

CBDCs in emerging market economies (EMEs) – Malaysia’s perspective

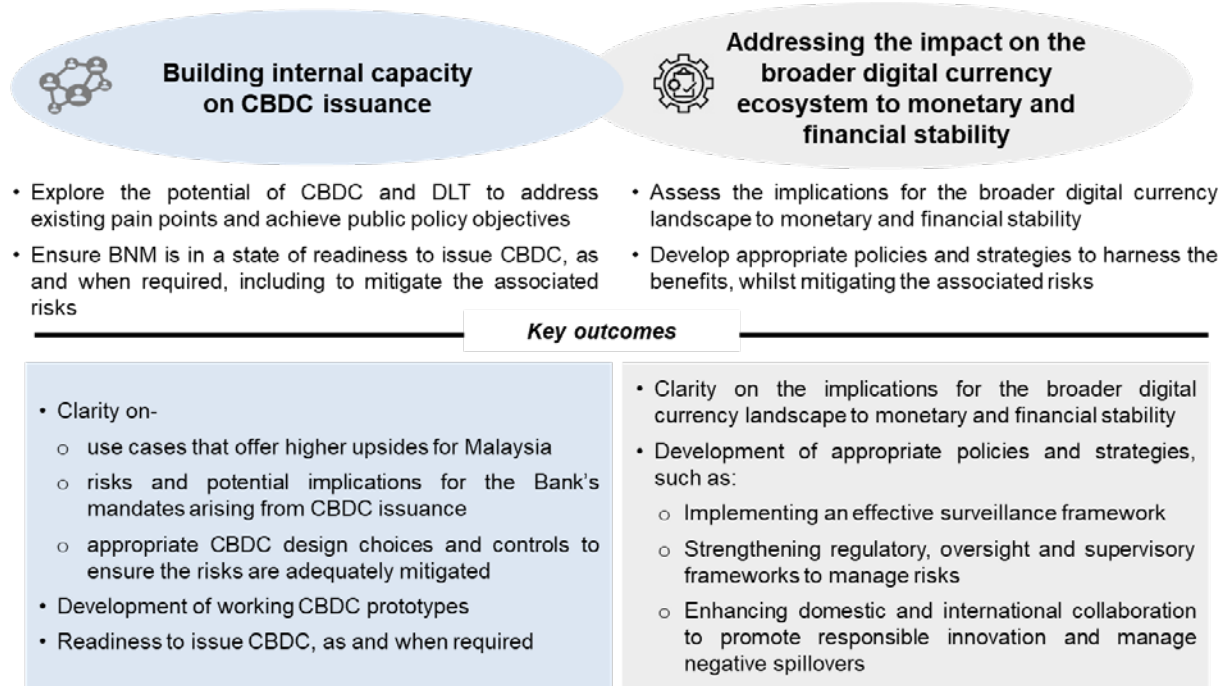
Motivation for CBDC work

With rapid technological innovation and developments in the broader payment space, central banks have intensified efforts to explore the merits and feasibility of issuing central bank digital currencies (CBDCs). The motivation for CBDC work is largely shaped by local circumstances given CBDC’s strong potential to be an effective tool to achieve public policy objectives. Such objectives may include improving domestic and cross-border payments, enhancing financial inclusion, ensuring continued access to central bank money, and strengthening monetary policy transmission. Additionally, CBDC is also seen as a potential measure to preserve monetary sovereignty against the risk of currency substitution posed by privately issued digital assets such as crypto-assets and stablecoins.

The first part of the paper will focus on Malaysia’s approach to CBDC and the broader digital currency ecosystem. The subsequent part will outline the views of the Central Bank of Malaysia (Bank Negara Malaysia, BNM) on how to harness the benefits while mitigating the risks associated with the cross-border aspects of CBDCs.

