Asset Purchases by Central Banks

What are asset purchase programmes by central banks? Are they similar to quantitative easing (QE)? When is the appropriate time for asset purchases? This box article provides an overview of asset purchases by central banks globally. It examines the differences between purchases in advanced economies (AE) and emerging market economies (EME), and provides some key considerations in the context of Malaysian financial markets.

Background on asset purchases by central banks in AE and EME

An asset purchase programme refers to the purchase of financial assets (e.g. domestic government bonds, corporate bonds or asset-backed securities) by central banks via the creation of central bank reserves. This leads to an expansion of the central bank's balance sheet as it injects liquidity into the financial system. During the onset of the Global Financial Crisis (GFC), central banks in AE deployed large scale asset purchase (LSAP) programmes to mitigate the impact of the tightening of financial conditions on the financial markets and economy, conditions in which credit could also be restricted by excessive volatility and illiquidity in the financial markets. These programmes were then retained post-GFC as a tool for monetary easing to support economic activity given the persistent weakness in economic growth, commonly known as QE. The primary objective of these QE programmes were to encourage household spending and business investment by lowering long-term interest rates and signalling the central banks' commitment to retain monetary accommodation for an extended period. In conventional monetary policy, central banks typically aim to achieve a price-based operational target, say an interest rate target. LSAP programmes are deemed an unconventional quantity-based monetary policy tool[1] as they expand the balance sheet size of the central bank to achieve further monetary accommodation (Borio and Zabai, 2016). They are typically undertaken when short term rates cannot be lowered further due to constraints from the zero-lower bound/ effective lower bound (International Monetary Fund (IMF), 2013). As global economic activity came to a halt following the COVID-19 pandemic, central banks in AE, whose policy rates remained close to zero, once again embarked on larger LSAP programmes to support the economy.

LSAP is less commonly deployed by EME central banks

In contrast, asset purchase programmes have not been commonly used by EME central banks in past crises such as the GFC as there was sufficient policy space for conventional monetary policy to support economic recovery. However, following the severe impact of the COVID-19 outbreak on the domestic financial markets and economy, some EME central banks have initiated asset purchases, primarily focusing on government bonds.

In comparison with the LSAP programmes by AE central banks, these asset purchases by EME central banks are different in terms of their objective and scale. Based on a Bank of International Settlement (BIS) study (Arslan, Drehmann and Hofmann, 2020) on 13 EME central banks, the stated objectives of EME asset purchases were primarily to reduce temporary illiquidity conditions in the domestic financial markets and address market dislocation and excessive volatility as opposed to providing further monetary accommodation to spur economic growth. Meanwhile, some central banks have also stepped in to moderate the impact on bond yields from the significant increase in financing needs by their respective governments (Carson, Kondo and Goyal, 2020). In these instances, the central banks took due considerations to avoid the perception of sustained deficit financing so as to preserve the independence of the central bank. These measures are largely in line with EME central banks' objectives to ensure that the financial markets are able to intermediate funds effectively to support the real economy while ensuring the well-functioning of the local bond market. Consequently, EME central banks' asset purchase programmes are notably smaller (Chart 1) and temporary in nature compared to the sustained LSAP programmes implemented in AE.

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[1]   Besides LSAP, other forms of unconventional monetary policy tools available to central banks include forward guidance and longer-term liquidity injections with incentives to encourage bank lending. Examples of these long-term liquidity facilities include the Targeted Long-term Refinancing Operations (TLTRO) by ECB and the Term Funding Scheme with Additional Incentives for SMEs (TFSMEs) by BOE.

**Chart 1: AEs and Regional EMEs 2020 Asset Purchase Size**
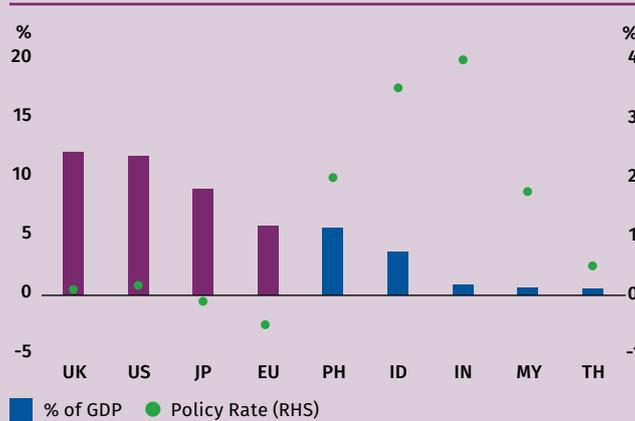
Source: IMF Global Financial Stability Report October 2020, Bloomberg
(Policy rates as at 10 March 2021)

