

# Exchange Rate Policy and Monetary Policy Implementation

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## Introduction

The choice of a monetary and exchange rate policy framework is one of the most crucial decisions that economic policymakers (and ultimately politicians in many cases) are called upon to make. The choice is far-reaching, for several reasons. First, the policy framework has widespread implications for all economic agents. Second, it affects key macroeconomic outcomes (inflation, competitiveness, responsiveness to economic shocks). Third, policy frameworks only rarely undergo fundamental change – although they may evolve. And fourth, different frameworks have different institutional requirements – for instance, the demands placed on central banks.

In many African countries, discussion of monetary policy choices is framed around the transition from monetary aggregate targeting to inflation targeting, in the context of a flexible exchange rate. This is a valid and important debate, and such a transition may well be beneficial. However, these options are only a part of the range of monetary policy options available, which in turn encompass a range of exchange rate policy choices. In many other countries, the key anchor is a fixed or pegged exchange rate, with monetary taking on a more passive role. There is no “right” answer to this policy choice, which depends upon the particular characteristics of a country or economy.

This note reviews some of the key aspects of exchange rate and monetary policy choices with reference to developing countries, and how exchange rate policy choices impact on monetary policy. It considers both theory and practice, and has a particular focus on sub-Saharan Africa.

The choice between exchange rate and monetary policies can usefully be summarized diagrammatically, as in Figure 1. Experience suggests that the constraints envisaged in theory may be somewhat blurred in practice, leading to many intermediate solutions. In particular, central banking practice and recent research suggest that there are gray areas in the presence of underdeveloped financial markets and in presence of large amounts of foreign reserves that provide additional flexibility to emerging and developing economies.

*The majority of IMF members use exchange rate targets.* As economic theory suggests, those tend to be Small Open Economies which constitute approximately 20% of the world’s GDP and predominantly target the US Dollar – although this has been declining in importance over recent years.

*Monetary targeting economies are typically much larger – particularly if the Eurozone countries are included.* Size of financial market and credibility of central banks divide monetary targeting economies into three types. Countries with less developed financial markets (M2/GDP average 0.3) tend to use monetary aggregate anchors; countries with more developed financial markets (M2/GDP average 0.6) tend to target inflation; economies with high levels of credibility such as the EU, USA and Japan use more other types of targets including output.

