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MAY 2021

## Singapore's successful monetary policy turns 40



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## SINGAPORE'S SUCCESSFUL MONETARY POLICY TURNS 40

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Managing monetary policy in a small open economy is never easy. In this issue of *Infocus*, EFG Chief economist Stefan Gerlach looks at the Monetary Authority of Singapore's successful "crawling peg" regime, which this year turns 40.

Much attention is paid to how central banks in large economies, in particular the Federal Reserve and the ECB, set monetary policy.<sup>1</sup> Such economies are relatively closed and therefore not much affected by economic developments and disturbances abroad. In particular, the exchange rate is relatively unimportant. The central bank's focus is therefore on judging the underlying state of demand for goods and services and how it impacts inflation at a horizon of about two years.

But most central banks face different circumstances. They operate in Small Open Economies (SOEs) in which the exchange rate often plays a dominant role in determining economic outcomes. A sharp, unexpected exchange rate change can plunge the economy into recession or lead to a burst in inflation. Indeed, while flexible exchange rates are often thought of as shock absorbers, the experiences of SOEs is often that they function as shock generators.

### Managing the exchange rate

There are two main approaches to managing the exchange rate in a SOE. The first is to let it float freely. Since exchange rate changes impact inflation and economic activity, central banks nevertheless monitor the exchange rate and may adjust interest rates to offset any adverse macroeconomic effects it may have. Occasionally, the central bank may intervene in the foreign exchange market to prevent the exchange rate from moving excessively.

This is the approach that Switzerland followed between the breakdown in the early 1970s of the Bretton Woods system of fixed exchange rates and the global financial crisis in 2008. However, few central banks can afford to be aloof to exchange rate changes.

The polar opposite approach is to fix the exchange rate against a foreign currency. While this reduces the risk of unwarranted exchange rate movements impacting inflation and economic activity, it requires the central bank to focus solely on maintaining exchange rate parity. It must therefore disregard any domestic policy objectives. This is known as the "Impossible Trinity," which asserts that it is impossible to have

a fixed foreign exchange rate, free capital movement (without capital controls) and an independent monetary policy. Success is always uncertain, since it also requires prudent fiscal policy, which is outside the central bank's control.

Fixed exchange rates used to be common but few central banks now operate policy this way. Notable exceptions are Hong Kong, which has operated a currency board against the US dollar effectively since 1983, and Denmark, which operates a fixed exchange rate regime against the euro.

### Singapore's "crawling peg"

Since 1981, Singapore has very successfully followed an intermediate policy strategy. Much like a fixed exchange rate regime, the strategy reduces the risk of damaging short-term fluctuations in the exchange rate. But like a floating exchange rate regime, it allows the Monetary Authority of Singapore (MAS) to gear policy to domestic considerations.

The crawling peg regime is focused on the Nominal Effective Exchange Rate (NEER) of the Singapore dollar as the intermediate target of monetary policy.<sup>2</sup> The idea is that by steering the NEER, the MAS can achieve a desirable balance of inflation and economic activity in Singapore. While the MAS has good control of the exchange rate, it cannot precisely control it day-to-day. It therefore allows the exchange rate to move within a band around the target.

Since the objective of the MAS's monetary policy is "to maintain price stability conducive to sustained growth of the economy," the NEER has been allowed to appreciate gradually over time to limit inflation in Singapore (Figure 1).<sup>3</sup> The average rate of appreciation of the NEER can be estimated by studying the time periods during which, according to the MAS's announcements, the desired rate of change of the NEER was positive. Doing so gives an estimate of the average rate of appreciation of about 1.5% per year.<sup>4</sup> Market commentary suggests that the width of the band is generally in the order of  $\pm 2\%$ .

The way in which the MAS manages the exchange rate is unique, and reflects the exceptionally high import content

<sup>1</sup> In measuring the openness of the eurozone, it is essential to net out inter-eurozone trade.

