Ravi Menon: How Singapore manages its reserves

Keynote speech by Mr Ravi Menon, Managing Director of the Monetary Authority of Singapore, at the National Asset-Liability Management Europe Conference, Singapore, 13 March 2019.

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Ladies and gentlemen, good morning.

Singapore has official foreign reserves (OFR) of almost US$300 billion.

- In absolute terms, this is the eleventh highest stock of OFR in the world.
- As a percentage of GDP and on a per capita basis, it is the third highest in the world.
- Singapore's OFR sit on the balance sheet of the Monetary Authority of Singapore (MAS), the central bank and integrated financial regulator.

Besides the OFR, there are two other pots of national reserves in Singapore:

- The Government of Singapore Investment Corporation (GIC), a fund management company, manages on behalf of the Singapore Government a diverse portfolio of foreign assets – well in excess of US$100 billion.
- Temasek Holdings, an investment company wholly owned by the Singapore Government, holds equity stakes in a variety of domestic and foreign corporates, amounting to more than US$200 billion.

This morning, let me try to answer three questions:

- What role do the reserves play?
- How are the reserves accumulated and managed?
- How are the OFR managed?

Why does Singapore hold reserves?

Singapore's reserves serve three objectives:

- one, to serve as a buffer against crisis;
- two, to provide a stream of investment income to help finance part of the annual government budget; and
- three, to maintain confidence in Singapore's exchange rate centred monetary policy.
  The reserves are thus a rainy day fund, an endowment fund, and a stability fund.

The imperative to hold a buffer against crisis is rooted in Singapore's geography and history.

- Singapore is a city state smaller than Greater London.
- It has no natural resources and imports most of its food, including water.
- When it became independent in 1965, it had no hinterland and meagre financial reserves.
- It depended mostly on entrepot trade and hardly had an industrial base.
- It was not expected to survive, let alone succeed.

An acute sense of vulnerability has been part of Singapore's DNA since its birth. This sense of vulnerability, in turn, underpinned two convictions:

- first, that the only way to survive and make a living is to make ourselves relevant to the

world; and
- second, we must build up strong buffers so that we can withstand the shocks that come with being so small and open to the world.

As Singapore grew and prospered as a business and financial centre, its vulnerabilities to the the vagaries of global trade and financial cycles also grew.

- The need to build up a sufficient rainy day fund to tide us through shocks and crises has remained as relevant as ever.
- Total trade is three times the size of the Singapore economy.
- Gross capital flows into and out of Singapore are 77% of GDP.

The role of the reserves as a rainy day fund is not theoretical. The reserves have indeed served us well in past crises.

- They helped underpin confidence in Singapore in the throes of the Asian Financial Crisis.
- And during the Global Financial Crisis, the reserves were drawn down to finance a package of measures, to preserve jobs by subsidising employers' wage bills and to help viable companies stay afloat by sharing the risk of bank lending.

A second purpose of the reserves is to serve as an endowment.

- This purpose has grown in importance – and salience - in recent years.
- The income from investing the reserves provides an increasingly important source of revenue to fund government expenditure.
- The size of government in Singapore is small. Government spending – comprising both operating and development expenditure – is just about 16% of GDP.
- But tax and non-tax revenues are even lower, at 15% of GDP.
- In other words, Singapore runs a structural deficit on its primary fiscal balance.

This is where the investment income from the reserves comes in.

- The Constitution of Singapore bars the government from borrowing to spend or to spend surpluses accumulated from previous terms of government.
- Instead, it allows the government to spend up to half of the expected long-term real returns from the net assets invested by MAS, GIC, and Temasek.
- This is known as the Net Investment Returns Contribution (NIRC).
- The NIRC is already the largest single contributor to revenues in the government budget, accounting for about one-fifth of revenues.

The role of the reserves as an endowment from which to draw a steady stream of income to finance the government budget will become even more important in the years ahead.

- An ageing population will mean higher expenditures, especially for healthcare, and slower economic growth will mean lower tax revenues.

The third purpose of the reserves is to serve as a stability fund. More specifically, the reserves help to maintain confidence in Singapore's exchange rate-centred monetary policy framework.

- As Singapore is a small and highly open economy, inflation and aggregate demand are more significantly influenced by the exchange rate rather than interest rates.
- Singapore's monetary policy is therefore centred on managing the exchange rate of the Singapore Dollar against a basket of currencies within a policy band.