Figure 1: Exchange Rate and Monetary Policy Choices

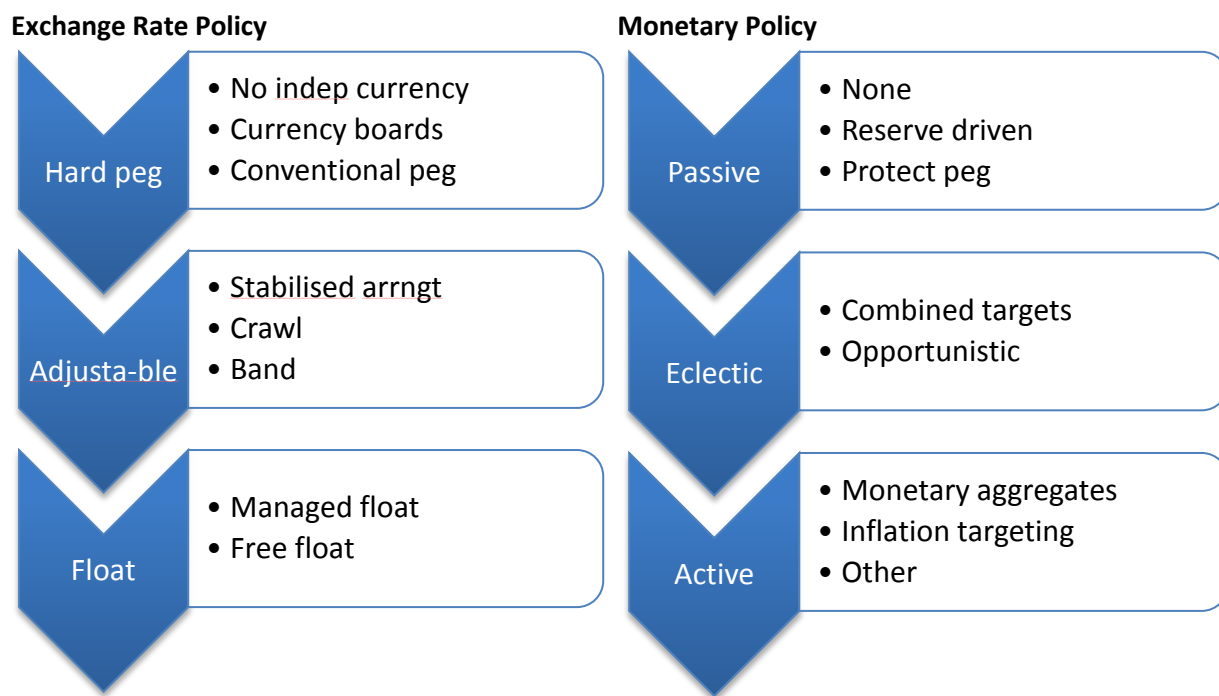
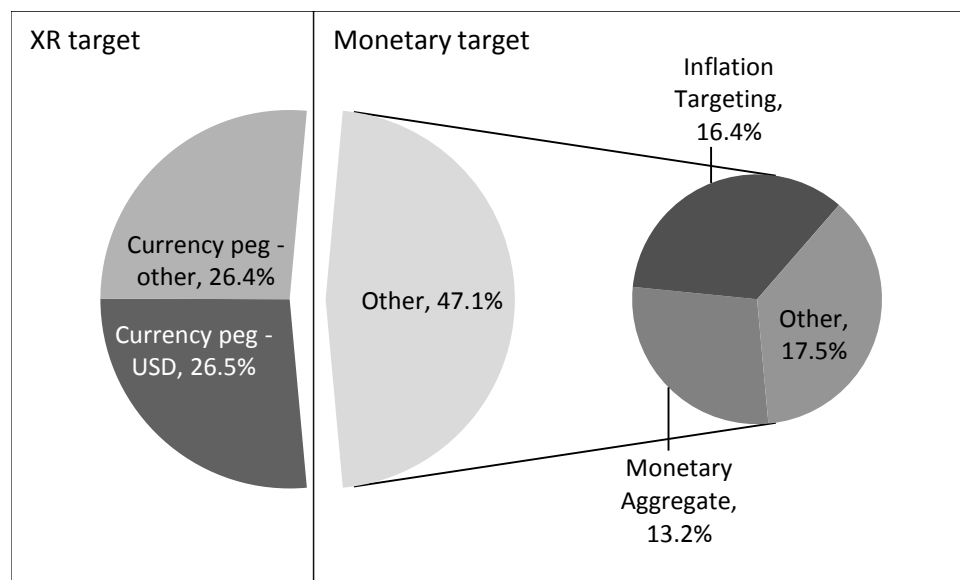


Figure 2: Exchange rate and monetary targeting



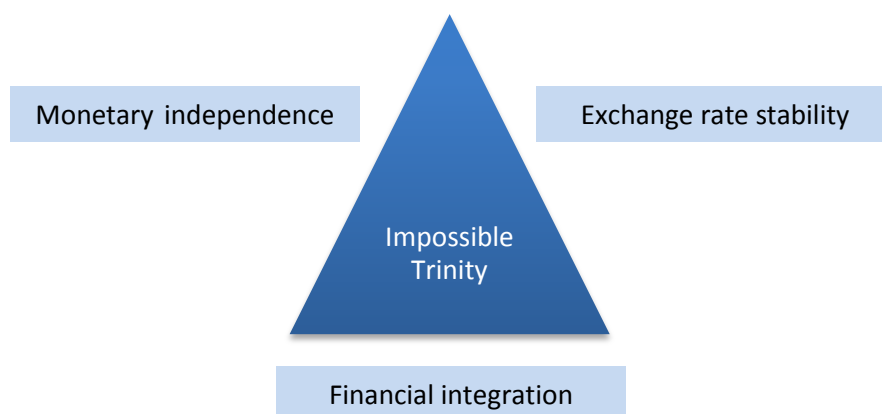
Source: IMF Annual Report on Exchange Arrangements and Exchange Restrictions, 2010