See, for instance, [https://www.ecb.europa.eu/pub/pdf/other/mb199912\\_focus08.en.pdf](https://www.ecb.europa.eu/pub/pdf/other/mb199912_focus08.en.pdf)

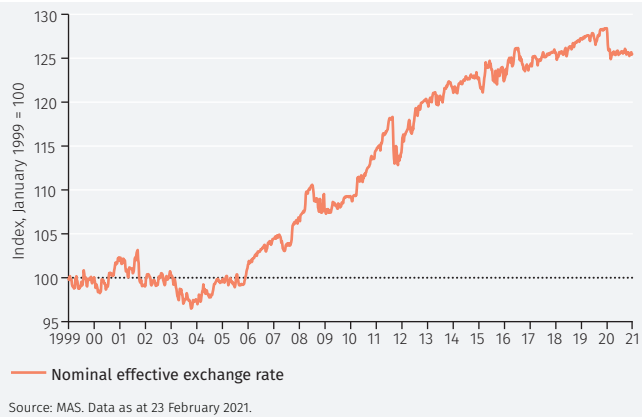
<sup>2</sup> The nominal effective exchange rate (NEER) is a weighted average rate at which one country's currency exchanges for a basket of multiple foreign currencies, where the weights are typically determined by the country's trade pattern. The nominal exchange rate is the amount of domestic currency needed to purchase the basket of the foreign currencies.

<sup>3</sup> See [www.mas.gov.sg/monetary-policy/Singapores-Monetary-Policy-Framework](http://www.mas.gov.sg/monetary-policy/Singapores-Monetary-Policy-Framework)

<sup>4</sup> Interestingly, the MAS has never indicated that the desired rate of appreciation was negative (that is, that it desired a depreciation of the Singapore dollar).

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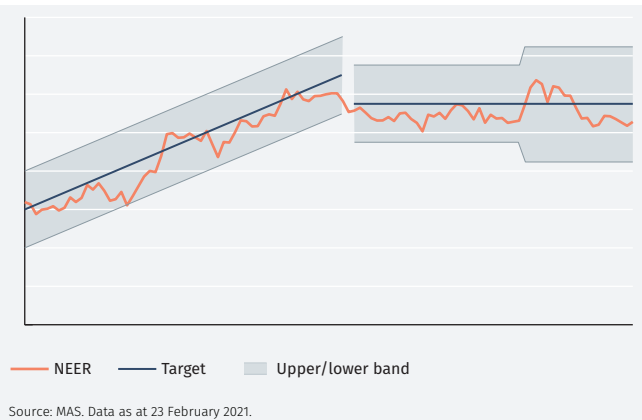
## 1. Singapore's Nominal Effective Exchange Rate (NEER)



of spending in Singapore. Thus, exchange rate changes have immediate and powerful effects on inflation and macroeconomic conditions more broadly.

To understand the mechanics, consider the illustration in Figure 2 below.

## 2. The mechanics of a crawling peg



The figure shows the NEER together with a “target” for the NEER and the band around the target.

To manage policy, the MAS has three choices to make.

1. Decide how quickly the target evolves over time, that is, the “rate of crawl.” In the figure this choice is captured by the slope of the target line. As Figure 1 and the table with the announced policy decisions in the Appendix show, in practice the rate of crawl has generally been positive, but on occasion the MAS has reduced the rate of crawl to zero, that is, it has sought to maintain the exchange rate at the current level.

2. Whether it would be desirable to shift the entire target band. In the figure, the target band is shifted down in the middle of the graph.
3. Determine the width of the band around the target. The MAS allows the exchange rate to deviate from the target within a band, whose width need not be constant. In the figure it is assumed that the band was widened towards the end of the time period considered.