1. Malaysia’s approach to CBDC and the broader digital currency ecosystem

Developments in the digital currency space (eg CBDC and privately issued digital assets such as crypto-assets and stablecoins) may offer benefits to Malaysia. This, however, comes with some attendant risks. In the case of CBDC, for instance, the CBDC platform may provide a key foundational infrastructure upon which the private sector may innovate to promote a more efficient, inclusive and vibrant payments landscape. However, there are also consequent risks that need to be managed. Depending on how it is designed, CBDC issuance may impact monetary policy operations, amplify operational and cyber risks for BNM and disintermediate the banking system. This calls for a deeper understanding and careful evaluation of the opportunities and risks to make informed decisions. To this end, BNM is pursuing a two-pronged approach, as illustrated in Diagram 1.

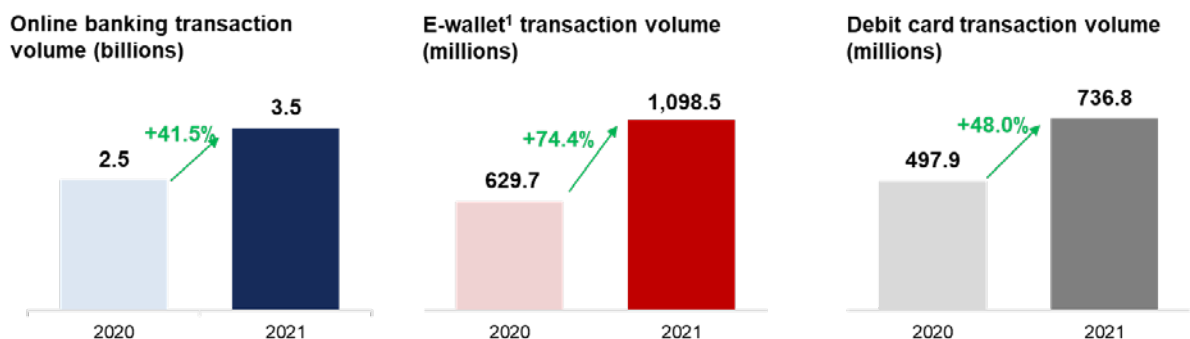


Source: BNM

Building internal capacity on CBDC issuance

At the present time, BNM does not have any immediate plans to issue CBDC. In Malaysia, domestic payment systems continue to operate safely and efficiently to support the needs of individuals and businesses and facilitate migration to digital payments (Diagram 2). Moreover, the existing monetary and financial policy tools continue to be effective in safeguarding monetary and financial stability.

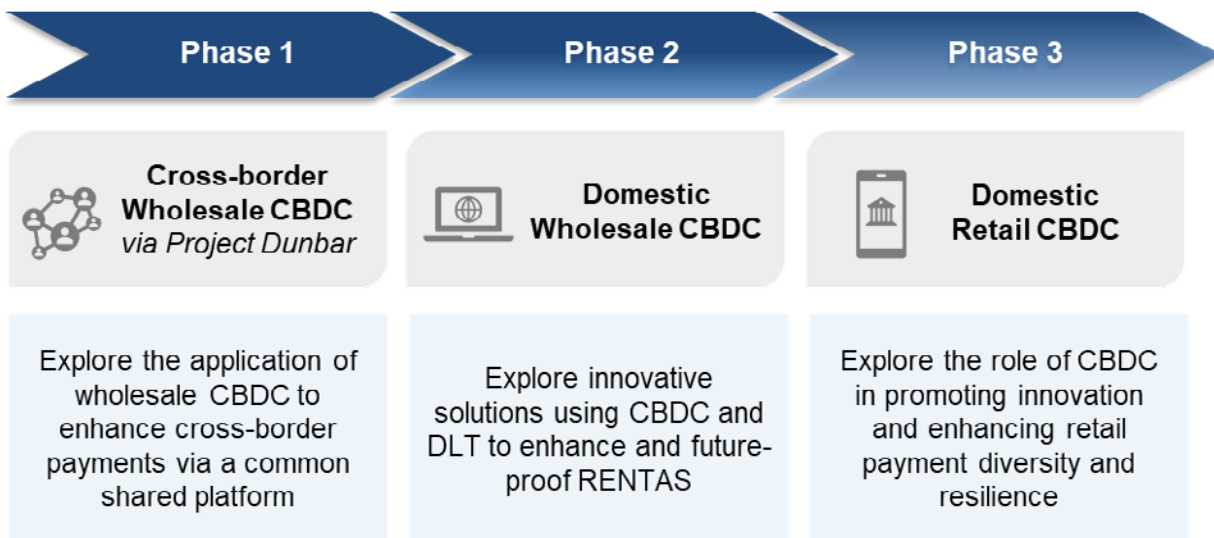
Highlights on the key trends of digital payments adoption in Malaysia