Asset Purchases by Bank Negara Malaysia

Outright purchases of government securities have long been a part of the Bank's instruments for open market operations (OMO) in the bond market. The primary objective is to manage the banking system liquidity, whereby the Bank purchases government securities to inject temporary liquidity into the system as well as to build inventory for repo operations. The Bank's inventory is also used for its securities lending operations with the aim of promoting active two-way market making activities, particularly by Principal Dealers. As part of the Bank's mandate to ensure orderly functioning of the market, the Bank also steps in to purchase government securities during periods of excessive volatility and illiquidity. For example, after the US presidential election in 2016, RM4.3 billion in government bonds was purchased to smoothen excessive volatility and facilitate orderly price adjustment following large non-resident outflows. This was crucial to preserve the smooth functioning of the financial intermediation process and investors' confidence in the Malaysian financial market. Nonetheless, the Bank typically pares back its holdings (Chart 2) gradually as market stress subsides so as to minimise distortion to asset prices.

Chart 2: Bank Negara Malaysia and non-residents' Government Bond Holdings
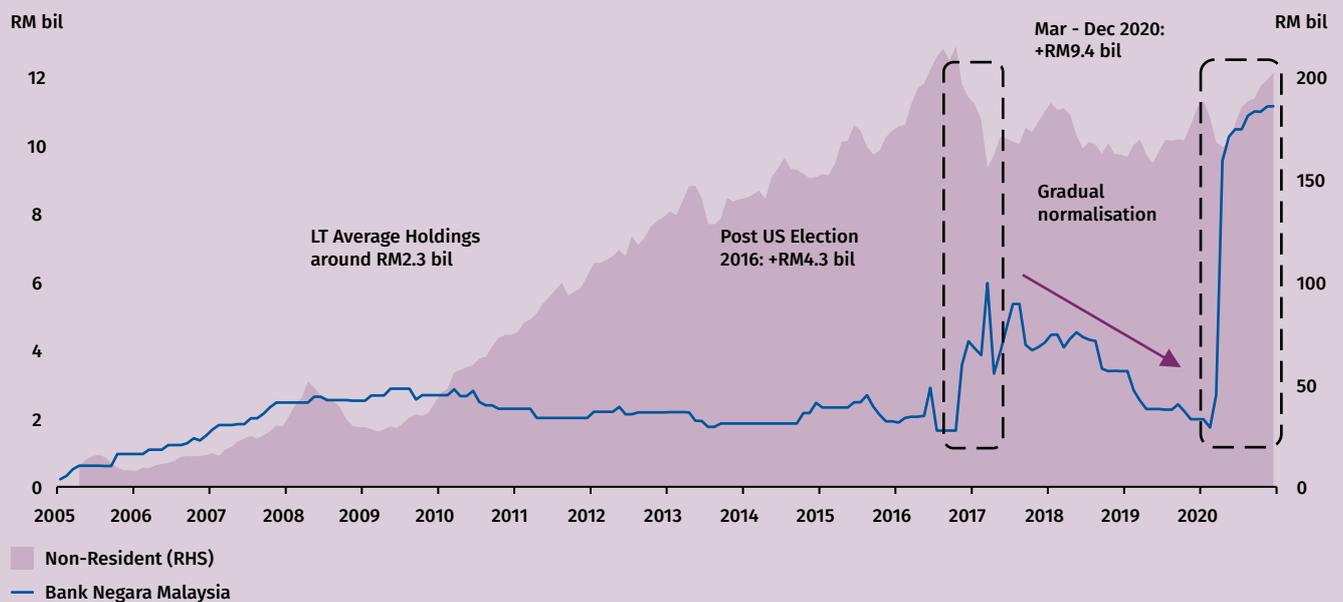
Source: Bank Negara Malaysia

During the COVID-19 pandemic in 2020, domestic financial markets once again came under pressure amid large outflows by non-residents. Like other central banks, the Bank pre-emptively stepped in to provide liquidity through its reverse repo operation, reduction in Statutory Reserve Requirement (SRR) ratio and government bond purchases. From March to December 2020, the Bank has conducted outright purchases of government bonds amounting to RM9.4 billion, which is the highest amount purchased to date. The Bank's purchases were mainly in the secondary market (94%) while primary market purchases constituted a small percentage (6%) of total purchases, with total holdings of government bonds at RM11.1 billion as at end-2020. These purchases provided sufficient liquidity in the market and facilitated orderly price adjustments amid earlier signs of market stress. In addition, it ensured the Bank's readiness to use purchased securities for open market operations. Consequently, the stress in the financial market subsided, as measured by the Financial Market Stress Index (Chart 3), and the Bank was able to taper its government bond purchases.

