sheefeni (2017)	<ul style="list-style-type: none"> • There is complete pass through of changes in South Africa's policy rate to lending rates in Namibia. • Found evidence of interest rate and bank lending channels for Namibia. Asset price and exchange rate channels are picking up.
Lesotho	Khoabane (2019) forthcoming	<ul style="list-style-type: none"> • There is strong transmission of SA's monetary policy decisions to Lesotho's short-term interest rates. • Monetary policy transmission to output and inflation through the exchange rate, credit and interest rate channel is weak.

The extent to which the anchor economy's interest rates are transmitted to the pegged economy's interest rates depends on the level of openness of the capital account of the pegged economy. Monetary policy transmission to the real economy through different monetary policy transmission channels differs from economy to economy. This is because monetary policy transmission depends on individual economy's characteristics such as the level of development and competitiveness of the financial system, prevalence of different assets markets such as, real estate, bonds and equity markets, their level of activity and reliance on the domestic capital markets, structural weaknesses such as fiscal dominance, excess liquidity in the banking system.

Conclusion

In a fixed exchange rate regime economy with free capital mobility, monetary policy has the primary objective of defending the peg, which, in turn, assist in maintaining price stability. To this end, fixed exchange rate regime economies use a plethora of direct and indirect instruments

of monetary policy with the choice of tools differing from one economy to the other. These monetary policy instruments are selectable on the basis of their applicability to different liquidity conditions, their advantages and disadvantages, amongst other factors. The use of different monetary policy instruments by fixed exchange rate regime economies reflects that monetary policy frameworks differ among these economies. Despite the use of different policy tools, they have one common monetary policy outcome that the anchor economy's interest rates are transmitted to those of the pegged economy with the extent of transmission determined by the level of openness of the pegged economy's capital account. The transmission of monetary policy through the different channels differs from country to country within the fixed exchange rate category because of differences in economic and structural characteristics. This reflects that there is no common or standard monetary policy transmission process for fixed exchange rate regime economies.

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