## Exchange rate and monetary policy choices – the theory

Countries have some choice over the combination of policies – monetary independence, exchange rate stability and financial integration – that they adopt but cannot have all three at once. The Mundell-Fleming “Trilemma” in Figure 3 below illustrates well the nature of the macroeconomic policy choice in economic theory, which requires that two of three choices can be made actively, which the third follows passively.

Developed economies such as the US, the Eurozone and Japan have chosen open financial markets and a high degree of monetary autonomy, while forgoing control of their exchange rate (i.e. they have a flexible, market determined exchange rate). By contrast, countries with currency boards have open financial markets and a fixed exchange rate but no control over money supply or interest rates (which are determined by the country of the currency peg). The third policy combination, as adopted by countries such as China but also present in the old Bretton Woods system, entails an autonomous monetary policy and pegged exchange rate but closed financial markets (i.e. capital controls).

**Figure 3: the Mundell-Fleming Trilemma**



To understand the dynamic of the impossible trinity consider what happens to a country trying to combine tight monetary policy with an exchange rate target in the context of open financial markets. Tight monetary policy leads to high risk adjusted interest rates, this attracts capital inflows and put upwards pressure on the exchange rate. Stabilizing the exchange rate requires absorbing foreign exchange and accumulating reserves. This creates domestic liquidity which in turn lowers the interest rate and offsets the original purpose of monetary tightening. The excess liquidity needs to be re-absorbed by the central bank at high cost through sterilization operations. The policy combination is unstable. The monetary policy either becomes ineffective, or leaves high and eventually unsustainable costs for the central bank.

## Exchange rate and monetary policy choices – in practice

*In practice, both developing and emerging economies, policymakers may legitimately strive for a workable policy that combines elements of financial integration, monetary policy autonomy and exchange rate stability. As capital flows and volatility in commodity prices – to which developing and emerging economies are particularly vulnerable – can reflect heavily on the exchange rate, and*

exchange rate shocks can cause serious problems in the real economy<sup>1</sup>. Hence, forgoing exchange rate stability may be undesirable for developing countries with active monetary policy.

One way to achieve control over money supply and the exchange rate is by reducing financial integration. Financial integration can be constrained by a number of intended or unintended factors including formal capital controls, other regulatory constraints to capital flows (e.g. institutional investors, ownership restrictions) or underdeveloped capital markets preventing capital from entering the economy. This, particularly in the case of small underdeveloped financial markets, provides scope for intermediate solutions combining a degree of exchange rate stability with monetary autonomy.

### Selected research findings

A number of recent research findings support the idea of monetary and exchange rate targets not being mutually exclusive in the presence of partially open financial markets and large levels foreign reserves.

1. *Having a real exchange rate target is not inconsistent with active monetary policy, and might yield better results in terms of output volatility for emerging economies.*

This is shown in Aizenman, Hutchison & Noy (2008), which estimates the monetary policy reaction function of the central banks of 16 inflation-targeting emerging economies and finds that unlike central banks of inflation-targeting industrialized economies, central banks of inflation-targeting emerging economies do not follow a “pure” inflation targeting strategy, but respond systematically to the real exchange rate shocks. High degree of dependence on commodity exports makes the finding even stronger.

