



Policy Perspectives

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ASEAN+3 cross-border payments, regional connectivity, and way forward

May 2026

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Abstract

This paper examines the evolving landscape of cross-border payment connectivity in the ASEAN+3 region. It highlights the need for stronger intra- and inter-regional payment connectivity to address inefficiencies in traditional cross-border payment systems and enhance regional integration. It reviews the current architecture of cross-border payments and the progress of bilateral and multilateral initiatives covering fast payment system connectivity, and it explores the emergence of tokenized money, including central bank digital currencies (CBDCs), and stablecoins, as new instruments for cross-border transactions. Persistent challenges, such as regulatory heterogeneity, technical disparities, and scalability constraints, as well as emerging risks, such as those posed by foreign currency-denominated stablecoins, are identified. The paper concludes with policy implications emphasizing the need to advance wholesale connectivity, interoperability, the appropriate use of local currency, as well as close regional coordination to ensure resilient, inclusive, and efficient cross-border payment systems in the ASEAN+3 region.

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Abbreviations

ABMF	ASEAN+3 Bond Market Forum
ACCD	Appointed Cross-Currency Dealer
ADB	Asian Development Bank
AML	Anti-Money Laundering
AMRO	ASEAN+3 Macroeconomic Research Office
AREO	ASEAN+3 Regional Economic Outlook
API	Application Programming Interface
APN	Asian Payment Network
ASEAN	Association of Southeast Asian Nations
ASEAN+3	ASEAN plus China (including Hong Kong), Japan and Korea
BCBS	Basel Committee on Banking Supervision
BI	Bank Indonesia
BIS	Bank for International Settlements
BIS IH	BIS Innovation Hub
BOJ	Bank of Japan
BOK	Bank of Korea
BOT	Bank of Thailand
BNM	Bank Negara Malaysia
BSP	Bangko Sentral ng Pilipinas
BUNA	Arab Regional Payment System
CASP	Crypto-Asset Service Provider
CBDC	Central Bank Digital Currency
CFT	Countering the Financing of Terrorism
CHF	Swiss franc
CMIM	Chiang Mai Initiative Multilateralization
CNY/RMB	Chinese yuan/ Renminbi
CPMI	Committee on Payments and Market Infrastructures
CSIF	Cross-Border Settlement Infrastructure Forum
DEFA	Digital Economy Framework Agreement
DLT	Distributed Ledger Technology
ECB	European Central Bank
EU	European Union
EUR	Euro
FATF	Financial Action Task Force
FPS	Fast Payment System
FSB	Financial Stability Board
FX	Foreign Exchange
G10	Group of Ten
G20	Group of Twenty
GBP	Great British pound sterling
GENIUS Act	Guiding and Establishing National Innovation for US Stablecoins Act
GPI	Global Payment Innovation

HKMA	Hong Kong Monetary Authority
IDR	Indonesian rupiah
IMF	International Monetary Fund
IOSCO	International Organization of Securities Commissions
ISO	International Organization for Standardization
JPY	Japanese yen
KRW	Korean won
KYC	Know Your Customer
LCSF	Local Currency Settlement Framework
LCTF	Local Currency Transaction Framework
LCY	Local Currency
MAS	Monetary Authority of Singapore
MiCA	Markets in Crypto-Assets Regulation
MOU	Memorandum of Understanding
MSME	Micro, Small, and Medium Enterprise
MVP	Minimum Viable Product
MYR	Malaysian ringgit
PAPSS	Pan-African Payment and Settlement System
PBOC	People's Bank of China
PFMI	Principles for Financial Market Infrastructures
Plus-3	China (including Hong Kong), Japan and Korea
PSP	Payment Service Provider
QR	Quick Response (code)
RBA	Reserve Bank of Australia
RBI	Reserve Bank of India
rCBDC	Retail CBDC
RPC	Regional Payment Connectivity
RTGS	Real-Time Gross Settlement
SARB	South African Reserve Bank
SGD	Singapore dollar
SME	Small and Medium Enterprise
SNA	Special Purpose Non-Resident Account
SWIFT	Society for Worldwide Interbank Financial Telecommunication
TARGET	Trans-European Automated Real-time Gross Settlement Express Transfer
THB	Thai baht
TIPS	TARGET Instant Payment Settlement
UAE	United Arab Emirates
US	United States
USD	US dollar
VASP	Virtual-Asset Service Provider
wCBDC	Wholesale CBDC
WC-PSS	Working Committee on Payment and Settlement Systems

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I. Introduction

1. The paper highlights the need to strengthen intra- and inter-regional payment connectivity while addressing the risks posed by emerging technologies in a coordinated manner. It provides an overview of the current cross-border payment architecture and regional connectivity, and assesses the benefits and risks associated with existing and new payment systems. The paper also examines cross-border payment connectivity initiatives, central bank digital currencies (CBDCs), and stablecoins, which are emerging as private-sector alternatives for cross-border transactions. Based on this assessment, the paper identifies key areas that need to be strengthened and broad policy actions needed to support the effective operationalization of each system.

2. The inefficiencies of traditional cross-border payments due to reliance on multiple intermediaries and legacy infrastructure underscore the value of stronger intra- and inter-regional connectivity. The linkages between domestic payment systems can reduce costs, shorten processing time, and expand access for individuals and small and medium enterprises (SMEs). Over time, deeper connectivity can facilitate trade and investment, support financial integration, and strengthen the region's resilience to global shocks. Emerging technologies such as distributed ledger technology (DLT) and tokenization—particularly through their application to CBDCs and stablecoins—could further enhance the efficiency of direct cross-border payment linkages.

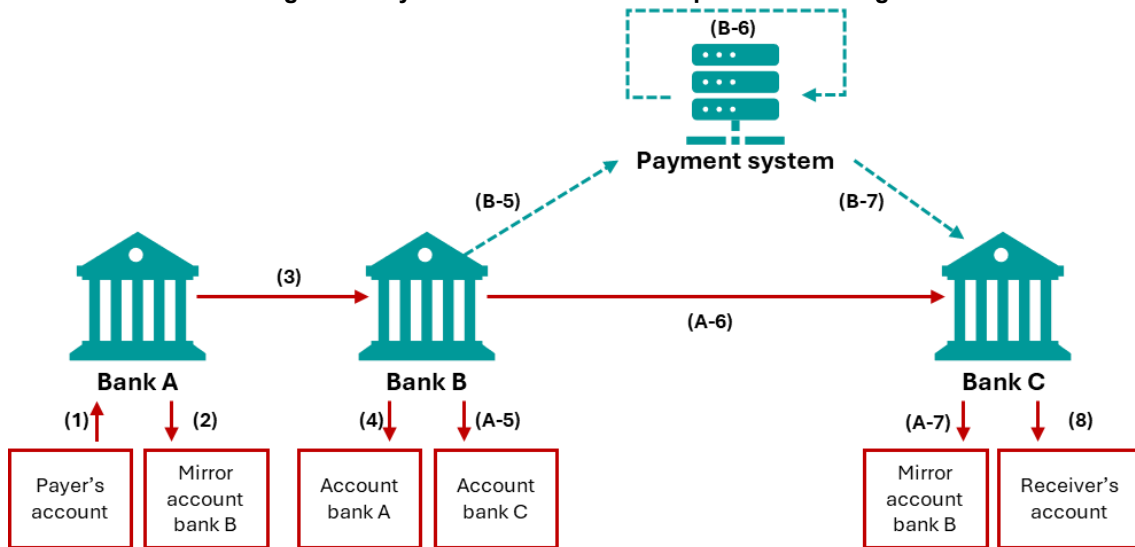
3. Fast and efficient payment linkages, at both the retail and wholesale levels, are an important foundation for ASEAN+3's economic and financial integration. The trade linkages in ASEAN+3 have strengthened over the past two decades, and this has also led to changes in foreign direct investment patterns, thus shifting the region's economic center of gravity inward ([AMRO 2026](#)). However, while intra-regional economic connections are strengthening, the need to deepen financial linkages has emerged. Fast and efficient payment systems are the basic building blocks for strong financial links. Advancements in retail payments help tourists, migrant workers, and e-commerce/small businesses by making cross-border payments cheaper and more accessible across different sections of society. On the other hand, as the region grows and corporations increasingly internationalize, the need for advancements in wholesale payments will be critical in enabling cross-border bank payments and managing multi-currency liquidity efficiently, which could pave the way for broader capital market integration.