## Keeping the exchange rate in the band

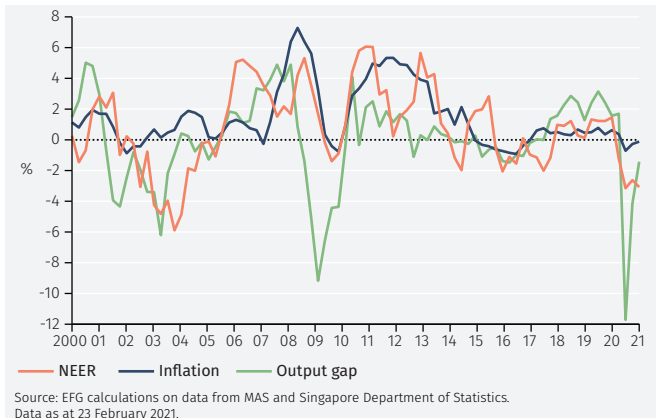
While the MAS announces the decisions made at its twice-yearly monetary policy meetings, it does not provide any quantitative details regarding the exchange rate objective. Thus, the exact location of the target and the edges of the band are unknown to market participants, but they do know if the MAS has increased or reduced the desired rate of appreciation of the NEER, or it is zero. They also know if the band has been widened or narrowed and whether the band has been shifted up or down.

Despite the fact that the MAS does not provide detailed technical information, market participants are well positioned to deduce the main features of the system in real time. Since the MAS has operated the system very successfully for 40 years, it has an exceptional track record and credibility. That facilitates the management of policy. Thus, if the exchange rate strays from the target, limited intervention in the foreign exchange market is sufficient to signal to market participants that the MAS believes that the exchange rate has moved too far, and to nudge it towards the desired level.

## MAS conduct of policy

So how has the MAS conducted monetary policy? Focussing on the period 2000 to 2020, Figure 3 shows the rate of growth over 4 quarters of the NEER (taken here as the measure of the

## 3. NEER, inflation and the output gap





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stance of monetary policy) with inflation and the output gap. The figure shows that the MAS lets the NEER strengthen when inflation is relatively high and the output gap is positive (real GDP exceeds potential).

These impressions are supported by estimates of a so called “reaction function,” according to which the MAS sets its policy variable as a function of the rate of inflation and the output gap. The estimates shows that a 1% increase in inflation or rise in the output gap leads to an 0.2% higher rate of growth of the NEER in the same quarter, and about a 0.6-0.7% permanently higher growth rate of the NEER if the increases in inflation and the output gap were permanent.<sup>5</sup> Interestingly, the adjustment of the growth rate of the NEER to changes in macroeconomic conditions is quite rapid, with half of any adjustment undertaken in 2.2 quarters.

### Inflation control

As noted above, given the focus on price stability in the MAS's mandate, the MAS has allowed the NEER to appreciate gradually over time. Using data on CPI inflation in Singapore and the real and nominal effective exchange rate, it is possible to compute a weighted average of inflation in Singapore's trading partners. Over the period 1995-2020, it averaged 2.4% per year. In contrast, inflation in Singapore averaged 1.4%. While inflation in Singapore, as in many other countries, experienced sharp gyrations around the time of the Global Financial Crisis and afterwards, it has generally been below 2% (see Figure 4)

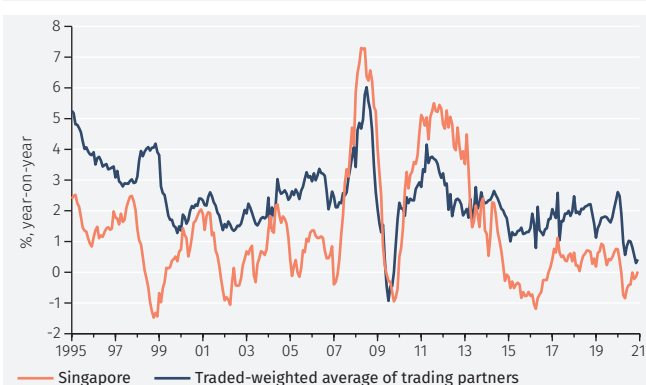
### Conclusions and outlook

The MAS has successfully managed monetary policy in Singapore since 1981 using a unique approach that is focused on the NEER in light of the exceptional openness of the economy. Policy is expressed in terms of the slope of the target for the exchange rate and the width of the band around the target. Policy makers may also move the target and band up or down in light of economic conditions. While these details are not announced, market participants have a good sense of these parameters in real time. Should the exchange rate stray too far from the desired level, the MAS can nudge it back by intervening in the foreign exchange market. Since the MAS is highly credible, limited intervention is enough to move it towards the target.