The finding is corroborated by Ostry, Ghosh & Chamon (2012), that, considering whether adoption of inflation-targeting requires countries to forego exchange rate stabilisation, finds that inflation-targeting central banks in emerging markets do in practice target (real effective) exchange rate stability in addition to using interest rate policy in accordance with Taylor rule. The study concludes that supplementing monetary policy in inflation-targeting regimes with foreign exchange market intervention is likely to be welfare enhancing, can boost credibility of the central bank and may inhibit speculative inflows

2. *Different degrees of capital account openness and large amounts of foreign reserves can mitigate the constraint posed by the “trilemma”.*

Aizenman, Chinn & Ito (2008) address the “trilemma” directly investigating the degree of exchange rate flexibility, monetary independence and capital account openness by calculating indexes for each over time. The analysis is complemented by adding the level of foreign reserves accumulated as a fourth dimension.

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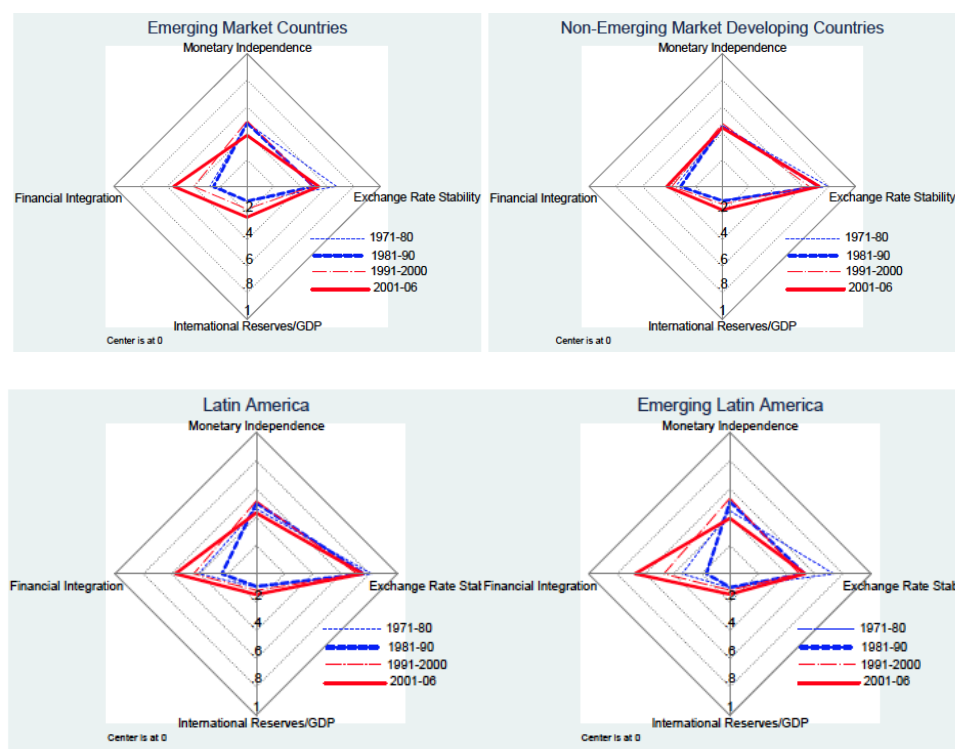
<sup>1</sup> Exchange rate shocks can cause problems in terms of domestic balance sheet mismatches and high pass-through to inflation – in case of depreciation; export competitiveness – in the case of appreciation; and in the development of exports and trade-flows – in the case of excessive volatility.