Chart 3: Financial Market Stress Index (FMSI) and Central Bank's Policy Response during COVID-19 Period
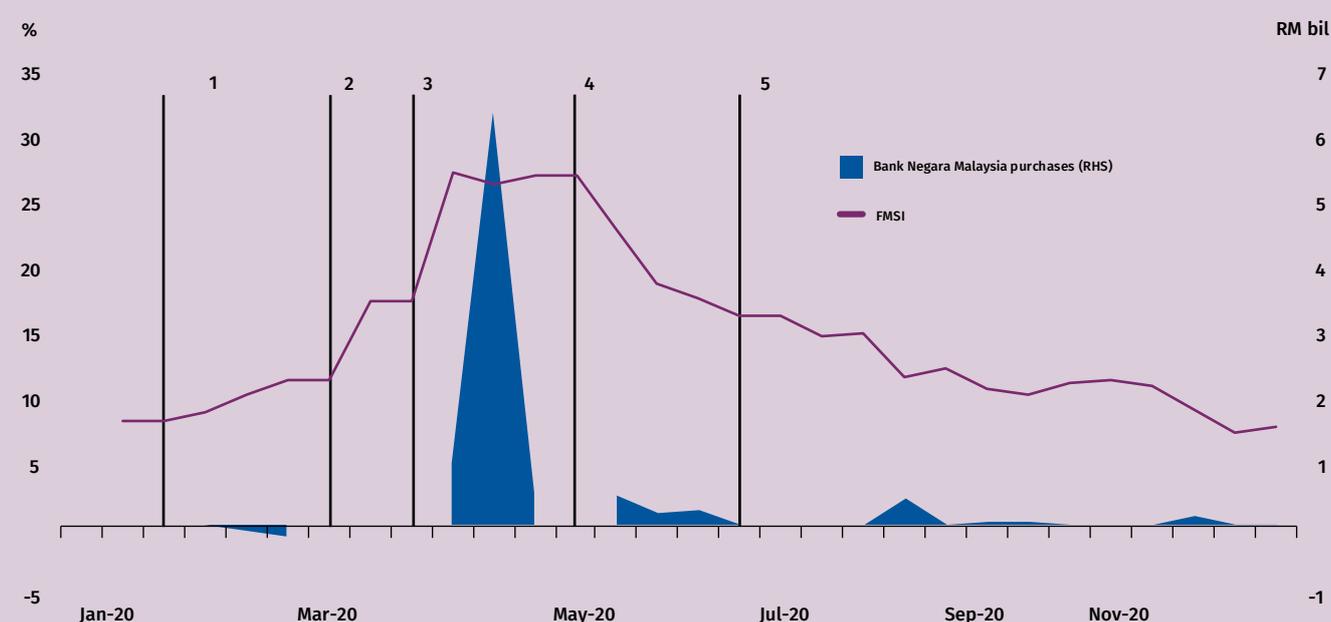
Note:
1. OPR cut of 25 bps (22 Jan 2020)
2. OPR cut of 25 bps (3 Mar 2020)
3. SRR cut of 100 bps and recognition of up to RM1.0 billion of MGS/MGII as part of SRR compliance by Principal Dealers (19 Mar 2020)
4. OPR cut of 50 bps and recognition of MGS/MGII to fully meet SRR compliance by banking institutions (5 May 2020)
5. OPR cut of 25 bps (7 Jul 2020)

Source : Bank Negara Malaysia

Domestic bond market remained resilient during times of stress

Overall, the Malaysian bond market weathered the crisis and remained well-functioning throughout 2020. The Government and corporates were able to tap the domestic bond market for funding in 2020 amid the historically low yield environment with a total net issuance of RM118.7 billion. Demand for government auctions continued to be well-supported with an average bid-to-cover ratio of 2.2x (5-year average: 2.3x). This was despite the larger gross issuance size amounting to RM148.8 billion compared to RM115.7 billion in 2019. Credit spreads for corporate bonds swiftly normalised towards historical average levels with sustained net issuances in the months following the peak crisis period. Meanwhile, yield volatility remained manageable and below that observed among regional peers as the bond market, with the presence of large domestic institutional investors, has the capacity to absorb large sales from non-residents.

