Reserves management

by Ayman Alsayari[1]

Abstract

This note discusses FX reserves management as practised by emerging market economies and, more specifically, by Saudi Arabia. It shares the Saudi Arabian Monetary Authority's experience on reserve adequacy, investment objectives, philosophy and process, portfolio tranching, risk management and performance measurement. It also includes some discussion of active and passive investment strategies, investment committee governance and institutional values.

Keywords: reserves management, reserve adequacy, investment philosophy, investment process, portfolio tranching, performance measurement, risk management.

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[1] Deputy Governor for Investment, Saudi Arabian Monetary Authority.

1. Introduction

Historically, central banks have held reserves to maintain the convertibility of the domestic currency at a fixed rate of exchange (originally, of course, the reserves were gold under the gold standard system). That system evolved into one of adjustable pegged exchange rates (the Bretton Woods system) and then into more flexible exchange rate arrangements.

Reserves management policies and practices differ at central banks, depending upon their level of sophistication and the country-specific circumstances. The FX reserves of developed economies have not been as high as those of emerging market economies (EMEs), given their established access to international markets and an advanced institutional structure.

In the 1970s and 1980s, EME central banks found themselves with growing dollar reserves (often a consequence of high commodity prices). The initial strategy was to assume that this was a transient phase of economic development, and they took an overwhelmingly conservative approach with a short-duration US dollar bond programme to meet the overriding objectives of liquidity and capital preservation. As equity and bond markets in developed economies became more liquid (and it became clear that large FX reserves were here to stay), progressive central banks adjusted their risk appetite and started investing in risk assets (such as equities and credit products, followed in recent years by EME assets). The emphasis shifted from merely focusing on liquidity to include risk-adjusted return. The choice of well known benchmarks for relative portfolio performance reflected institutions' desired level of risk.

Broadly speaking, central banks take a portfolio tranching approach by dividing the portfolio into:

- a liquidity portfolio (with an emphasis on investing in high-quality liquid assets for immediate deployment); and
- an investment portfolio (with a focus on return, and greater scope for diversification).

As it became apparent that typical active managers could not consistently beat their index, the investment universe tilted towards passive products, leading to a surge of ETFs, with rising interest in (smart) beta strategies.

A marked distinction between developed economy and EME central banks is that the latter tend to hold a much higher level of FX reserves relative to GDP. There are a number of reasons for this:

- the major developed economies (European Union, Japan, United Kingdom, United States) have "clean" floating exchange rates with no or rare FX intervention;
- their currencies have global credibility as the core holdings of institutional investors;
- central banks in developed economies have swap and credit lines that are either not available to EME central banks or are too onerous in terms of operational cost; and
- EMEs lack these factors and need reserves to meet the FX needs of the government, the private sector and (often large and unpredictable) capital

outflows, which may be part of a crisis that has nothing to do with them (eg the global financial crisis arose in the United States but led to withdrawals of capital from EMEs).

This tendency to hold large FX reserves gained momentum following the Asian financial crisis in 1997–98, as emerging market central banks accumulated FX reserves as an insurance against any eventualities.

2. FX reserves management – SAMA's experience

The Saudi Arabian Monetary Authority (SAMA), the central bank of Saudi Arabia, has been managing FX reserves since its inception in 1952, and on a large scale since the 1970s. SAMA's reserves management has evolved over time as it accumulated reserves and gained expertise. This section seeks to address reserve adequacy, investment objectives, philosophy and process, portfolio tranching, risk management and performance measurement.

2.1 Reserve adequacy

The IMF formula for assessing reserve adequacy considers the major potential risks for an economy from a shock to the balance of payments, but its shortcoming is that it is applied equally to EMEs which may have very heterogeneous capital outflows. In practice, each country's reserve adequacy target depends on specific circumstances. These include:

- the exchange rate regime – more reserves are needed to support a peg than a floating currency;
- the structure of the economy – a monoline commodity exporter is more vulnerable to economic shocks than a diversified economy and needs more FX reserves;
- the linkage between government spending and foreign exchange outflow – where government spending mostly depends on export revenues rather than domestic taxes, there is a close relationship between the two. This is because the injection of demand into the economy from government spending leads to higher imports;
- external indebtedness – external debt requires servicing and repayment out of foreign exchange; and
- foreign investment – foreign holders of local currency assets will want to be able to sell their holdings and exchange the local currency into their base currency.

