

Policy Brief

Unlocking ASEAN's Economic Potential with CBDCs: A Strategic Path Forward

Ressita Ramadhani

Key Messages:

- ASEAN countries are actively exploring central bank digital currencies (CBDCs) as a means to enhance financial inclusion, improve cross-border payments, and support regional economic integration.
- Pilot projects in Malaysia, Thailand, and Singapore provide practical models for interoperability, regulatory compliance, and efficient cross-currency settlement, offering valuable lessons for the region.
- Risks such as capital flight, monetary instability, and uneven regulatory capacity must be mitigated through robust frameworks for Know-Your-Customer (KYC), Anti-Money Laundering (AML), Combating the Financing of Terrorism (CFT), and the Common Reporting Standard (CRS).
- Standardised cross-border payment mechanisms, strong financial and regulatory safeguards, and digital literacy programs are critical to realising the transformative potential of CBDCs.
- ASEAN's strategic adoption of CBDCs can reduce transaction costs, strengthen resilience, and position the region as a leader in digital finance and sustainable economic growth, enabling seamless participation in global trade corridors.

Central bank digital currencies (CBDCs) offer ASEAN countries an opportunity to modernise payments, enhance financial inclusion, and support economic integration. Countries such as Malaysia, Thailand, and Singapore are actively piloting CBDC initiatives, exploring both wholesale and retail applications, and testing cross-border interoperability. Global pilot projects – including mBridge, Dunbar, and Cedar x Ubin+ – provide valuable insights for ASEAN, demonstrating benefits in efficiency, transparency, and risk management. At the same time, implementing CBDCs presents challenges: smaller economies face potential capital flight, regulatory gaps remain in KYC, AML, and CFT frameworks, and CRS adoption is uneven. To fully harness CBDCs' potential, ASEAN must establish standardised cross-border payment mechanisms, strengthen regulatory and financial security frameworks, and enhance digital literacy for governments, businesses, and citizens. By addressing these risks and leveraging regional collaboration, ASEAN can position itself as a competitive and resilient player in the evolving global digital economy.

In an increasingly digitally connected world, the structure and function of monetary systems are receiving growing attention. Technological innovations have paved the way for central bank digital currencies (CBDCs), an emerging concept with the potential to transform the monetary landscape. Research indicates that a significant majority of central banks globally are actively exploring CBDCs. According to the Bank for International Settlements (BIS, 2021), 60% of central banks are conducting experimental research to assess CBDC technology, while 14% have advanced to pilot or trial implementations. These figures demonstrate the strong interest and commitment among central banks to explore the transformative potential of CBDCs.

Within this global context, ASEAN occupies a distinctive position. Countries such as Malaysia, Thailand, and Singapore have already launched pilot projects. However, despite these initiatives, the region still faces challenges in achieving fully integrated technological adoption. This gap presents both a challenge and a significant opportunity for ASEAN to harness CBDCs as a tool for enhancing regional financial integration and advancing economic resilience.

Global and Regional Landscape of CBDCs

In Europe, models assessing the social welfare impact of CBDCs suggest that an optimal volume of CBDC in circulation for the euro area would range from 15% to 45% of quarterly GDP (Burlon et al., 2022). For effective policy implementation, maintaining a consistent CBDC quantity equivalent to roughly 40% of annual GDP is recommended (Kumhof et al., 2023).

CBDC adoption differs between developed and developing nations due to variations in economic structures and financial systems. While digital currencies offer advanced technological capabilities and privacy benefits, they have also faced skepticism, particularly in emerging economies where offline functionality is essential. Successful adoption depends on factors such as technological readiness, financial inclusion, economic conditions, human resources, and country-specific characteristics.

Ressita Ramadhani

Research Associate, Project Officer,
ERIA

ASEAN Readiness and National Projects

Under Malaysia's ASEAN Chairmanship, efforts have focused on enhancing intra-ASEAN trade and investment while exploring partnerships beyond the region. The ASEAN Economic Community pillar supports technological investment and lays the groundwork for CBDC adoption. ASEAN provides a unique platform for study enabling and hindering factors for blockchain-based currencies, with regulatory policies – especially central bank rules on cryptocurrencies and blockchain – serving as critical enablers.