Table 1: Comparison of 10 years government bond yield volatility with regional peers

	Peak to Trough Movement (bps)	Peak 30D Yield Volatility (%)
Malaysia	+77	44
Regional Average*	+95	75

*Includes Korea, Philippines, Indonesia, India and Thailand

Source: Bloomberg

Asset purchases is a legitimate policy option for central banks with limited conventional monetary policy space

Based on a recent study by the IMF (Sever, Goel, Drakopoulos and Papageorgiou, 2020), asset purchase programmes by EME central banks have contributed to the stabilisation of domestic financial markets as bond yields trended lower upon asset purchase announcements, without significant short-term impact on the exchange rate. Nonetheless, the study highlighted various significant risks relating to weakening of central banks' credibility, fiscal dominance, intensification of capital outflow pressures as well as market dynamics distortion if the "large-scale and open-ended purchase programs are deployed beyond the current pandemic-related state" (Sever, Goel, Drakopoulos and Papageorgiou, 2020, p.16).

An Introduction to Conventional Monetary Policy Space and Effective Lower Bound

Part A: The Zero Lower Bound (ZLB) has traditionally formed the basis of monetary policy space
Historically, it is believed that the limit of conventional monetary policy is at zero percent, and this concept is known as the zero lower bound (ZLB). According to this view, monetary policy cannot go below zero because should negative nominal interest rates prevail, investors, businesses and households would simply hoard cash, disrupting lending and borrowing activities. The concern is that it would result in counterproductive effects to the economy. Thus, when short-term interest rates approach zero, it is traditionally argued that central banks cannot stimulate demand by further lowering short-term interest rates, resulting in the economy entering a liquidity trap.

Part B: Cross-country experience in the past decade suggests that the effective lower bound can be above or below zero percent
Nevertheless, global experience in the past decade suggests that the effective lower bound (ELB) to monetary policy is not necessarily zero – it can be above or below zero (Table 2). It is usually characterised by a point below which policy rate cuts would result in net negative effects to the economy, with commonly-cited symptoms including a contraction in lending and economic activity (Brunnermeier and Koby, 2019, Vieghe, 2019; Carney, 2019). These symptoms could be caused by factors that go beyond concerns over the flight to cash (See "Part C: Factors that determine the ELB"). They could materialise even when the policy rate is above zero. Conversely, a few central banks have adopted negative nominal interest rate policy with arguably some success (IMF, 2017), suggesting that the ELB could be negative in certain economies.

Given this development, the standard term currently used to describe the limit of conventional monetary policy has evolved from the ZLB to the ELB (Bernanke, 2017). Given the prevailing policy rate, an economy with a higher ELB would have limited conventional policy space because there are only so many policy rate reductions that can be undertaken to stimulate demand. Conversely, a lower ELB means that central banks have greater conventional policy space at their disposal.

Table 2: Cross-country ELB

ELB is positive or negative?	Country (policy rate as at early March 2021)	Published ELB		
Positive or near zero	Brazil (2.00%)	"Nobody is quite sure where the lower bound is" **"ELB is dynamic" and "significantly higher in emerging economies"** (June & May 2020, Reuters citing the President and Copom members of Banco Central do Brasil)		
	Canada (0.25%)	**0.25%** (2009-Present, cited in the Bank of Canada's press releases of monetary policy decisions)		
	Republic of Korea (0.50%)	**Close to 0.50%** (May 2020, Bloomberg citing the Governor of the Bank of Korea)		
	Thailand (0.50%)	**Above zero & depends on the prevailing economic and financial environment** (June 2015, cited in the Bank of Thailand's Monetary Policy Report)		
	United Kingdom (0.10%)	**Exploring negative rates** (May 2020, cited in interviews with the Bank of England's Monetary Policy Committee members)	"Close to but above zero" (2016-2020, cited in speeches by the Bank of England's Monetary Policy Committee members)	0.50% (2009-2016, cited in speeches by the Bank of England's Monetary Policy Committee members)
Negative	**Median rates among currently negative rate countries[1]: -0.6%**			

[1] Refers to Switzerland, Denmark and Japan, based on BIS data series on central bank policy rates, last updated on 17 February 2021
Source: Central bank websites, notes and press conferences, Reuters.com (2016), (2020a), (2020b), (2020c), Bloomberg (2020)

To prevent the economy from falling into a liquidity trap when the policy rate reaches the ELB, some central banks have utilised unconventional monetary policy tools such as LSAP of private or public debt securities, yield curve control and forward guidance.