Reserves are an essential external liquidity buffer. There are broad reserve adequacy guidelines, based on empirical studies and reserves management practices, but there is no ideal formula for all economies, and the right level of reserves can vary for a single economy over time. This is because the level of reserves needed is based on the demand for FX by the government and private sectors, and also on protecting against external shocks of varying sorts.

Although there is no ideal formula, it has been clear since the Asian crisis some twenty years ago that "runs" on FX reserves are more likely to happen if it is perceived

that FX reserves are not adequate. In other words, there is a virtuous circle where high FX reserves reduce the likelihood of a crisis (in technical terms for a pegged exchange rate regime, where there is a "credible peg"). This is also due partly to the fact that, when the authorities have adequate FX reserves, they do not have to resort to hiking interest rates to protect the currency, which may be politically unpopular.

Applying these general points to Saudi Arabia, it needs first to be stated that, for SAMA, reserve accumulation is not a policy choice. Unlike at most other central banks, SAMA's FX reserve accumulation is involuntary, as it is linked to oil revenue, which is a function of Saudi Arabia's output level and the price of oil. While we have discretion over our output level, the oil price exhibits no duration dependency; in other words, it is an unpredictable random walk. The historical policy challenge for Saudi Arabia has been to accumulate sufficient reserves when the oil price is strong so that they can be drawn down when the oil price is weak, without threatening the credibility of the riyal-dollar peg in place at SAR 3.7500 since 1986.

SAMA's reserve adequacy metric takes into account the following factors:

- 100% mandatory currency backing, standard import cover, foreigners' remittances, a certain percent of broad money M3 (against a potential bank run), short-term debt cover (against a contingency of balance sheet crisis) and government debt servicing. External borrowing to buttress FX reserves has its uses, but it is not a permanent asset because it needs to be repaid.

Historically, there has been a strong correlation between government spending and foreign exchange outflow for two reasons:

- FX earnings come overwhelmingly from oil produced in the state sector, and when they are disbursed through government spending, this stimulates demand in the economy; and
- the country's heavy reliance on imports of goods and services.

SAMA has developed its own internal models to validate reserve adequacy and assess reserve requirements. These models take into consideration global practices and incorporate some specific macroeconomic factors relevant to Saudi Arabia and are regularly backtested to ensure their soundness.

To summarise: reserve adequacy is a blend of both quantitative and qualitative factors. It also requires a subjective judgment to be applied on historical linkages and the volatility of capital flows. Saudi Arabia's FX earnings tend to be volatile, which calls for holding a good precautionary cushion of FX reserves. Even if swap/credit lines were available, they differ from reserves in that they do not constitute an asset and their availability in times of stress is not certain. Any compromise on reserve adequacy could impair institutional credibility with higher than desired cost implications for the economy.

2.2 Investment philosophy and process

SAMA has three investment objectives: to preserve capital, maintain liquidity and achieve an investment return compatible with its risk appetite. The philosophy is to have a globally diversified portfolio via top-down asset allocation, which is critical to generating returns. There is no one standardised solution for allocating assets. It is a process of progression and fine-tuning. Strategic asset allocation (SAA) adheres to a base policy mix. SAMA reviews its Investment Policy Statement (IPS), which includes

SAA and operating guidelines, annually. Tactical asset allocation (TAA) seeks to capitalise on investment opportunities from a higher frequency of revision.