Several ASEAN countries have launched CBDC pilot projects (AMRO, 2022). Bank Negara Malaysia participates in the Dunbar Project, focusing exclusively on wholesale CBDC (wCBDC), positioning its development ahead of Indonesia. Singapore, through projects such as Cedar x/ Ubin+, Dunbar, Jasper, Onyx, and Mariana, is developing both wholesale and retail CBDCs (wCBDC and rCBDC) (MAS, 2021). Thailand is advancing wCBDC development under the mBridge project, while Laos is piloting both wCBDC and rCBDC (Atlantic Council, 2024). Cambodia is advancing rCBDC through its national Bakong Project.

Economic Opportunities

CBDCs offer significant potential to streamline cross-border payments and reduce transaction costs by leveraging blockchain technology. This facilitates international trade and supports businesses navigating economic transitions. ASEAN can use CBDCs to address cross-border frictions, which can consume up to 70% of transaction value – particularly affecting SMEs dealing with foreign exchange inefficiencies.

Moreover, CBDCs enable financial institutions to integrate operations across borders. When paired with tools like the Automatic Exchange of Information (AEOI), CBDCs enhance transaction transparency, combat tax evasion, and strengthen trust in financial systems (Ramadhani et al., 2025). The Digital Economy Framework Agreement (DEFA), launched under the 2023 ASEAN Chairmanship Leaders' Statement, provides a platform for regional digital cooperation. CBDCs complement this framework by improving financial access, enabling faster electronic payments, and harmonising regional payment systems.

CBDC International Pilot Projects

The Bank for International Settlements (BIS) has spearheaded several CBDC pilot initiatives, generating valuable insights for cross-border payment systems. The mBridge project, involving Thailand, China, Hong Kong, the UAE, and others, reached its minimum viable product stage by June 2024, facilitating real-value transactions and testing innovative technologies. The Dunbar project, with Australia, Singapore, Malaysia, and South Africa, showcased flexible CBDC access models and highlighted the advantages of separating settlement from non-settlement processes for localised compliance and global interoperability.

Other initiatives include the Mariana Project (France, Switzerland, Singapore), advancing wholesale CBDC design to support G20 cross-border payment objectives; the Cedar x Ubin+ Project (US–Singapore), enabling faster and interoperable multi-currency settlements via smart contracts; and the Mandala Project (Australia, Republic of Korea, Malaysia, Singapore), enhancing transaction efficiency, compliance automation, jurisdictional clarity, and user privacy while maintaining financial integrity.

A notable feature across these projects is their support for flexible CBDC access models and the use of hashed time-lock contracts (HTLC) or smart contracts to simulate cross-currency transactions across blockchain platforms. Smart contracts can govern money supply processes, enforce system policies, and monitor CBDC issuance through programming languages compatible with the Java Virtual Machine or Ethereum Virtual Machine (Bank Indonesia, 2024).

As illustrated in Figure 1, the CBDC system has the potential to streamline e-payment transactions across the domestic CBDC network. To further enhance cross-border CBDC transactions, e-wallet providers could facilitate the settlement of foreign exchange (FX) transactions. In this setup, FX providers generate bid and ask quotes, ensuring competitive exchange rates for all parties involved.