4. Rising global fragmentation is reshaping cross-border payment systems, making it increasingly important for ASEAN+3 to strengthen regional connectivity to enhance resilience while remaining fully integrated with the global financial architecture. As geopolitical fragmentation increases, payment systems risk becoming more segmented across jurisdictions and technologies. For ASEAN+3, which is deeply dependent on trade and cross-border capital flows, this raises the importance of strengthening cross-border payment connectivity to be more resilient to geopolitical spillovers. At the same time, regional initiatives should complement—not replace—global integration. The region's long-standing commitment to openness and multilateral cooperation suggests that ASEAN+3 should aim to build a resilient regional payment ecosystem while remaining connected to the global financial system.

II. Global and ASEAN+3 Cross-border Payment Architecture: Current State and Initiatives

5. The global cross-border payments infrastructure has served the financial system well but has room to be more efficient. The global cross-border payment infrastructure largely consists of correspondent banking chains and international card networks (Figure 1). While robust, it has inefficiencies such as longer processing times, higher costs, limited access, and lack of transparency. These issues can be attributed to the presence of multiple intermediaries (routing complexity), non-aligned data formats (at times needing manual repairs, a key hindrance to straight-through processing), different working hours (due to different time zones and banking hours), and multiple compliance checks.

Figure 1. Payments Settled via Correspondent Banking



1. Debiting of payer's account with bank A
2. Crediting of bank B's mirror account with bank A, which is kept for accounting purposes
3. Payment message from bank A to bank B via telecommunication network
4. Debiting of bank A's account with bank B (loro account)

A. Use correspondent bank only

5. Crediting of bank C's account with bank B
6. Payment message from bank B to bank C via telecommunication network
7. Debiting of bank B mirror account with bank C, which is kept for accounting purposes
8. Crediting of receiver's account with bank C

B. Involvement of payment system

5. Payment message from bank B to payment system
6. Settlement via payment system
7. Payment message from payment system to bank C
8. Crediting of receiver's account with bank C

Source: AMRO staff adapted from [Danmarks Nationalbank \(2005\)](#) and [ECB \(2015\)](#)

6. The Group of Twenty and the Financial Stability Board's (G20–FSB) roadmap to enhance cross-border payments, launched in 2020, explicitly identifies these frictions and has set targets to be achieved by the end of 2027 (CPMI 2018a, FSB 2021). The G20 targets define key performance indicators (KPIs) for speed, cost, transparency, and

access across three types of payments—wholesale, retail (excluding remittances), and remittances.³ Below is a quick summary of the issues and the corresponding G20 targets.

- **Shorter processing times:** The traditional correspondent banking chains rely on sequential processing across institutions and time zones, and payments could take one to three working days. The G20 roadmap states that 75 percent of cross-border payments should be credited within one hour of the payment and the remainder within one business day.
- **Lower costs:** Multiple service layers such as originating/correspondent/receiving banks and FX providers add to the costs of transfers. The G20 has set a target of global average costs of retail payments (excluding remittances) at 1 percent (remittances: 3 percent), with no corridors having costs higher than 3 percent (5 percent).⁴
- **Increased transparency:** The route, fees, and delays (if any) of payments are typically opaque and this is an important consideration under the “travel rule” of the Financial Action Task Force (FATF) to combat money laundering and terrorist financing (FATF 2025). The targets require all payment service providers to provide a list of information concerning cross-border payments, including the total transaction cost and the expected time to deliver funds.
- **Increased access:** The access to cross-border payments is also uneven across financial institutions, businesses, and individuals, with many having no direct access to cross-border corridors. The targets require all financial institutions (end-users) to have access to at least one payment corridor (electronic payment infrastructure) while more than 90 percent of users of remittance services have access to electronic remittance services.

7. Although there have been improvements in the traditional systems in the past few years, data suggest that the G20 targets have not been met by global payment systems.⁵ The development in cross-border payments has been uneven, both in the context of the targets and types of payments. But broadly, all the statistics indicate that the KPIs fall short of the G20 targets.

- **Wholesale payments:** 54.6 percent of cross-border payments were credited within one hour while 93.2 percent were credited within a business day. The processing times have improved slightly compared to 2023 after deteriorating in 2024 (Figure 2). The access has remained unchanged as 7.6 percent of jurisdictions have no option for financial institutions to send or receive wholesale cross-border payments.

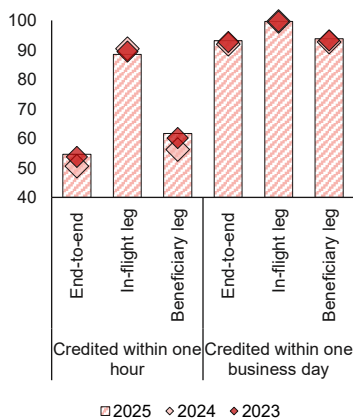
³ Wholesale payments are defined as transactions with a value of USD 100,000 or more and are dominated by payments between financial institutions. Retail payments have a value of less than USD 100,000 and primarily fall into four categories, i.e., Business-to-Business (B2B), Business-to-Person (B2P), Person-to-Business (P2B) and non-remittance Person-to-Person (P2P). Remittance payments are low-value, high-volume, non-commercial, P2P transfers typically sent to family or friends from abroad with receivers primarily located in emerging market and developing economies (FSB 2025a).

⁴ There are no cost targets for wholesale payments.

⁵ The Global Payment Innovation (GPI) initiative by Society for Worldwide Interbank Financial Telecommunication (SWIFT) has improved the processing such that 60 percent of the GPI payments are credited within 30 minutes and almost 100 percent within 24 hours. SWIFT GPI has been adopted by about 4500 financial institutions and represents about 82 percent of all SWIFT traffic, according to the SWIFT website, accessed on February 11, 2026.

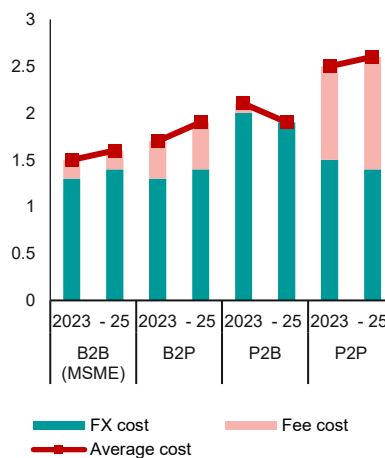
- Retail payments (excluding remittances):** The cost of retail payments (excluding remittances) remains higher than the target, and most of them have seen a slight increase in the costs as compared to 2023 (Figure 3). Among the different payment segments, P2P payments are the most expensive, driven by higher fees while P2B payments have the highest FX costs. P2B payments also lead the way in cost improvements and have seen the largest reduction in the percentage of corridors with costs higher than 3 percent (Figure 4). The share of retail payments services that credit recipients within one hour of initiation has increased slightly to 35.4 percent (2023: 34.2 percent) while those within one day have decreased to 67.3 percent (2023: 74 percent). The access to cross-border payment services has remained stable for MSMEs at 90.4 percent (2023: 90 percent) but improved for individuals to 78.7 percent (2023: 73.8 percent). Transparency of retail cross-border payments has improved significantly as 62.9 percent (2023: 54.5 percent) of payment services provide cost and speed information.
- Remittances:** The average costs of sending remittances have reduced in the past decade (Figure 5) but have increased slightly over the past couple of years. That said, average costs of the cheapest remittance services have reduced (Figure 6). The costs remain highest for remittances sent through banks while those by mobile operators are the lowest (Figure 7). The remittance speed and access have seen marginal improvement globally, with 54.4 percent of remittances available to the recipient within one hour (2023: 52.6 percent) and 78.7 percent individuals having transacted through a regulated financial institution (2023: 73.8 percent).