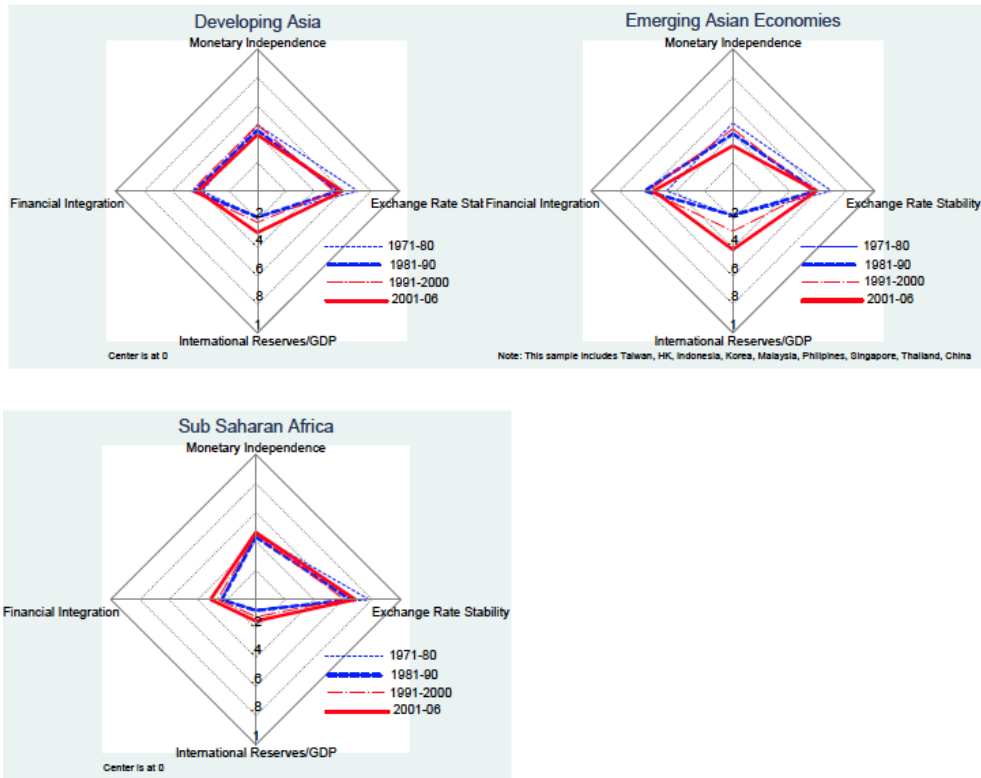
The study finds that the constraints posed by the “trilemma” are indeed binding as changes in one of the variables induces an opposite change in (a combination of) the other two. Output volatility tends to be lower when there is greater monetary autonomy and lower focus on exchange rate stability. In the context of exchange rate stability however, large international reserves holdings (greater than 20% of GDP) can provide a buffer against output volatility and speculative attacks allowing a relaxation of the “trilemma” constraints. Exchange rate stability appears to be a more effective tool than monetary policy autonomy in reducing inflation, and financial integration also contributes to lower inflation.

The study distinguishes between emerging and non-emerging developing countries, as in Figure 4 below. Overall emerging markets are found to be converging towards a “middle ground” with managed exchange rate flexibility, buffered by sizeable holdings of international reserves, medium monetary independence and deeper financial integration. Non-emerging economies on the other hand have focused more on exchange rate stability, with less financial integration, stable monetary independence and less accumulation of international reserves.

There are however important regional differences. In Latin America, financial integration increased with lower monetary independence and exchange rate stability, especially for emerging economies while accumulation of foreign reserves remained limited. Asian economies have chosen a more balanced macroeconomic policy with stable financial integration and exchange rate stability, reduced monetary independence and substantial accumulation of international reserves. Asian emerging economies are particularly different from emerging economies in other regions of the world. Economies in sub-Saharan Africa focused exchange rate stability – although this declined slightly on average – and stable monetary independence. Financial integration and accumulation of monetary reserves lagged with respect to the rest of the world.