In its last monetary policy statement, published on 14 April, the MAS announced that it would maintain its current policy stance, involving a zero percent per annum appreciation of the currency, with no change in the currency band or the level at which it is centred.<sup>6</sup> This decision reflects the MAS' expectation that inflation will rise only gradually, but remain below its historical average, in 2021, and that the output gap will remain negative.

The next policy meeting will take place in October. Whether the MAS will change its policy stance will depend on whether inflation rises more strongly than is currently expected. In turn, that will depend on how the Covid-19 pandemic evolves, which, at the moment, is anybody's guess.

#### 4. Inflation: Singapore and trading partners



Source: EFG calculations on data from Singapore Department of Statistics and BIS. Data as at 23 February 2021.

<sup>5</sup> Of course, such permanent increases are unlikely in practice

<sup>6</sup> <https://www.mas.gov.sg/news/monetary-policy-statements/2021/mas-monetary-policy-statement-14apr21>

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## APPENDIX

### A1. Monetary policy decisions by the MAS since 2001

Date	Slope of band	Width of band	Level at which band is centred
14 October 2020	–	–	–
30 March 20	0%	–	Re-centre downwards, at prevailing level of the S\$NEER
14 October 2019	Reduce slightly	–	–
12 April 2019	–	–	–
12 October 2018	Increase slightly	–	–
13 April 2019	Increase slightly	–	–
13 October 2017	–	–	–
13 April 2017	–	–	–
14 October 2016	–	–	–
14 April 2016	Set at 0%	–	–
14 October 2015	Reduce slightly	–	–
14 April 2015	–	–	–
18 January 2015	Reduce	–	–
14 October 2014	–	–	–
14 April 2014	–	–	–
14 October 2013	–	–	–
12 April 2013	–	–	–
12 October 2012	–	–	–
13 April 2012	Increase slightly	Restore narrower band	–
14 October 2011	Reduce	–	–
14 April 2011	–	–	Re-centre upwards, to below prevailing level of the S\$NEER
14 October 2010	Increase slightly	Widen slightly	–
14 April 2010	Increase	–	Re-centre upwards, to below prevailing level of the S\$NEER
12 October 2009	–	–	–
14 April 2009	–	–	Re-centre upwards, to below prevailing level of the S\$NEER
10 October 2008	Set at 0%	–	–
10 April 2008	–	–	Re-centre upwards, to below prevailing level of the S\$NEER
10 October 2007	Increase slightly	–	–
10 April 2007	–	–	–
10 October 2006	–	–	–
11 April 2006	–	–	–
11 October 2005	–	–	–
12 April 2005	–	–	–
11 October 2004	–	–	–
12 April 2004	Increase	–	–
10 October 2003	–	–	–
10 July 2003	–	–	Re-centre downwards, at prevailing level of the S\$NEER
2 January 2003	–	–	–
11 July 2002	–	–	–
2 January 2002	–	Restore narrower band	Re-centre downwards, at prevailing level of the S\$NEER
10 October 2001*	–	Widen	–
12 July 2001	Set at 0%	–	–
22 February 2001**	–	–	–

\*Denotes an off-cycle monetary policy announcement. Since October 2003, MAS' semi-annual monetary policy cycle has been scheduled for April and October. \*\*First release of the Monetary Policy Statement by MAS.

Source: MAS, [www.mas.gov.sg/monetary-policy/past-monetary-policy-decisions](http://www.mas.gov.sg/monetary-policy/past-monetary-policy-decisions)

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