Figure 2. Global: Speed of Wholesale Cross-border Payments (Percent)



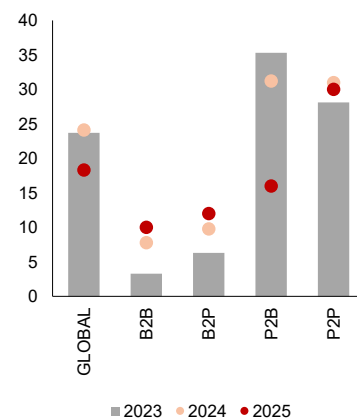
Source: FSB (2025b); AMRO staff adaptation
 Note: Wholesale cross-border payments refer to those with a value greater than or equal to USD 100,000. Chart shows the percentage of cross-border wholesale payments credited within said duration since payment initiation.

Figure 3. Global: Costs of Retail Cross-border Payments (Percent)



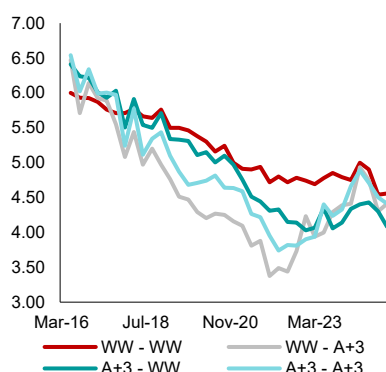
Source: FSB (2025b); AMRO staff adaptation.
 Note: Retail cross-border payments refer to those with a value less than USD 100,000, not including remittances. The use-case definitions are: USD 20,000 for B2B, USD 5,000 for B2P, USD 1,000 for P2P and USD 100 for P2B.

Figure 4. Percentage of Corridors with Costs Higher Than 3%, by Use Case (Percent)



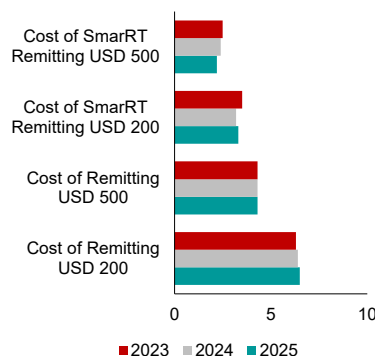
Source: FSB (2025b); AMRO staff adaptation.

Figure 5. Selected Corridors: Cost of Remitting USD 200 (Percent)



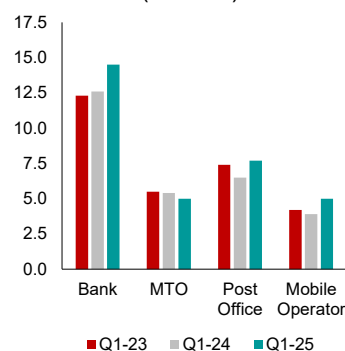
Sources: Remittance Prices Worldwide database, World Bank; and AMRO staff visualization and calculations. Note: A+3 = ASEAN+3, WW = Global. The labels are of the format “source-destination”. The figure shows the median cost of sending USD 200 across corridors, based on data from different service providers.

Figure 6. Global: Remittances Cost by Value (Percent)



Source: Remittance Prices Worldwide and FSB (2025b); Q1 2023, Q1 2024 and Q1 2025. AMRO staff adaptation. Note: SmarRT (“Smart Remitter Target”) is a World Bank RPW-based metric that, for each remittance corridor, averages the total cost of the three cheapest widely available services, serving as a benchmark for what an informed consumer could typically achieve.

Figure 7. Global: Average Cost of Remitting USD 200, by Operator Type (Percent)



Source: Remittance Prices Worldwide database, World Bank. Note: MTO = Mobile Transfer Operator.

8. The region has also followed global trends but lags the global averages in KPIs, particularly in wholesale payments.

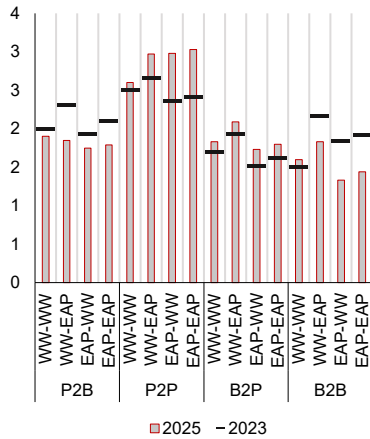
- Wholesale payments:** The Asia-Pacific region⁶ remains one of the slowest in the world for receiving wholesale payments, with only 25.6 percent of payments credited within one hour of initiation and 84.6 percent credited within one business day. Progress in the region is stagnant largely due to friction in the beneficiary leg, i.e. the final stage of the payment process where the receiving bank credits the recipient’s account.
- Retail payments (excluding remittances):** In line with the global averages, P2P costs remain high compared to the other categories—for all payments to, from, and within the East Asia and Pacific region (Figure 8). There has been a notable reduction in the estimated B2B costs in the region with reductions attributable to lower FX costs (Figure 9). Over the past couple of years, the speed of transfer has improved notably for banks and mobile wallets, as a larger share of payments are transferred within an hour (Figure 10), but banks still lag behind in transparency as compared to card and mobile wallet payments (Figure 11).
- Remittances:** The ASEAN+3 region has progressed more than the rest of the world in reducing remittance costs and the median costs of sending USD 200 from ASEAN+3 across channels are almost 50 basis points lower than those in the rest of the world. The costs are highest for remittances through banks while mobile operators provide the cheapest services (Figure 12) but the share of remittance

⁶ A breakdown of wholesale payment statistics by country are not available, hence we use Asia-Pacific and East Asia and Pacific regions as proxies. These include ASEAN+3 and other economies such as Australia and New Zealand.

services in the region that can transfer funds within one business day has been consistently lower than the rest of the world (Figure 13).

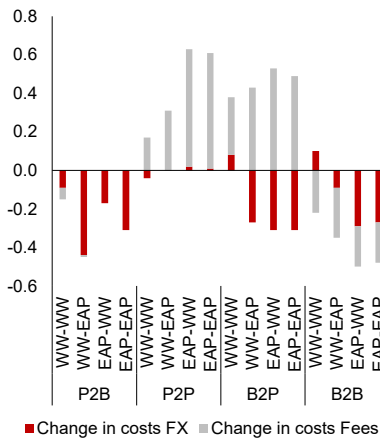
The ASEAN+3 region has been leading efforts in creating more advanced FPS linkages across the region, standardizing messaging and using APIs. This could lead to improved costs, speed, transparency, and access in the region. However, there are few reported plans to extend wholesale payment links across the region.