**Figure 4: The extended “trilemma” in practice**



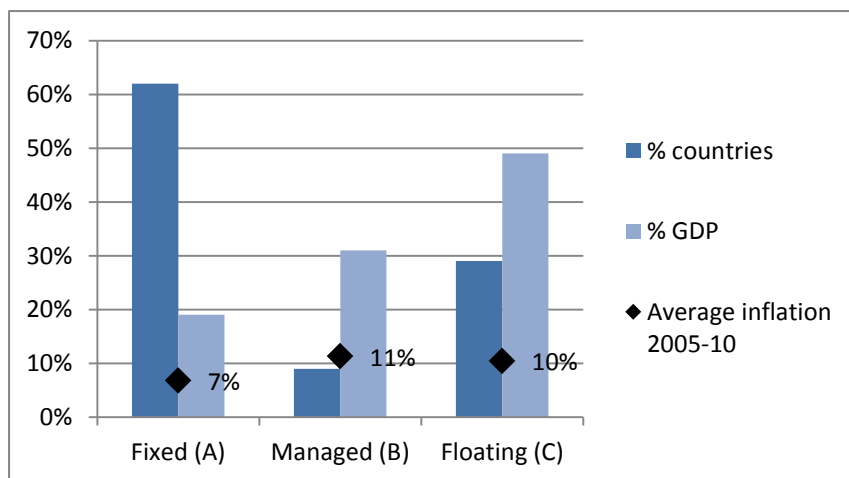


Source: Aizenman, Chinn & Ito (2008)

## Exchange rate and monetary policy frameworks in SSA

The majority of countries (62%, see Figure 5 below) in sub-Saharan Africa have a form of pegged exchange rate. However, these tend to be smaller countries and account for only 19% of the region's GDP. The larger economies have predominantly floating rates or managed regimes (see Figure 7, in Appendix 1). Inflation is kept the lowest in exchange rate targeting economies.

Figure 5: Exchange rate arrangements in SSA



Source: IMF Annual Report on Exchange Arrangements and Exchange Restrictions, 2010, and World Economic Outlook database



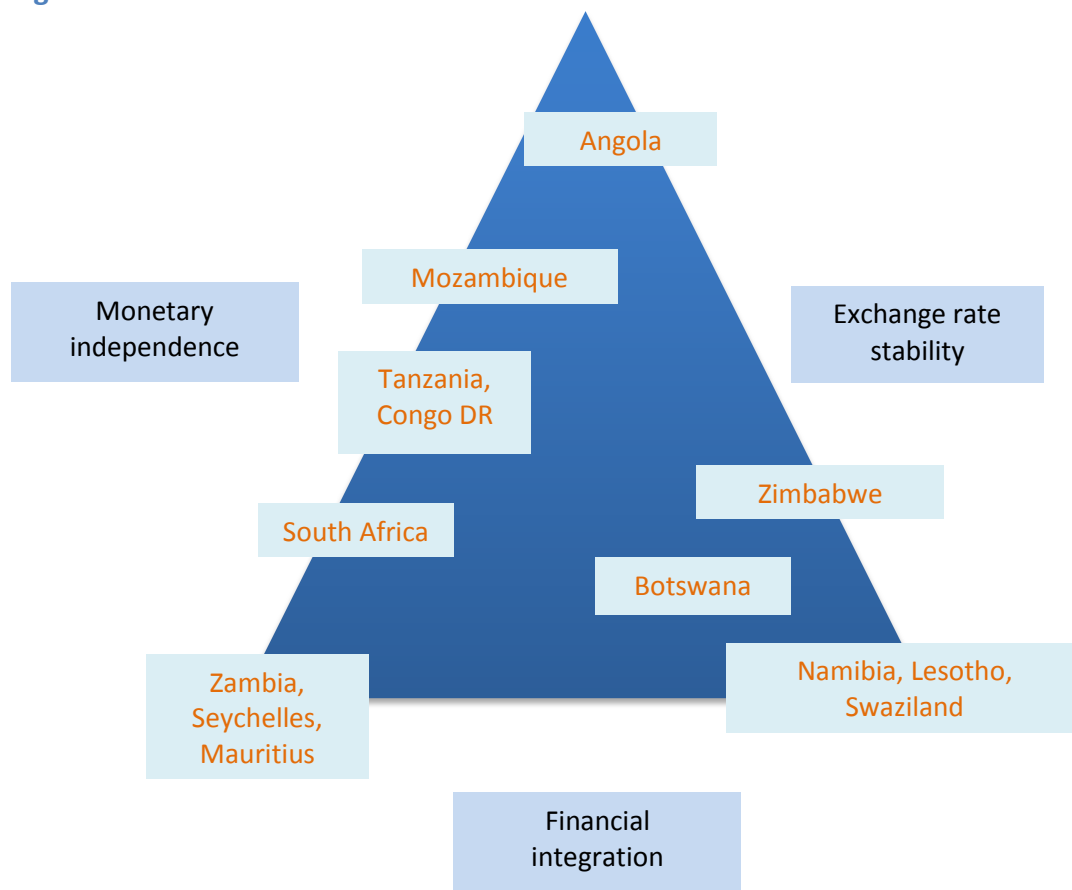
A detailed overview of the monetary policy arrangements in the Southern African Development Community (SADC) region is given in Table 1. Although most countries reviewed feel the bind of the “trilemma” in form of either loss of control over the exchange rate or loss of control over monetary policy, the case of Botswana is of particular interest as a country combining active monetary policy, stable exchange rate and open capital account.