Part C: Factors that determine the ELB
The ELB is highly dynamic, and can change depending on the interplay between many factors. Due to its dynamic nature, attempts to estimate the ELB solely based on a narrowly-defined partial equilibrium setting may have adverse consequences to policy decisions. As a result, many central banks rely primarily on the judgment of their monetary policy decision-making body, supplemented by cost-benefit analysis and model estimates. For example, the Bank of England has revised its ELB a number of times over the last ten years, reflecting changes in the factors and the judgment of its monetary policy committee members (Carney, 2019; Vieghe, 2019; Reuters.com, 2020c). The factors affecting the ELB can be loosely categorised into domestic factors, which domestic authorities have relatively more control over, and global factors, which may not be directly under the influence of domestic authorities (Chart 4).

Sound financial institutions' balance sheets would result in a low ELB, resulting in greater policy space for central banks. Policy rate reductions could negatively affect financial institutions' net worth in the medium term, insofar as lower rates lead to losses in net interest income that outweigh capital gains. As net worth reaches near its regulatory capital constraint, financial institutions may excessively reduce risk-taking activities to protect their capital by rebalancing their credit portfolio towards safer loans or shifting focus towards non-interest income. Consequently, lending activities in the economy may contract. At some point, monetary policy is at its "reversal rate" or the ELB, whereby further reductions of the policy rate below this level would be counterproductive to lending and the economy (Brunnermeier and Koby, 2019). In this framework, financial institutions with sufficient buffers may be less likely to encounter this issue, providing greater space for policy rate reductions.

Chart 4: Key factors influencing the ELB and monetary policy space

Domestic

1 Strength of financial institutions

2 Facilities to improve the transmission of monetary policy

3 Implementation constraints of very low interest rates

4 Perceived credibility of central banks and public authorities

5 Global financial conditions

Global

Other considerations: Changing consumption-saving dynamics, and physical constraints of holding cash

Source: Central bank websites, notes and press conferences, Reuters.com (2016), (2020a), (2020b), (2020c)

The introduction of certain facilities by the central bank can lower the ELB. Facilities such as Funding for Lending programmes were introduced by some central banks[2] to support effective transmission of monetary policy at very low rates. These funding schemes provide financial institutions with funding at rates that are low and close to the policy rate, thereby allowing financial institutions to lower lending rates on loans to their customers without significant compression in net interest margins (Nardi et al, 2018). This minimises disruptions to lending activities which could arise from compressions in margins and capital buffers. Consequently, central banks are able to ease policy to very low rates, while reducing counterproductive consequences to the economy.

In some countries, operational limitations and concerns over interruptions in financial markets have resulted in the authorities setting the ELB above zero. Many operational designs of global financial markets were not intended with near-zero or negative nominal interest rates in mind. For instance, there were rules governing the auction process for new US Treasury securities which do not permit bids associated with negative nominal interest rates. In the US, there were also rules which make it difficult for money market mutual funds to pay negative nominal rates to their investors (Keister, 2011). In principle, these limitations could be amended and removed, although such changes may take significant time to implement and could transfer disruptions to other markets (Keister, 2011). Meanwhile, other countries may not have such explicit rules and limitations, but have great concerns over the uncertainty about the impact of very low rates to the functioning of financial markets and incentives of their participants. The uncertainty has led some central banks to exercise caution by prescribing an ELB that is above zero (Bank of Canada, 2015).

For many EMEs, how low interest rates can go is also affected by global factors. **These include the perceived credibility of central banks and public authorities.** Credibility plays a role in global investors' confidence when determining their investment decisions. It could be derived from a track record of institutional reforms, good economic fundamentals and stronger policy frameworks, which allow countries to be in a more robust position when a crisis strikes. In its presence, Shin (2020) argued that credibility allows EMEs to loosen monetary policy more forcefully without undermining investors'

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[2] For example, the Bank of England's Term Funding Schemes, European Central Bank's Targeted Long-Term Refinancing Operations and Reserves Bank of Australia's Term Funding Facility.

confidence. This would provide space for the authorities to lower monetary policy to a greater extent without significant concerns over destabilising capital outflows and unwelcome exchange rate depreciation. Conversely, in the absence of credibility, certain EMEs in the past were limited in their ability to manoeuvre policy rate during a crisis. In exceptional cases, some central banks were forced to raise interest rates sharply in the face of currency depreciation and capital outflows, sharply limiting their policy space (Shin, 2020).