Figure 8. Selected Corridors: Cost of Retail Cross-border Payment (Percent)



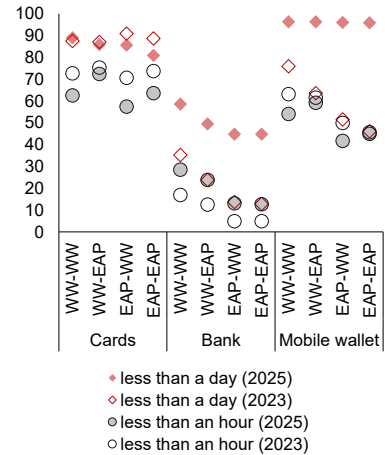
Source: FSB (2025b); AMRO staff adaptation.
Note: WW = Global, EAP = East Asia and Pacific. The labels are of the format "source-destination".

Figure 9. Changes in Cost of Retail Cross-border Payment from 2023 to 2025 (Percentage Point)



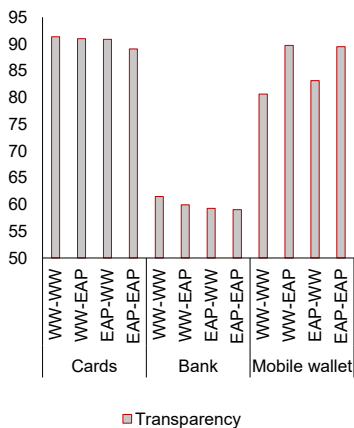
Source: FSB (2025b); AMRO staff adaptation.
Note: WW = Global, EAP = East Asia and Pacific. The labels are of the format "source-destination".

Figure 10. Share of USD 1000 Transfers Completed in under One Hour/Day (Percent)



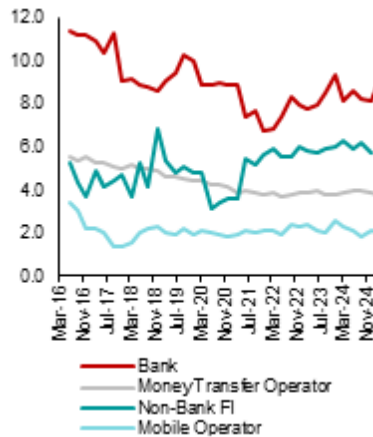
Source: FSB (2025b); AMRO staff adaptation.
Note: WW = Global, EAP = East Asia and Pacific. The labels are of the format "source-destination".

Figure 11. Percentage of Payment Services Providing Cost and Speed Information (Percent)



Source: FSB (2025b); AMRO staff adaptation.
Note: WW = Global, EAP = East Asia and Pacific. The labels are of the format "source-destination".

Figure 12. ASEAN+3: Cost of Remitting USD 200 by Operator Type (Percent)



Sources: Remittance Prices Worldwide database, World Bank; and AMRO staff visualization and calculations.

Figure 13. Share of Remittances Completed within One Day (Percent)



Sources: Remittance Prices Worldwide database, World Bank; and AMRO staff visualization and calculations.
Note: A+3 = ASEAN+3, WW = Global. The labels are of the format "source-destination". The figure shows the percentage of USD 200 transfers completed within one day across corridors, based on data from different service providers.

Global and ASEAN+3 initiatives.

9. There have been various global initiatives to overcome challenges faced by the global payment infrastructure. Global initiatives, including the G20's roadmap for enhancing cross-border payments and standards like ISO 20022, have sought to address these frictions by promoting harmonized messaging, richer data fields, and improved compliance capabilities across national payment systems. Entities such as the Bank for International Settlements Innovation Hub (BIS IH) and FSB have highlighted the need for interoperable rails and enhanced governance frameworks that span multiple jurisdictions. Many regions in the world have developed their cross-border payment infrastructure, such as the TARGET Instant Payment Settlement (TIPS) in the Eurosystem (launched in 2018) to enable 24/7 real-time settlements in central bank money, Pan-African Payment and Settlement System (PAPSS) in Africa to support local-currency settlement and reduce reliance on correspondent banking, and Arab Regional Payment System (BUNA) in the Middle East (fully operational in 2020) targeting regional efficiency and resilience. These global efforts provide a relevant backdrop for ASEAN+3's regional work, aligning with broader objectives of efficiency, security, and financial inclusion.

10. Broadly aligned with these global objectives, the ASEAN+3 authorities have pursued similar overarching objectives and have developed additional region-specific targets. Both the G20's objectives and ASEAN+3 initiatives have identified reducing cost and increasing speed, transparency and access as important considerations. Beyond that, regional bilateral payment links also target seamless payments and high end-user convenience. The cross-border payment initiatives, especially in ASEAN, focus on increasing inclusion—both for individuals and SMEs, with use cases in tourism, remittances, and SME trade (both goods and services). The payment connectivity also aims to reduce reliance on foreign currencies and encourages the use of domestic currency (of either of payment counterparts) instead. Payment connectivity is considered to be an important factor in strengthening financial resilience and promoting trade and investments.

11. In this context, ASEAN+3 authorities have been proactive in addressing the cross-border payment system inefficiencies. Notably, some of the efforts in the region started well before the G20 roadmap was formalized. Some of the earliest efforts in the region include:

- **Asian Payment Network (APN, 2006):** The APN was established by ASEAN domestic payment switches to increase the efficiency and security of cross-border retail payment infrastructure while reducing the costs involved. The APN resulted in the creation of APN Hub, to support Cross-border ATM Services (CBAS) and Cross-border Fund Transfer (CBFT).
- **ASEAN Working Committee on Payment and Settlement Systems (WC-PSS, 2010):** The WC-PSS was established to enhance cooperation and harmonization of payment and settlement systems. It produced the ASEAN Payments Policy Framework in 2019, which sets the scope, clearing principles, and interoperability considerations for cross-border real-time retail payments.
- **ASEAN+3 Bond Market Forum (ABMF, 2010):** ABMF was established to foster standardization of market practices and harmonize regulations for cross-border

transactions with a focus on capital markets. On the payments front, ABMF's work targets harmonized transaction flows and message items aligned with international standards such as ISO 20022.

- **Cross-border Settlement Infrastructure Forum (CSIF, 2013):** CSIF was established to improve cross-border bond and cash settlement infrastructure. It has defined regional settlement intermediary models and produced technical standards for Central Securities Depository (CSD) - Real-Time Gross Settlement (RTGS) system linkages.
- **ASEAN Payment Connectivity (RPC, 2022):** RPC has formalized the ASEAN-wide cooperation on cross-border retail connectivity with substantial progress in establishing cross-border payment linkages.

12. That said, the payment connectivity discussions in the region are not isolated, but are part of broader digital integration efforts. The ASEAN+3 Leader's process and various free trade agreements form the backbone of the economic cooperation in the region while initiatives such as the Chiang Mai Initiative Multilateralization (CMIM), ABMF, Southeast Asia Disaster Risk Insurance Facility, and RPC reflect efforts toward financial integration. The region is also working towards digital integration through various channels. The ASEAN+3 Economic Cooperation Work Programme highlights digital economy as one of the cooperation areas while the ASEAN+3 Cooperation Work Plan includes cooperation on digital economy and digital infrastructure. The region has also taken steps towards integrating ASEAN+3 markets through digital transformation through initiatives such as the ASEAN+3 Digital Bond Market Forum (DBMF) which aims to complement ABMF and CSIF and integrate regional bond markets. The digital integration efforts in ASEAN have been more specific and include initiatives such as the ASEAN Digital Masterplan 2025 to facilitate cross-border trade of digital services, ASEAN Digital Economy Framework Agreement to harmonize rules for the digital economy and ASEAN Digital Integration Index to track digital integration and identity gaps. The ASEAN economies have also established workplans and partnerships for digital cooperation with the Plus-3 countries.