- The reserves play an important role in enabling MAS to conduct monetary policy and to secure macroeconomic stability.

How are the reserves accumulated and managed?

So, how are the reserves accumulated and managed? As I mentioned earlier, Singapore's reserves are held and managed in three distinct pots: the MAS, GIC, and Temasek.

- The government sets the overall investment objectives for the three entities and monitors the risk and return profile of the total reserves.
- But it plays no role in the investment decisions by the three entities, which are made on purely professional grounds.

MAS, as Singapore's central bank, manages the OFR. The process of accumulating or using OFR is intricately tied to MAS' conduct of monetary policy.

- The MAS may accumulate or sell foreign assets, principally through its intervention operations in the foreign exchange market, to manage the float of the Singapore Dollar.
- Given Singapore's positive net savings and persistent capital inflows, the nominal exchange rate often tends to appreciate more than what is required to keep inflation low and stable.
- The MAS accumulates foreign assets on average in the process of managing the Singapore Dollar within its policy band even as it sells foreign assets during times of stress on the Singapore Dollar.

As the central bank, the MAS is the most conservative of the three investment entities, with the OFR invested mainly in safe and liquid assets.

- The OFR is sized to take into account its role as a buffer against a large and sudden outflow of capital that would undermine confidence in the exchange rate and Singapore's macroeconomic stability.
- Traditional measures of reserve adequacy such as the number of months of imports the OFR could finance if all other sources of foreign financing dried up are less relevant for Singapore.
- A sizable and liquid OFR sends a clear signal that MAS has the wherewithal to resolutely defend the Singapore Dollar against speculative attacks.

The GIC is a professional fund management company that manages the government's foreign assets. These assets are separate from the OFR.

- The history of GIC begins with the MAS.
- Through the 1970s, Singapore ran persistent fiscal surpluses, received sizeable capital inflows, and had an elevated private savings rate.
- This led to a substantial accumulation of OFR, well in excess of what was required for MAS' central banking operations.
- So, in 1981, the GIC was set up – in today's parlance, a sovereign wealth fund – to manage part of the reserves for higher returns without the central bank constraints of liquidity.
- Part of the OFR was transferred from MAS to GIC, which was tasked to invest the reserves in a globally diversified portfolio of asset classes with a higher risk profile to deliver good long-term returns.

The third pot of reserves is managed by Temasek Holdings, an investment company wholly owned by the government.

- Temasek's history also dates back to the early years of Singapore's development.
- There was little private capital in those days but a rapidly industrialising economy needed key infrastructure – in aviation, in shipping, in telecommunications, in banking, and so on. The government therefore set up enterprises in these areas.
- Temasek was formed as a holding company in 1974 for these enterprises so that the government could focus on its roles of policy making and regulation without conflict, while Temasek would own and manage these investments on a commercial basis.

Today, Temasek is an active, equity investor that aims to deliver sustainable long-term shareholder value.

- More than a quarter of Temasek's portfolio is invested in Singapore, with the rest invested in Asia and global markets.
- The initial portfolio was provided by the government, but since then, Temasek's funds have come mainly from the investment growth of its own portfolio.
- Compared to MAS and GIC, Temasek is further out on the risk-return spectrum.

How are the OFR managed?

Let me now move to the third question: how are the OFR managed? This is the portion of the reserves that MAS is responsible for.

There are three prongs to MAS' approach to managing the OFR

- robust risk management;
- balanced asset allocation; and
- efficient investment process

Robust risk management

The starting point to MAS' approach to managing the OFR is its risk management framework, which sets out the liquidity and risk tolerance levels of the OFR. These relate to:

- the ability of the portfolio to meet liquidity needs under stress conditions; and
- the maximum loss of the portfolio under tail risk scenarios.

These liquidity and risk tolerance levels are determined on the basis of what is minimally required to meet the objectives of the OFR in supporting MAS' conduct of monetary policy. They are factored in the construction of the MAS portfolio and closely monitored on an ongoing basis.

MAS employs a comprehensive range of stress tests to assess the risks to the portfolio on an ongoing basis and establish whether the portfolio remains resilient to potential tail risk events over the medium term.

Three types of stress tests are conducted:

- *Historical*: Shocks are applied to the portfolio using asset price movements seen in historical stressed episodes, such as the Global Financial Crisis, 2000 dot-com bust, 1994 bond market selloff, etc.
- *Vulnerability-based*: The portfolio is subject to hypothetical scenarios which stress in turn each of the portfolio's risk factors such as equity, interest rate, credit, inflation, and foreign exchange.
- *Thematic*: These are forward-looking stress tests and are designed by taking into account prevailing market conditions and potential risk events on the horizon.