**Table 1: Policy arrangements in SADC**

Country	Exchange rate	Monetary policy	Capital acc.	Comments
Angola	Other managed arrangement	Active using interest rates and monetary aggregates	Extensive controls (Article XIV)	Unclear policy framework, problems with inflation and exchange rate stability
Botswana	Crawling peg (to ZAR-SDR basket)	Active, using interest rates	Liberalized	Policy flexibility buffered by very high reserves (an “Asian” position?), but sterilization costs an issue at times
Mauritius	Free float	Hybrid inflation targeting, intending to move to formal IT	Liberalized	Slight RER overvaluation, but FX intervention limited to containing volatility
Namibia	Conventional peg (to ZAR) within CMA	Passive (follows SA)	None within CMA; similar to SA vis a vis RoW	Quasi currency board arrangement vs ZAR
South Africa	Float	Inflation target	Some controls on capital outflows.	Capital market highly integrated into global markets. Volatile XR. Concerns about currency overvaluation, driven by capital inflows. Some reserve accumulation, but concerns about cost of sterilization.
Zambia	Float	Monetary aggregate target (RMP)	Liberalized	XR volatility an issue, but no attempt to directly manage.
Zimbabwe	No separate legal tender. Multi-currency system with USD, ZAR, EUR, GBP & BWP permitted. USD dominant.	None	Some controls	Debate over whether / when to restore domestic currency. Serious institutional and policy credibility issues, and political instability

Source: Author

Figure 6: The "Trilemma" in SADC



*Note: Plans for a common SADC currency – but no plans for convergence of monetary and exchange rate policy frameworks*

## Conclusion

There is no such thing as a “best” policy framework; a range of options is available and can work in different circumstances.

The use of a heavily managed or pegged exchange rate is best suited to very small open economies or economies with little financial integration. A managed exchange rate can provide a useful nominal anchor, especially to a large trading partner with a strong monetary policy of its own. It is well suited to commodity exporters with a strong balance of payments, especially if surpluses lead to reserve accumulation that can provide some monetary policy flexibility; and can help prevent Dutch disease and shelter from terms-of-trade shocks. A managed exchange rate, however, carries the danger of misalignments in the real exchange rate.

Experience suggests that for larger and more developed emerging markets some degree of flexibility in the exchange rate is optimal when combined with active monetary policy (monetary or inflation targeting). The arrangement however needs to be carefully tailored to avoid policy conflicts.

## References

Aizenman, Hutchison & Noy (2008) “Inflation targeting and real exchange rates in Emerging Markets” (NBER)

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Ostry, Ghosh & Chamon (2012) “Two Targets, Two Instruments: Monetary and Exchange Rate Policies in Emerging Market Economies” (IMF SDN)

Figure 7: Exchange Rate Policies in Africa (IMF de facto classification, 2010)