13. Recent advances in DLT and tokenization have given rise to CBDCs and stablecoins as potential alternatives for cross-border payment instruments, including in ASEAN+3. Several central banks in the region have explored cross-border CBDC use cases through collaborative projects aimed at improving settlement efficiency and enhancing interoperability across jurisdictions. At the same time, privately issued stablecoins—primarily denominated in the US dollar—are increasingly used in parts of the region for cross-border transfers, particularly where speed, cost, or access to traditional banking channels is constrained. While these tokenized instruments offer potential efficiency gains, their adoption in ASEAN+3 also raises policy issues related to monetary sovereignty, financial stability, regulatory consistency, and cross-border oversight, underscoring the need for coordinated regional approaches.

III. Regional Payment Links: Connecting Existing Domestic Systems

14. For retail transactions, ASEAN+3 economies have made significant progress in bilateral cross-border payment arrangements between national payment systems.

Figure 14 and Table 1 provide information on existing regional payment links (as of December 2025). The bilateral arrangements, which began in 2020, demonstrated that cooperation could enable real-time cross-border payments. While the ASEAN economies formalized their initiatives through the Regional Payment Connectivity (RPC) initiative, there has also been cooperation between ASEAN, Plus-3 economies, and some other economies such as India, UAE, Saudi Arabia, and Europe to set up bilateral payment links.⁷ Most of these links were driven by the public sector and have provided critical public infrastructure which has helped level the playing field for many payment service providers. There are also private sector initiatives to facilitate cross-border payments (Box 1).

Figure 14. ASEAN+3: Bilateral Payment Connectivity



Source: AMRO staff stylization.

Note: Dots denote the 14 capitals/jurisdictions of ASEAN+3 member states. Each line connecting two dots denotes at least one bilateral payment link between two jurisdictions. The boundaries and any other information shown on the map do not imply, on the part of AMRO, any judgment on the legal status of any territory or any endorsement or acceptance of such boundaries.

⁷ On 4 December 2023, the Hong Kong Monetary Authority (HKMA) and the BOT launched the FPS x PromptPay Link to enable cross-border QR code payment interoperability between Hong Kong and Thailand. Singapore successfully linked its PayNow system with India's Unified Payments Interface on 21 February 2023 while the South Asian nation officially joined Project Nexus in June 2024 to enhance its cross-border payment capabilities with the ASEAN region. Meanwhile, Japan's Ministry of Economy, Trade and Industry has announced that the country will implement cross-border QR code payment interoperability with ASEAN by 2025. The trials for Korea and Indonesia's QR code payment system connectivity are ongoing, with a full launch targeted for 2026. The developments included here are national FPS linkages. There are also many initiatives for private networks such as China's Alipay+/UnionPay with various ASEAN FPSs, but they will not be covered here. Inter-regional interactions in the payments space are also ongoing: Apart from India, Indonesia is planning to connect its QRIS system with Saudi Arabia's payment system, and has signed a MoU with the Central Bank of UAE focusing on establishing a framework to enhance bilateral payment connectivity. The European Central Bank (TIPS) is also participating in Project Nexus as an observer.

Table 1. ASEAN+3: Selected Bilateral Payment Linkages Within the Region

Economies	Project/ Network name	Launch Date
Cambodia–Thailand	Thai QR–KHQR	February 2020
Thailand–Vietnam	Thai QR–VietQR	March 2021
Singapore–Thailand	PromptPay–PayNow	April 2021
Malaysia–Thailand	DuitNow QR–Thai QR	June 2021
Singapore–Thailand	NETS (QR)–Thai QR	September 2021
Indonesia–Thailand	Thai QR–QRIS	August 2022
Singapore–Thailand	PromptPay–NETS	August 2022
Malaysia–Singapore	DuitNow QR–NETS (QR)	March 2023
Indonesia–Malaysia	QRIS–DuitNow QR	May 2023
Cambodia–Lao PDR	KHQR–LAOQR	August 2023
Indonesia–Singapore	QRIS–NETS (QR)	November 2023
Malaysia–Singapore	DuitNow–PayNow	November 2023
Cambodia–China	Bakong–UnionPay	December 2022
Cambodia–Vietnam	KHQR–VietQR	December 2023
Hong Kong–Thailand	FPS QR–Thai QR	December 2023
Lao PDR–Thailand	LAOQR–Thai QR	April 2024
Cambodia–Korea	Jeonbuk Bank payment via KHQR in Cambodia	August 2024
Cambodia–Malaysia	DuitNow QR–KHQR	September 2024
Cambodia–Private Network*	KHQR–12 international payment users via AliPay+*	October 2024
Cambodia–Vietnam	KHQR–VietQR	October 2024
Lao PDR–China	LAPNet–UnionPay	December 2024
Lao PDR–Vietnam	LAOQR–VietQR	January 2025
China–Hong Kong	Cross-boundary Payment Connect	June 2025
Cambodia–Japan	KHQR–JPQR	July 2025
Indonesia–Japan	QRIS–JPQR	August 2025
Cambodia–Singapore	KHQR–RoamQR via SGQR	November 2025
China–Indonesia	UnionPay, AliPay–QRIS (pilot)	Quarter 1, 2026
China–Vietnam	AliPay–VietQR	April 2026
Korea–Indonesia	Forthcoming QR link	April 2026

Source: AMRO staff compilations.

Note: Cross-border payment linkages enable efficient and real-time cross-border fund transfers, usually in small amounts, among participating members. The table aims to list selected links with at least one national QR system and is not exhaustive. There are other planned initiatives mentioned previously that are not included. Private sector to private sector linkages—such as 2025 initiatives to link three Thai banks with three Chinese payment service providers, and China’s WeChat Pay, Korea’s Kakao Pay with Japan’s PayPay—are not included as well. Furthermore, FinTech products of varying scales connecting e-wallet platforms across economies are not listed. * Cambodia—AliPay+ linkage allows users to make cross-border QR payments to vendors using KHQR from their partner digital wallets in China, Hong Kong (China), Malaysia, the Philippines, Korea, and Singapore, as well as in Mongolia, Macao (China), and Italy.

ASEAN Regional Payment Connectivity: Origins and Progress

15. The RPC represents a concerted effort to link existing FPS, reduce reliance on costly legacy pathways, and provide local currency options for cross-border transactions. It aligns with ASEAN’s broader integration goals under frameworks like the ASEAN Economic Community Blueprint 2025 and reflects commitments made at high-level regional meetings (Pande and others 2025). The initiative was launched in November 2022, with Indonesia, Malaysia, the Philippines, Singapore, and Thailand signing a Memorandum of Understanding to promote regional cross-border payment linkages. The initiative’s core

mission is to facilitate faster, cheaper, more transparent, and more inclusive cross-border payments across the region ([BI, BNM, BSP, MAS, and BOT 2022](#)). Recent expansions have broadened participation to nine ASEAN member states, including Brunei, Cambodia, Lao PDR, and Vietnam.⁸

16. These bilateral connections address some of the inefficiencies of traditional cross-border payments. The connections have enabled real-time or near-real-time transfers, lowered fees, and improved transparency. For micro, small and medium-sized enterprises (MSMEs) and individual users, this means remittances and low-value cross-border transactions are more affordable and efficient than through conventional channels that rely on correspondent banks.

17. Technological innovation, standardization, and unifying frameworks are central to advancing cross-border payment connectivity. The region's efforts leverage a range of standards and technologies to enhance interoperability, compliance, transparency, and speed. These include standardized messaging frameworks (such as ISO 20022), digitalization of national identity, biometric authentication, artificial intelligence, and machine learning algorithms. These efforts have also led to streamlining data sharing, storage, and usage agreements as well as simplifying transactions through proxy identifiers.