Depending on the stress test results, MAS will consider appropriate responses and portfolio adjustments when needed.

The risk management framework is reviewed on a regular basis to ensure it remains fit-for-purpose.

Balanced asset allocation

Subject to the liquidity and risk tolerance thresholds, MAS seeks to achieve good long-term returns on the OFR through a balanced asset allocation.

MAS invests the OFR in a well-diversified portfolio, probably more diversified than is the case for most central banks.

- The portfolio is *geographically diversified* across advanced and emerging market economies, with investment-grade bonds in advanced economies making up the largest share.
- The portfolio is *diversified across asset classes* – in cash, bonds and equities.
- The portfolio has a *diversified currency mix*, with about three-quarters of the OFR denominated in US Dollars, Euros, Japanese Yen and Pound Sterling, with the US Dollar forming the bulk.

Each asset class in the portfolio serves a function.

- Cash and nominal government bonds facilitate regular operational needs and can be quickly deployed to fulfil urgent liquidity needs under stressed conditions.
- Advanced economy inflation-linked bonds are less liquid than nominal bonds but provide inflation protection.
- Equities provide exposure to long-term growth assets with higher return potential but also with higher risk.

MAS' investment horizon is longer than that of many central banks.

- This has given MAS the flexibility to invest in more volatile (and longer 'duration') asset classes beyond fixed income, including equities.

Both the risk management framework and strategic asset allocation are approved by the MAS Board of Directors and reviewed regularly.

Efficient investment process

MAS strives to achieve an efficient investment process, underpinned by two elements:

- one, judicious benchmark selection and customisation; and
- two, tapping on specialised external investment expertise

First, benchmark selection. MAS uses asset class benchmarks to represent the investment universe and risk profile of each asset class that can be easily replicated, to evaluate its investment performance.

These benchmarks could be market-capitalisation weighted or customised.

- For some asset classes, we have chosen to apply certain customisations to market-capitalisation weighted benchmarks, guided by considerations of liquidity, stability, and concentration risk.

One area we have applied customisation is in the fixed income asset class, where it is relatively more important to guard against concentration risk.

- This is because the response to credit risk is more asymmetric for fixed income than for equities. There is limited upside for credit improvement but large downside from the threat of default.
- We have therefore limited our exposure to some large government bond markets, taking into account the default risk of these bonds.

Another area where we have customised our benchmark is with respect to Renminbi (RMB) assets, in particular Chinese government bonds.

- Here, the consideration was not to limit exposure but to gain exposure ahead of market benchmark inclusion as markets develop.
- MAS started investing in RMB assets in 2012, fully expecting market indices to catch up at some point.
- Indeed, recent announcements by major index providers to include or accelerate the schedule of inclusion for RMB assets in their indices reflect this trend.

Next, tapping on relevant investment expertise. Part of the MAS portfolio is managed by reputable external fund managers.

- These investment managers are hired for their deep investment expertise and specialised knowledge in particular investment fields.

For instance, factor-based investing is an area that we are watching closely.

- Institutional investors are starting to look beyond asset classes to view returns via a "factor lens".
- There are two applications of this approach, return enhancement and portfolio analysis.
- Looking through asset class labels to underlying risk factor exposures can enhance understanding of return sources.
- Flipping them around, they also help to enhance understanding of risk drivers.

In fact, the vulnerability-based stress tests that I described earlier is an application of this factor approach.

- This can help investors to create more efficient and diversified portfolios, compared to a traditional asset class-driven approach.
- But we are also mindful not to fall into the trap of data-mined quantitative strategies that rely on factors that may not be robust through time.

Conclusion

In Singapore, reserve management is a multi-objective, multi-agency, and most importantly, a multi-generational effort.

- The reserves serve as a buffer against bad times, as an endowment to finance current needs, and as a foundation for macroeconomic stability.
- As custodians of the national reserves, MAS, GIC, and Temasek owe a duty of care and responsibility to the ultimate beneficiaries of the reserves - current and future generations of Singaporeans.
- It is a duty that motivates our investment and risk managers as they go about their work

each day, trying to extract value while staying clear of pitfalls, amidst the turbulence, tides and ebbs of financial markets.

Thank you.