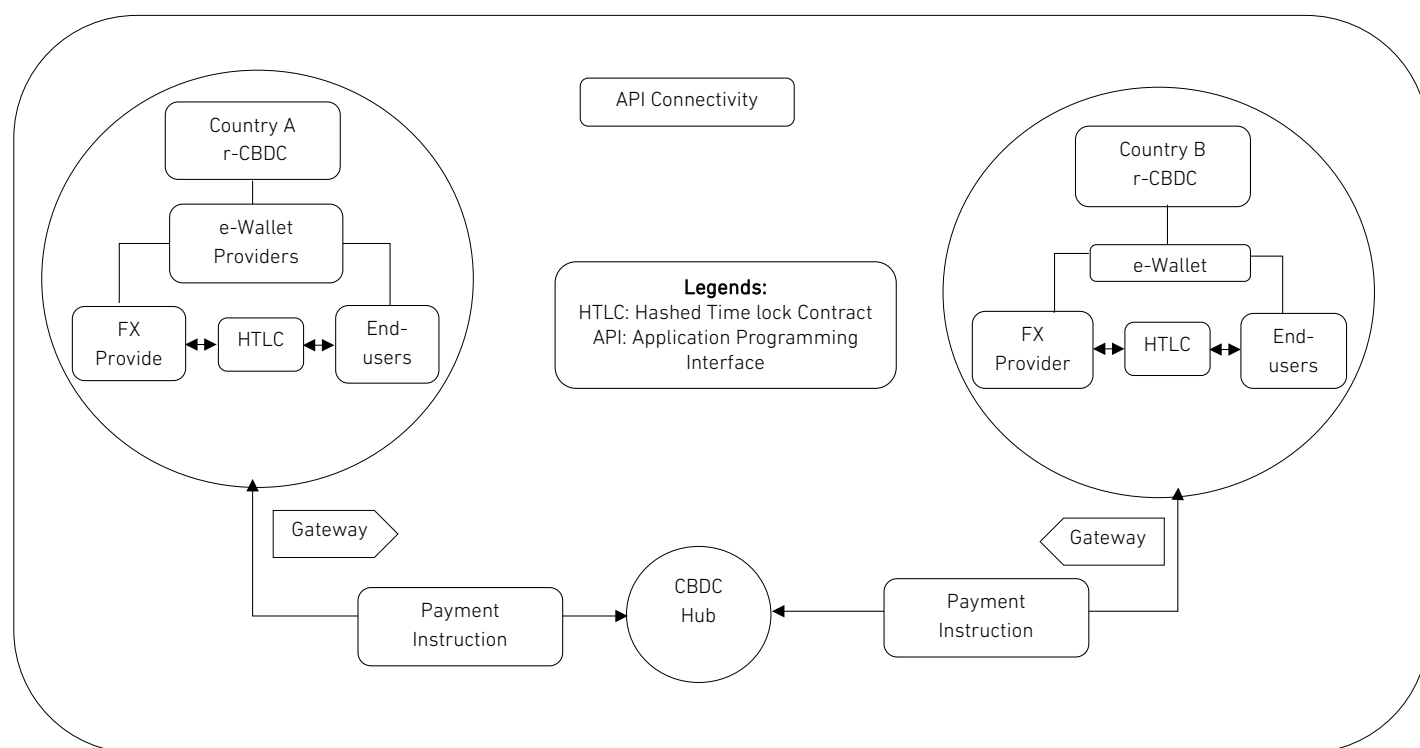
Risks and Structural Barriers

While CBDCs offer substantial benefits, ASEAN faces several challenges in implementation. First, cross-border CBDCs could heighten capital flight risks in smaller AMS, as residents may prefer holding a foreign CBDC perceived as more stable or valuable, particularly during economic uncertainty. This could weaken domestic currency demand, undermining monetary sovereignty and exchange rate stability.

Moreover, not all ASEAN nations have comprehensive frameworks for Know-Your-Customer (KYC), Anti-Money Laundering (AML), and Combating the Financing of Terrorism (CFT). Currently, only Indonesia, Malaysia, and Singapore are members of the Financial Action Task Force (FATF), leaving gaps in regulatory alignment across the region.

The Common Reporting Standard (CRS) for financial data sharing is also unevenly adopted. While Singapore maintains an extensive network of exchange partners, other member states show lower levels of engagement, complicating regional coordination efforts.

Figure 1: Pilot Project CBDC Framework



Source: Compiled and adapted by the author from multiple sources.