18. A good example of improved efficiency is the linkage between Thailand's PromptPay and Singapore's PayNow, launched in April 2021. The linkage allows customers of participating banks to transfer funds of up to THB 25,000 or SGD 1,000 daily using a mobile number. According to [FSB \(2025a\)](#), the total cost of transfers between Singapore and Thailand (fee and FX markup) was significantly reduced from around 13 percent of transaction value before the linkage to less than 3 percent via the linkage. The transfer fees and charges are also displayed to customers before the transfer, which helps improve transparency. Furthermore, the transfer can be completed much faster—within minutes—via the linkage compared to the alternatives, which can take one to two hours or in some cases up to three working days. Based on the BOT data, 869,000 transactions were made in 2024 (an increase of 15 percent from the previous year) with a total amount of THB 5.8 billion (an increase of 23 percent from the previous year).

19. However, bilateral linkages could lead to inefficient use of time and resources in a multilateral setup. Each new bilateral connection adds complexity and requires significant coordination, contractual negotiations, and systems alignment with every other participant.⁹ Additionally, most jurisdictions have developed their payment systems around domestic standards and different technologies. In such instances, authorities seek technological solutions and process streamlining efforts to ensure integration of different payment systems. That said, in the longer term, the payment systems could gradually align to international standards to ease future integrations through bilateral or multilateral arrangements.

20. The complexities involved in establishing bilateral links led to the development of Project Nexus, a unified, one-to-many payment system. Project Nexus is an initiative

⁸ For brevity, "Brunei Darussalam" and "Hong Kong, China" are referred to as "Brunei" and "Hong Kong" in the text, respectively.

⁹ To put the numbers in perspective, if links are set up between each pair of ASEAN+3 members, there would be 91 bilateral links. The significant effort and complexity in adding new bilateral connections incentivize authorities to prioritize connections with economies that have strong retail payment service demand due to tourism, remittances, or SME business links. However, once the major partners are connected, the cost of establishing links with other economies outweighs potential benefits, thus reducing the incentives to pursue these linkages.

facilitated by the BIS IH with participation from multiple central banks including ASEAN members which connect various domestic payment systems to a multilateral network connector, or Nexus Gateway. It comprises of a centralized interoperability hub that manages messaging, settlement coordination, and connectivity among all participants. By reducing technical and operational complexity, and promoting standardization, Project Nexus supports expansion and enhances network effects, making it possible to connect a large number of domestic payment systems without an exponential increase in interface development (Pande and others 2025).¹⁰

21. Though retail payment connectivity in ASEAN+3 economies has improved, similar corridors with the rest of the world are still lagging. As of February 2026, the only active retail payment link between an ASEAN+3 economy and an economy outside the region is the India–Singapore link. Although there are discussions between some ASEAN+3 economies and other economies, the progress has been much slower than intra-ASEAN developments. Indeed, real economic linkages and intra-regional cooperation are much stronger within the ASEAN+3 region, but the limited progress is also a reflection of constraints related to governance, regulation, and consumer protection.

Wholesale Payments: Limited Progress

22. While ASEAN+3 retail FPS linkages have made significant progress, advances on the wholesale front have been slower. According to FSB (2025a), the Asia-Pacific region is generally more advanced than others in FPS interlinkages, migration to ISO 20022, and the use of APIs, but has fewer concrete plans to extend RTGS operating hours or broaden access. As FPS mainly supports retail payments while RTGS underpins large-value and wholesale transactions, the slower development of wholesale linkages likely reflects deeper structural and policy challenges, including capital flow management measures, liquidity considerations, and stricter AML/CFT requirements. Development of wholesale payment linkages would support regional integration through trade finance, capital markets and investment flows, and institutional remittances and transfers.

23. While progress on costs, speed, transparency, and access is likely limited, regional coordination has been seen in initiatives such as the Local Currency Settlement Framework (LCSF).¹¹ The LCSF was established to encourage the use of participant countries' local currencies for settlement of cross-border transactions such as trade (goods and services), direct investments, and income and transfers. The initiative facilitates reduced reliance on major foreign currencies, such as the US dollar. The initiative is not explicitly linked to cross-border payment connectivity in the region, but it shares the objective of reducing reliance on foreign currencies. The LCSF was first implemented between Malaysia and Thailand in 2016 and has since expanded to include more members, cover more types of transactions, and has seen progress on harmonizing regulatory

¹⁰ In practice, Nexus Global Payments—a not-for-profit manager of the project—enables linked retail payments across member systems.

¹¹ LCSF is a bilateral arrangement between two economies to facilitate the use of their local currencies (i.e. domestic currency of one of the trading partners) for cross-border settlement. This framework provides a flexible and efficient means to access the counterpart's foreign currency to settle payments for trade, direct and portfolio investments, and transfers, without using a vehicle currency. The transactions are facilitated by the Appointed Cross-Currency Dealers (ACCDs), financial institutions authorized by central banks to offer direct bilateral currency exchange and settlement services. They may also provide other local currency services such as deposit accounts, trade-related settlement services, liquidity provision, and basic FX risk-management solutions for their customers.

requirements.^{12,13} The LCSF and the subsequent Local Currency Transaction Framework (LCTF) Operational Guidelines have helped economies make some progress in adopting local currencies for cross-border transactions but structural and operational challenges have hindered the adoption (Box 2).

IV. Stablecoins and CBDCs: Tokenized Instruments in Cross-border Transactions

24. While there has been rapid progress in connecting existing infrastructure, the advent of tokenized payment alternatives seems to be much closer than ever.¹⁴ Some of the issues related to traditional cross-border payments are being addressed by establishing cross-border FPS and QR-based connections. However, tokenization can further improve these systems and enhance their use by enabling offline use, 24/7 real-time atomic settlements, and programmability. Tokenized payment alternatives may be classified based on whether they are issued by the public sector (retail and wholesale CBDCs) or the private sector (stablecoins, tokenized deposits) issuers. While all of these initiatives have been studied by public and private sectors, the recent regulatory developments such as US' GENIUS Act and EU's MiCA Act (see Box 3) have brought stablecoins much closer to large-scale adoption, which could also reinvigorate efforts to bring CBDCs and tokenized deposits into mainstream payment solutions. These acts reduce legal and regulatory uncertainty and create a regime to protect customers and mitigate potential illicit finance risks and financial stability risks emerging from stablecoins, thereby increasing regulatory clarity for issuers and increasing user confidence ([Liang 2025](#)).

CBDCs stay on the radar

25. Global efforts toward CBDCs have diverged across jurisdictions. Interest in CBDCs continues, with the exploration of wholesale CBDCs (wCBDCs) at more advanced stages than retail CBDCs (rCBDCs) ([Illes and others 2025](#)), as wCBDCs face fewer policy trade-offs around bank disintermediation and privacy because access is generally restricted to regulated financial institutions and wCBDCs have a clearer near-term use case in cross-border payments and tokenized settlement. As of July 2025, 137 countries and currency unions, representing 98 percent of global GDP, are exploring CBDCs ([Atlantic Council 2025](#)) and some economies have made notable progress. Examples include the launch of CBDCs in the Bahamas, Nigeria, and Jamaica¹⁵ (Figure 15, 16, and 17); a potential launch by 2026

¹² The LCSF was first implemented between [Malaysia and Thailand](#) in 2016 and later expanded to include [Indonesia](#) in late 2017. Since then, the framework has been progressively expanded to cover both trade and direct investment transactions, alongside an increase in the number of participating ACCDs. Indonesia has also expanded the framework bilaterally with [Japan](#) and [China](#) in 2020, [Korea](#) in 2024, as well as signing agreement for future expansion with [Singapore](#) in 2022 and the [UAE](#) in 2024. In February 2025, BOT, BI, and BNM have adopted a Local Currency Transaction Framework Operational Guidelines (LCTF OG) to set out the common operational parameters to harmonize regulatory requirements between the members. The framework also was also expanded to include portfolio investment as eligible transactions under the frameworks ([BOT, BI, and BNM 2025](#)).