Another important factor for EMEs is prevailing global financial conditions (Cavallino and Sandri, 2019; Rey, 2015). In the past, during periods of stress, domestic and external factors tended to interact in a perverse way, restraining policy space (BIS, 2021). For instance, amid global investors' flight to safe haven assets, some central banks in EMEs had to increase policy rates to stem capital outflows and unwelcome exchange rate depreciation, which would tighten domestic financial conditions and worsen economic outcomes. In contrast, during easy global financial conditions, such trade-offs would be less apparent. In this environment, EMEs are relatively shielded from foreign investor retrenchment, which allows for more aggressive easing in policy without disruption in external factors.

There are other considerations which may arise over a longer horizon. When interest rates are persistently low, **considerations on changing consumption and saving behaviour could come into play.** If people begin to worry that the low returns on savings will continue and expect insufficient savings to support their living after retirement, they may respond by increasing savings and reducing consumption (Borio and Hofmann, 2017; Hannoun, 2015; White, 2012). As a result, the stimulating effect of lower monetary policy on consumption diminishes and could even reverse.[3]

Another consideration, which only becomes relevant as policymakers are deciding between zero and negative nominal policy rate, is the physical constraints of holding cash. In principle, nominal interest rates cannot be below zero because investors, businesses or households would simply convert their deposits to cash. In practice, storing a large amount of cash entails significant costs such as for safe storage space. Holding cash is also inconvenient especially for large businesses to run their operations. As a result, some countries have set modestly negative policy rates without observing the flight to cash or the disruption of the intermediation process (IMF, 2017).

Part D: ELB in Malaysia
The ELB in Malaysia is currently assessed to be low and slightly above zero, providing sufficient conventional space going forward to weather further shocks. The low ELB reflects the strong fundamentals of financial institutions, which provide buffers for margin compression from policy rate reductions without substantially hampering risk-taking behaviour needed to stimulate the economy.

Externally, in the medium-term, the limited possibility of policy normalisation in AEs provides the assurance for possible further policy rate reductions in some EMEs including Malaysia without necessarily triggering destabilising outflows. In the near-term, receding global risk aversion and a benign external financial environment have also lent support to a low ELB, as risks of sudden stops in capital flows are assessed to be contained.

Nevertheless, the ELB is dynamic in nature, and future assessments of the ELB will consider the interaction between domestic and global factors. Should global factors dominate, as is likely the case for many EMEs, conventional monetary policy space may change in line with changes in external conditions or global investors' confidence.

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[3] Currently, the formalisation of the consumption-saving dynamics in the context of monetary policy space is relatively scarce in the academic literature, but it is an argument that is important and often put forth in public and policy discourse (Borio and Hoffmann, 2017).

Prolonged large scale asset purchases pose several potential adverse long-term impacts

There are long-term adverse effects which may arise from asset purchases and these must be taken into account when deciding whether to deploy these policies. Firstly, the credibility and independence of a central bank may be compromised as its policy decisions may be influenced by its debt holdings and perception could arise that it may be financing fiscal deficits. Prolonged LSAP by central banks may also hinder the effective price discovery in domestic markets by supressing risk premiums. Additionally, a small and open economy like Malaysia may encounter complications in the execution of large scale asset purchases. For instance, lower interest rate differentials relative to EME peers resulting from expanded asset purchases may lead to capital outflows and pressure on the exchange rate, resulting in the tightening of financial conditions instead. Lastly, the effectiveness of LSAP in a bank-based economy such as Malaysia may be subject to multiple transmission layers with retail lending rates not typically benchmarked directly against long term bond yields.

Policy objectives and conventional monetary policy space are key considerations in deployment of unconventional policy tools such as large scale asset purchases

Due to the different policy objectives arising under specific circumstances, central banks will have different considerations in selecting the most effective tools to achieve their mandates. As observed in EMEs during the COVID-19 pandemic, asset purchases were deployed as part of open market operations, albeit at a smaller scale and temporary in nature to provide liquidity and ensure the continued smooth functioning of the financial markets during periods of heightened stress. Unconventional monetary policies, with larger scale asset purchases as a means for further monetary accommodation, are typically deployed when conventional monetary policy is deemed insufficient. For Malaysia, at the current juncture, there remains room in conventional monetary policy space for the purpose of further monetary accommodation to support economic growth. This negates the immediate need to deploy larger scale asset purchases for the purpose of monetary accommodation.

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