Policy Options for ASEAN

To maximise the potential of CBDCs while addressing structural challenges, ASEAN should consider the following:

- 1. Standardise Cross-Border Payments:** Develop accessible and unified mechanisms to enable seamless transactions across ASEAN CBDC networks, such as a shared QR code framework or centralised alias database.
- 2. Enhance Regional Expertise:** Utilise the DEFA under the ASEAN Payments Policy Framework for Cross-Border Real-Time Retail Payments to establish a harmonised CBDC infrastructure, engaging all ASEAN central banks.
- 3. Strengthen Financial Security:** Implement robust KYC, AML, and CFT protocols, and encourage broader FATF participation to mitigate risks of money laundering and terrorism financing.
- 4. Improve CRS Adoption:** Expand due diligence and reporting processes to enhance the Automatic Exchange of Information (AEIOI) framework and promote consistent financial data sharing across the region.
- 5. Promote Digital Literacy:** Invest in AI and digital literacy programs for the public, policymakers, and multinational corporations to leverage CBDCs for participation in global value chains.

Conclusion

Strategic CBDC adoption can transform ASEAN's economic landscape by improving cross-border payment efficiency, lowering transaction costs, and fostering financial inclusion, as demonstrated by global pilot projects. While capital flight, regulatory disparities, and uneven CRS adoption remain challenges, ASEAN's ongoing initiatives in Malaysia, Thailand, and Singapore provide a strong foundation. By prioritising standardised payment systems, robust KYC, AML, and CFT frameworks, and digital literacy within the DEFA, ASEAN can strengthen regional financial integration and position itself as a competitive player in global trade corridors, engaging partners such as China and the EU.

References

- Adam-Kalfon, P., H. Arslanian, K. Sok, S. Benoit, H. Jones, and Y. Dou (2021), *Central Bank Digital Currencies Extract from PwC Global CBDC Index September 2021 Focus: Asia region (CBDC) index report*.
- AMRO (2022), *Analytical Note The ABCs of CBDCs and ASEAN+3 Developments 1*. https://www.amro-asia.org/wp-content/uploads/2022/01/AMRO-Analytical-Note_The-ABCs-of-CBDCs-and-ASEAN3-Developments_Jan-19-2022.pdf
- Atlantic Council (2025), *Central Bank Digital Currency (CBDC) Tracker*. <https://www.atlanticcouncil.org/cbdctracker/>.

- Bank Indonesia (2024), *Wholesale Rupiah Digital Laporan Proof of Concept (PoC) Cash Ledger*. www.bi.go.id
- Bennet, C., R. Chan, M. Shah, and S. Shetty (2022), *Central Bank Digital Currencies: Building Block of the Future of Value Transfer*. <https://www2.deloitte.com/content/dam/Deloitte/in/Documents/financial-services/in-fs-cbdc-noexp.pdf>
- BIS (2021), *BIS Innovation Hub work on central bank digital currency*. <https://www.bis.org/about/bisih/topics/cbdc.htm>
- Burlon, L., C. Montes-Galdón, A. Muñoz, and F. Smets (2022), *The Optimal Quantity of CBDC in a bank-based economy* (2689). <https://www.ecb.europa.eu/pub/pdf/scpwps/ecb.wp2689~846e464fd8.en.pdf>
- Kumhof, M., Pinchetti, M., Rungcharoenkitkul, P., & Sokol, A. (2023). *CBDC policies in open economies*. <https://www.bis.org/publ/work1086.pdf>
- MAS. (2021). *A Retail Central Bank Digital Currency: Economic Considerations in the Singapore Context*. <https://www.mas.gov.sg/-/media/MAS/EPG/Monographs-or-Information-Paper/A-retail-CBDC--Economic-Considerations-in-the-Singapore-Context.pdf>
- Ramadhani, R., Z. Farisy, and D.S. Puteri (2025), 'Comparative Analysis of CBDC and Tax Law Enforcement in Selected Countries', *Journal of Central Banking Law and Institutions*, 4(1), pp.141–80. <https://doi.org/10.21098/jcli.v4i1.275>

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Sentral Senayan II, 5th, 6th, 15th floors
Jalan Asia Afrika No. 8
Senayan, Central Jakarta 10270, Indonesia
Tel: (62-21) 57974460
E-mail: contactus@eria.org