¹ Network-based e-money
Source: BNM

Nevertheless, BNM has commenced exploratory CBDC work to enhance our technical and policy capabilities, should the need to issue CBDC arise in the future. This is a multi-year exploration of CBDC via a proof of concept (PoC) in three phases (Diagram 3), with priority given to use cases with higher upsides for Malaysia. The PoC will be implemented in partnership with the industry to facilitate knowledge exchange and capacity-building.

A multi-year PoC to assess the potential of CBDC to address gaps in the financial sector and achieve public policy objectives



Source: BNM

- Commencing with Project Dunbar,¹ the first phase of the PoC aims to explore the potential of cross-border wholesale CBDCs to address pre-existing frictions in the cross-border payment space (such as low speed, high cost, insufficient transparency and limited access) via a shared platform. As an open economy with a trade-to-GDP ratio averaging over 130% since 2010, Malaysia stands to benefit from substantial cost savings and productivity gains. A detailed report on the findings of Project Dunbar is expected to be published in March 2022.
- The second phase of the CBDC exploration will focus on domestic wholesale CBDC, and its potential to future-proof our domestic wholesale payment system, ie the Real-time Electronic Transfer of Funds and Securities System (RENTAS). The application of wholesale CBDC and distributed ledger technology (DLT) has the potential to reduce the “single point of failure” risk, enhance liquidity management, simplify compliance processes, and enable new use cases such as the settlement of tokenised assets.
- In the third phase of the PoC, BNM will explore the potential of domestic retail CBDC to complement the existing retail payment systems, in particular the Real-

¹ Project Dunbar, a collaboration between the Reserve Bank of Australia, Bank Negara Malaysia, Monetary Authority of Singapore, South African Reserve Bank and BIS Innovation Hub, aims to test the use of wholesale CBDC for international settlements via a shared platform.

time Retail Payments Platform (RPP), to enhance payment diversity and resilience, besides serving as a catalyst to spur greater innovation in the financial sector. Notably, it could support new use cases through its programmable features. For instance, CBDC can be programmed to streamline compliance processes and facilitate automatic payment to beneficiaries upon meeting certain predefined conditions.²

Addressing the impact of the broader digital currency landscape on monetary and financial stability

Apart from evaluating the potential impact of any CBDC issued by BNM (domestic CBDC), BNM will also undertake a holistic assessment of the implications of CBDCs issued by other central banks (foreign CBDCs) as well as privately issued digital assets such as cryptoassets and stablecoins. For instance, widespread usage of foreign CBDCs and stablecoins for domestic payments could have implications for BNM's monetary policy, credit intermediation by banks and capital flow volatility.

Besides assessing the implications for monetary and financial stability, this workstream also aims to develop an effective surveillance framework and identify appropriate policies and strategies to harness the benefits and mitigate the risks of digital currencies. This may include measures to strengthen regulatory and supervisory frameworks, and proposals for international collaboration to promote responsible innovation, facilitate interoperability and mitigate any negative spillovers. BNM will also actively monitor the trend of key indicators with direct impact on our mandates, which may provide useful data points for us to evaluate the merits of CBDC issuance. These include, among others, the level of physical cash usage in Malaysia, the extent to which privately issued digital assets are used for payments in Malaysia,³ and the extent to which CBDC is being used to facilitate cross-border trade.

2. Harnessing the benefits while mitigating the risks associated with cross-border aspects of CBDCs

Cross-border payments are typically more costly, slower and less transparent compared to domestic payments.⁴ This is due primarily to the higher level of risks and complexity as well as regulatory and compliance requirements often associated with cross-border payments. Today, most cross-border payments are settled through

² Some examples include automated coupon payment upon bond maturity, automatic routing of tax payments to the authorities at point of sale (Group of central banks (2021); Bank of England (2020)) and automated settlement of vehicle or real estate purchases upon confirmation of the transfer of legal title.