SAMA's investment process is built around relative weightings against the strategic benchmark. Operational benchmarks are chosen based on SAMA's risk tolerance. Manager selection focuses on their competence and alpha-generating capability in active mandates. Most managers follow the bottom-up process. Thus, the investment process blends both top-down and bottom-up approaches.

2.3 Portfolio tranching

FX reserves are split into two portfolios to optimise a blend of high-quality liquid instruments for reserves management, and risk assets for risk-adjusted returns. Asset allocation remains SAMA's prerogative.

- The **Reserve Portfolio (RP)** includes money market instruments and high-quality government bonds.
- The **Investment Portfolio (IP)** includes growth assets, hedge assets and real assets. IP uses asset roles rather than asset classes to create a non-correlating asset mix to stabilise returns.
- **Currency composition** is a function of asset allocation. SAMA does not engage in currency overlay strategies.

The larger the amount set aside for RP, the smaller the IP and the lower the investment returns over time. This means that SAMA expects investment returns to rise as FX reserves increase, and to drop when reserves decline.

2.4 Performance measurement and risk management

Performance and Risk Management (PRM) is a middle office function dealing with performance measurement, risk monitoring and the level of compliance relative to guidelines. SAMA uses standard as well as customised benchmarks for relative performance measurement.

SAMA has adopted the asset owners' recommendations of Global Investment Performance Standards (GIPS) in measuring portfolio performance. GIPS provide a set of standardised industry-wide principles that guide investment firms in calculating and presenting investment results.

Following the global financial crisis, risk management and compliance have assumed greater significance. SAMA's risk management parameters take into account currency positions, credit criteria, counterparty and operational risks among others.

Performance data are not formally released, but the size of reserves is reported publicly every month in line with IMF guidelines.

2.5 Active vs passive mandates

SAMA maintains a blend of active and passive strategies to capture beta as well as alpha. Active strategies seek to exploit market anomalies (focus on optimising alpha) while passive strategies focus on low-cost market tracking. Active and passive strategies are well suited to inefficient and mature markets respectively. Passive

strategies seek to capture market beta, which is a growing trend in the industry in mature markets for reasons of cost-effectiveness and exposure to broad beta. The risk of active management is in hiring closet indexers and that of passive management is sectoral allocation risk in a crisis (for example, post-crisis, the financial sector took a beating due to a massive correction).

2.6 Investment committee roles and responsibilities

The Governor heads SAMA's Investment Committee (IC), which comprises senior executives and internal investment professionals. The IC meets on a quarterly basis to discuss the Investment Deputyship presentation including tactical investment recommendations based on FX flows, asset position, global themes/market trends, the investment matrix, portfolio actions, and portfolio performance. The IC goes by a best practice framework, which focuses on institutional coherence (commitment to clarity and investment objectives) and disciplined decision-making (informed and accountable choices). Upon the Governor's approval of the investment programme, its execution is the responsibility of the Investment Deputyship.

The Investment Deputyship recommends investment guidelines, objectives and performance benchmarks for approval by the Governor acting as chair of the IC.

2.7 Investment deputyship values

The deputyship operates from a single location in the central bank. It emphasises staff integrity, teamwork, a culture of openness, information-sharing, mutual dependency and collective purpose. It strongly believes that the combination of experienced hands and fresh minds invigorates the thinking process for better performance. In doing so, the deputyship has adopted best practices in corporate governance, with clear job descriptions and responsibilities as well as segregation of front, middle and back office operations.

3. Conclusion

Reserves management is a dynamic process. Asset allocation is critical for generating return. Experience shows that investment process pays off in the long run. There is no ideal formula for reserve adequacy, which is a blend of both quantitative and qualitative assessment. Prudent ranges of reserve buffers depend on the underlying characteristics of the economy. For a pegged exchange rate regime, it is best to seek a "credible peg" status. The required precautionary element in reserve adequacy may have some insurance cost but this is worth incurring against any unknown event. Any compromise on reserve adequacy could impair institutional credibility with higher than desired cost implications for the economy (such as higher inflation and elevated interest rates leading to slower growth).