³ In Malaysia, privately issued digital assets such as crypto-assets are not recognised as legal tender and are not a payment instrument regulated by BNM. They are generally not suitable to be used as a payment instrument due to various limitations, including price volatility, vulnerability to cyber threats and scalability issues. Accordingly, BNM has issued cautionary statements from time to time to advise the public to carefully evaluate the risks when dealing in digital assets.

⁴ FSB (2020, p1).

correspondent banking arrangements. The associated long transaction chains,⁵ multiple compliance checks and cost of trapped liquidity (due to prefunding of correspondent banking accounts across different currencies) add to the cost and time of completing a cross-border payment.

CBDCs could serve as a tool to enhance the efficiency of cross-border payments. For instance, a shared platform that facilitates international settlement using multiple CBDCs (mCBDC network) such as that envisaged under Project Dunbar could enable financial institutions to transact directly with each other. This has the potential to eliminate the need for intermediaries and enable real-time settlement. By leveraging on smart contracts and liquidity saving mechanisms, an mCBDC network could streamline compliance checks and enhance liquidity management, thus resulting in faster and cheaper cross-border payments. Based on a study by Oliver Wyman and JPMorgan, a full-scale mCBDC network which facilitates 24/7, real-time cross-border payments could reduce the cost of cross-border transactions by approximately USD 100 billion annually.⁶

Notwithstanding these efficiency gains, BNM has identified the following attendant risks as key risks that need to be managed. These risks can be analysed from two dimensions:

- **First, the risks arising from domestic CBDC being used offshore to facilitate cross-border payments.** According to a paper by the IMF,⁷ expanding access to domestic CBDC for non-resident entities, including non-resident financial institutions,⁸ may increase a country's exposure to global shocks. Swings in external demand for domestic CBDC could drive large movements in capital flows. The extent to which such swings pose challenges to an issuer country of a domestic CBDC would largely depend on the size and depth of the country's financial markets. Overall, the IMF paper finds that although CBDCs do not qualitatively change the economic forces that lead to the international use of currencies, quantitatively they could reinforce the incentives behind currency substitution and currency internationalisation. This poses a paramount concern to a highly open economy like Malaysia.
- **Second, the risks arising from foreign CBDCs being used onshore to facilitate domestic payments.** Widespread usage of foreign CBDCs for domestic transactions may heighten currency substitution (eg digital dollarisation) risk. This could undermine the effectiveness of domestic monetary policy, and if left unchecked could threaten a country's monetary sovereignty. While currency substitution risk is not new, technology can amplify the pace of such substitution by facilitating rapid and scalable adoption of foreign CBDCs. To the extent that foreign CBDCs are perceived as a safer store of value, this may exacerbate financial disintermediation risk by accelerating the flight of bank

⁵ The length of correspondent banking transaction chains can range from just over one intermediary on average for cross-border payments via SWIFT (Boucher et al (forthcoming)) to five or more intermediary banks for 20% of euro-denominated cross-border payments (ECB (2020)).

⁶ Ekberg et al (2021).

⁷ IMF (2020).

⁸ Financial institutions that are not licensed or regulated in the country in which the domestic CBDC is issued.

deposits to foreign CBDCs. Such “digital runs” on the banking sector could worsen at the times of stress with adverse impacts on financial stability.

To balance the trade-off between harnessing the efficiency gains and mitigating the risks to monetary and financial stability arising from the cross-border usage of CBDCs, BNM views the following measures to be important:

- **To ensure CBDCs are designed appropriately to mitigate risks**
 - If designed appropriately, some of the risks associated with the cross-border usage of CBDCs can be mitigated from the onset. The programmable features of CBDCs allow regulatory requirements, including foreign exchange measures⁹ to be programmed through smart contracts. For instance, by integrating digital identity information with the CBDC infrastructure, a CBDC can be programmed to restrict access and usage by non-residents. Coupled with geolocation data, a CBDC can also be programmed to restrict usage by residents across borders. If implemented by an issuer of foreign CBDC representing a major reserve currency, such controls may be useful to mitigate the risk of currency substitution in other jurisdictions.
 - Likewise, compliance parameters are built into the design of the mCBDC network explored under Project Dunbar. The payments process flow was separated into settlement and non-settlement processes. The settlement process is governed by a common set of platform-level rules. The non-settlement processes (eg know-your-customer (KYC), anti-money laundering/combating the financing of terrorism (AML/CFT), foreign exchange compliance) on the other hand are separated and allowed to be processed in-country subject to the local jurisdiction requirements. Such separation helps streamline settlement processes, whilst ensuring clear delineation of jurisdictional boundaries.¹⁰
- **To enhance the effectiveness of foreign exchange measures to cover new transmission channels for digital currencies**
 - To mitigate the risks of currency substitution and financial disintermediation, regulators could technically prohibit or restrict the use of foreign CBDCs for domestic payments. For instance, in Malaysia, payments between residents in foreign currency are subject to BNM’s prior approval except for certain permitted transactions.¹¹ However, the effectiveness of such measures would depend, among others, on whether foreign CBDCs are able to bypass

⁹ IMF (2020, p 30) – for example, the transfer of value gets rejected if the metadata for the transaction to succeed do not meet certain compliance parameters.

¹⁰ See how Project Dunbar attempts to address the challenge of regulations and jurisdictional boundaries at www.bis.org/about/bisih/topics/cbdc/dunbar.htm.

¹¹ Such permitted transactions include payments between immediate family members, payments for the purpose of education, employment or migration outside Malaysia, transactions between a resident and a licensed onshore bank in the conduct of the latter’s business involving foreign currency, and settlement of a domestic trade in goods and services between a resident exporter and resident entities involved in global supply chain operations in Malaysia, subject to specified conditions. The full list of the permitted transactions are set out in paragraph 4 of BNM’s Foreign Exchange Notice 4 (Payment and Receipt).

traditional intermediaries through which foreign exchange measures are typically enforced.

- To mitigate potential circumvention, foreign exchange measures should be extended to new channels through which digital currencies such as foreign CBDCs may be transmitted. This may include new digital intermediaries such as digital asset wallet providers and exchanges. In this regard, BNM has collaborated with the Securities Commission Malaysia which regulate digital asset activities¹² to ensure the digital asset intermediaries comply with all relevant regulatory requirements including foreign exchange measures.
 - It is recognised that the implementation of foreign exchange measures by itself is not sufficient to address the risks of currency substitution and financial disintermediation brought about by foreign CBDCs. To reduce the incentives for households and businesses to hold foreign CBDCs, strengthening monetary policy credibility, safeguarding the independence of the central bank, maintaining a sound fiscal position and fostering efficient payment systems¹³ remain key.
- **To advocate for principles of responsible innovation at the international level**
 - Efforts by a single country alone may not be sufficient to counter the risks posed by foreign CBDCs. Beyond what can be done domestically, international collaboration and coordination would be key to define a set of principles to govern the design and usage of CBDCs across borders.
 - Besides promoting responsible innovation, such principles may help mitigate potential negative spillovers to other jurisdictions. This is consistent with the core principle of “Do no harm”, whereby a CBDC issued in an individual jurisdiction should not undermine monetary and financial stability in other jurisdictions and should support international macroeconomic stability.¹⁴

Deep international collaboration is key moving forward

In view of the pace and complexity in the development of the digital currency space, BNM aims to deliver a proactive and collaborative approach to CBDCs that will ensure that the central bank and the financial sector can effectively harness the benefits and mitigate the associated risks. In view of the interlinkages and potential spillover effects, we will also continue to support public-private partnerships and the broader international collaborative efforts to advance the principles of responsible innovation in the digital currency space.

¹² These comprise trading of digital assets via digital asset exchanges (DAX), issuance of digital assets for fundraising via Initial Equity Offering (IEO), and provision of digital asset custody services (DAC).

¹³ IMF (2021, p 55).

¹⁴ Group of central banks (2020).

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