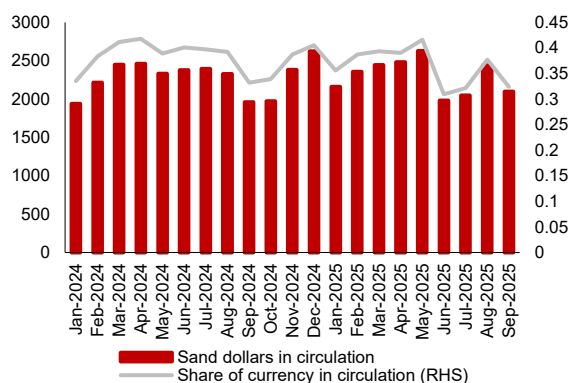
¹³ AMRO staff discussions with the BSP indicate that the Philippines is actively exploring participation in the LCTF as part of broader ASEAN efforts to promote local currency usage in the region.

¹⁴ Tokenization is a digital representation of an asset on a programmable ledger, where the token is a claim on the issuer, and is enabled by technologies such as the distributed ledger technology (DLT). Tokenization is the creation or representation of assets on a digital ledger that is shared, programmable, and trusted among users ([Agur and other 2025](#)).

¹⁵ The Bahamas, Nigeria and Jamaica officially launched their CBDCs around 4-5 year ago ([IMF 2023a](#)). Adoption remains very limited with less than 2 percent of the population in Nigeria and less than 1 percent in Jamaica and the Bahamas ([IMF 2025](#)). The slow uptake is not surprising, as the adoption rate of new technologies and innovations tends to be slow at first ([IMF 2024](#)).

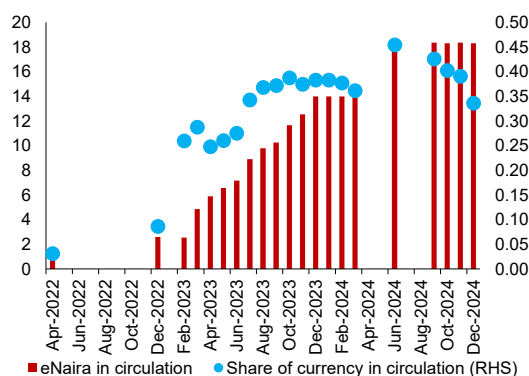
in Kazakhstan, Brazil,¹⁶ and Russia; rapid expansion of India's digital rupee (e₹) pilot¹⁷ (Figure 18), and the significant progress by the ECB as it moves towards an issuance decision (see Box 4).¹⁸ That said, some economies (such as US, Canada) have dialed down their CBDC exploration¹⁹. In ASEAN+3, most economies have explored rCBDCs, or wCBDCs, or both (See Annex 1).

Figure 15. Sand Dollar in Circulation
(Thousands of Bahamian dollar; percent)



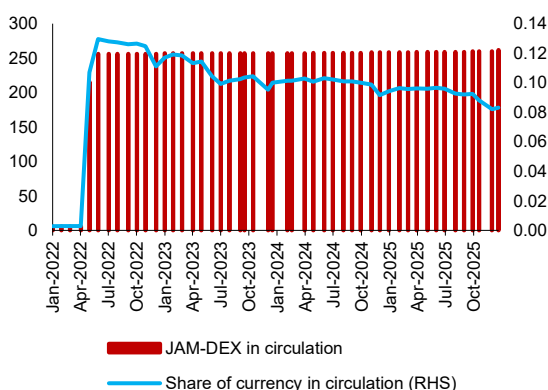
Source: Central Bank of Bahamas.

Figure 16. eNaira in Circulation
(Billions of Nigerian naira; percent)



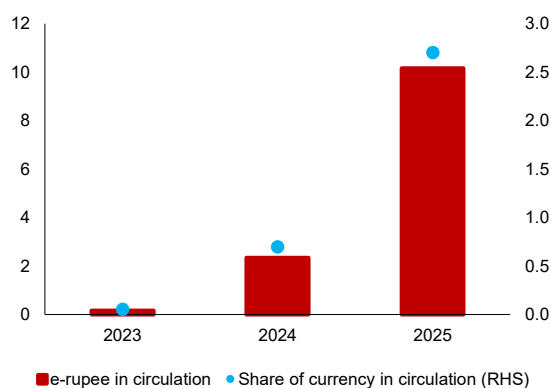
Source: Central Bank of Nigeria.

Figure 17. JAM-DEX in Circulation
(Millions of Jamaican dollar; percent)



Source: Central Bank of Jamaica.

Figure 18. e-rupee in Circulation
(Billions of Indian rupee; percent)



Source: Reserve Bank of India.

Note: Data are as of March 31 of each calendar year.

26. Beyond domestic use cases, authorities around the world have been exploring the use of CBDCs, particularly wCBDCs, for cross-border payments to help address inefficiencies in cross-border transactions. While there have been some projects (such

¹⁶ Banco Central do Brazil's Drex has entered Phase 2 to test selected real-world use cases (e.g., collateralized credit, trade finance, and real estate transactions). In light of privacy and scalability issues flagged in Phase 1, press reporting indicates the bank is discontinuing the blockchain component of Drex and adopting a more technology-agnostic approach (while not ruling out DLT later if needed) ([Forbes, 2025](#)). The near-term focus is reportedly being narrowed to a lien-reconciliation/collateral-management solution to support collateral-backed credit operations, targeted for rollout in 2026 ([Valor 2025](#)).

¹⁷ India's digital rupee (e₹) pilot continues to expand, adding nonbanks as e₹ wallet providers and incorporating offline functionality and programmability features ([RBI 2026](#)). As of March 2025, the e₹ in circulation reached 10.2 billion rupees, up 334 percent year-on-year ([RBI 2025](#)).

¹⁸ ECB concluded its two-year preparation phase in October 2025 and has moved into a subsequent phase to build the necessary technical capacity ahead of any issuance decision (ECB 2025). The ECB aims to be ready for a potential first issuance in 2029, conditional on EU legislation being in place in 2026.

¹⁹ The US has prohibited CBDCs and pivoted toward stablecoins ([The White House 2025a](#), [The White House 2025b](#)). The Bank of Canada has scaled down its CBDC work and shifted its focus on broader payments-system research and policy priorities ([Bank of Canada](#), accessed on February 11, 2026).

as Project Icebreaker)²⁰ which explore the use of retail CBDCs for instant, cross-border, and cross-currency transactions, there have been many more initiatives exploring the use of central bank reserves through wCBDCs (including tokenized central bank deposits) for cross-border payments. Some of the major projects involving ASEAN+3 economies are:

- **Project Dunbar**²¹ completed proof-of-concept work and developed DLT-based prototypes for a multi-CBDC shared platform in March 2022. The prototypes proved that financial institutions could use CBDCs issued by participating central banks to transact directly with each other on a shared platform, which has the potential to reduce cost and time of cross-border transactions.
- The ongoing **Project mBridge**²² builds on similar multi-CBDC logic but is at a more advanced stage. The project conducted a real-value transaction pilot in 2022, during which 164 cross-border payment and FX payment-versus-payment transactions were processed, with a total value of about USD 22.1 million. Project mBridge reached minimum viable product (MVP) stage in mid-2024, positioning it for further international participation and testing of add-on technology solutions, new use cases, and interoperability with other platforms ([BIS 2024b](#)). The project has then invited private sector firms to participate in the mBridge MVP platform and propose solutions and use cases ([BIS 2024b](#)). As of the end of November 2025, Project mBridge had cumulatively processed 4,047 cross-border payment transactions, with a total transaction value of USD 55.49 billion ([Chhangani 2026](#)). The project demonstrates that a shared multi-CBDC ledger can compress the cross-border chain (payment and FX) into a single platform and achieve a near-instant settlement for participating banks.
- Seeing the rising potential of tokenization, **Project Agorá**²³, launched in 2024, is testing the desirability, feasibility and viability of a multi-currency unified ledger for wholesale cross-border payments by using tokenized commercial and wholesale central bank money ([BIS 2025c](#)). As a large-scale public-private collaboration involving seven central banks (including those of five of the eight major reserve currencies i.e., USD, EUR, JPY, GBP, and CHF that account for 88 percent of the global foreign exchange reserves as of Q3 2025) and over 40 financial institutions, Agorá aims to enhance the functioning of cross-border payments while maintaining the two-tier structure of the monetary system²⁴. It is testing a pathway that keeps

²⁰ Project Icebreaker was a completed retail CBDC experiment (concluded March 2023) led by the BIS Innovation Hub Nordic Centre in collaboration with the central banks of Israel, Norway, and Sweden. Its central contribution was demonstrating a "hub-and-spoke" architecture that allows domestic retail CBDCs to be used for cross-border, cross-currency payments without ever leaving their home systems — foreign exchange providers active in both jurisdictions handle the currency conversion, with the hub automatically selecting the most competitive rate.

²¹ Project Dunbar was led by the BIS Innovation Hub in partnership with the Reserve Bank of Australia, Central Bank of Malaysia, Monetary Authority of Singapore, and South African Reserve Bank.

²² Project mBridge was a collaboration between the BIS Innovation Hub, the Bank of Thailand, the Central Bank of the United Arab Emirates, the Digital Currency Institute of the People's Bank of China and the Hong Kong Monetary Authority. The Saudi Central Bank joined in 2024. The BIS announced in October 2024 that it was handing the project over to the participating central banks. The transfer from BIS to the participating central banks was completed in mid-2025.

²³ Project Agorá is led by the BIS Innovation Hub. It involves seven central banks (i.e., the Bank of France representing the Eurosystem, the Bank of Japan, the Bank of Korea, the Bank of Mexico, the Swiss National Bank, the Federal Reserve of New York through its New York Innovation Center and the Bank of England) and a large group of private sector companies convened by the Institute of International Finance.

²⁴ A two-tier monetary system refers to the institutional arrangement in which the central bank issues base money (cash to public through banks and reserves to banks) and provides settlement infrastructure, while private-sector intermediaries (primarily commercial banks) provide money-like claims (e.g. deposits), credit intermediation, and payment services to households and firms.

commercial bank money at the payments layer while using central bank money for settlement finality, aiming to reduce frictions without redesigning the monetary system around retail CBDC and an explicit attention to “compliance-by-design.”

27. Many ASEAN+3 economies emphasize maintaining technical preparedness for the possibility of future issuance of rCBDC but China’s digital fiat money (e-CNY) has seen some concrete progress both at the domestic level and in cross-border payments. Many ASEAN+3 economies don’t see an immediate need to introduce rCBDC as the existing payment landscape is rapidly advancing. In contrast, China launched the e-CNY pilot in 2019 and integrated e-CNY into Alipay and WeChat Pay in late 2022 and early 2023, respectively to encourage adoption.²⁵ To support adoption and strengthen intermediaries’ incentives, the People’s Bank of China (PBOC) introduced a new e-CNY management framework effective 1 January 2026, which upgraded e-CNY from digital cash to digital deposit money bearing interest and protected by deposit insurance. The e-CNY pilot has expanded to Hong Kong and Singapore. Hong Kong residents now can set up and top up e-CNY wallets locally via the Faster Payment System ([HKMA 2024](#)). Singapore travelers, starting December 2025, can open and top up an e-CNY wallet locally for merchant payment in China ([MAS 2025](#)). Cambodia launched the Bakong payment system in October 2020, which is not a CBDC but incorporates many CBDC-like features and provides a real-life case of deploying private DLT in payment infrastructure ([Pande and Quach 2022](#)). Bakong has been linked with many other regional QR codes to enable cross-border payments.

28. On the wholesale side, many economies view wCBDCs as a practical tool to modernize payment and settlement infrastructure and have explored their utilities in cross-border payments. The BOT–HKMA launched the project Inthanon-Lionrock to study cross-border wCBDC fund transfers and develop related monitoring capabilities. Singapore’s project Ubin’s phase 5 built one of the first multi-currency payments network prototypes with commercial partners providing a detailed “end-to-end” multi-currency settlement design. In the meantime, central banks in the region have actively participated in multilateral initiatives on cross-border payment connectivity, such as project Dunbar (participating ASEAN+3 central banks: MAS, BNM), Ubin+ (MAS), mBridge (PBOC, HKMA, BOT, observing members BOK, BI, BNM, BSP) ([BIS IH 2022](#), [MAS 2022](#), [BIS IH 2024](#)).²⁶ The Bank of Japan (BOJ) and the Bank of Korea (BOK) have participated in the BIS-led Project Agorá. Collectively, these efforts have explored the potential role of wCBDC in enhancing cross-border payment infrastructure.

Stablecoins lead the way for private tokenized payment instruments

29. Stablecoins are transitioning from niche crypto instruments into transactional assets within tokenized markets and are increasingly being considered for real-world applications, including cross-border payments. Stablecoins have primarily served as “cash equivalents” for on-chain trading.²⁷ However, they are finding more applications in real-world transactions such as cross-border payments, treasury management, and tokenization of assets (JPMorgan). Major jurisdictions, such as the US, EU, Singapore, Hong Kong, Japan, UAE, as well as International Organizations/bodies are developing and

²⁵ As of end-November 2025, the e-CNY had processed a cumulative 3.48 billion transactions with a total value of RMB 16.7 trillion, and 230 million personal wallets had been opened via the e-CNY app.

²⁶ The Central Bank of the United Arab Emirates and Saudi Central Bank are the other members of Project mBridge. The project also has more than thirty observing members including many central banks around the world.

²⁷ Note that stablecoins fall short of the criteria to be considered money or cash ([BIS 2025b](#)); however, they have been used extensively as the cash-leg of on-chain transactions.

strengthening regulatory frameworks around stablecoins, encouraging experimentation by payment providers and financial institutions (see Box 5). These frameworks, when implemented, would increase the attractiveness of stablecoins, especially in cross-border use cases. According to [Boston Consulting Group \(2025\)](#), stablecoins could capture up to 30 percent of total transaction-related revenue pools in high-priority remittance and trade corridors. That said, the potential scale of stablecoin adoption remains uncertain and the adoption for cross-border payments would likely be dependent on regulatory frameworks, interoperability with existing payment systems, policy considerations as well as developments in competing cross-border payment systems.

30. There appears to be interest among some ASEAN+3 economies (both public and private sectors) in using stablecoins. Some authorities in ASEAN+3 are exploring regulated use cases for stablecoins while strengthening safeguards through regulatory frameworks. Hong Kong, Japan, and Singapore have detailed regulatory requirements for stablecoins issuance, intermediation, and use in payments. Other members have made some progress in recognizing and encouraging pilots related to payment stablecoins. The Philippines has tested under the BSP's Regulatory Sandbox Framework the issuance and use of a PHP-backed stablecoin. The experimentation was completed in 2025, with cross-border remittance as the primary use case. It is expected to transition to broader implementation after satisfactory completion of supervisory expectations. That said, many other jurisdictions are yet to formally recognize stablecoins as a payment infrastructure. Some ASEAN+3 authorities are, however, considering local currency pegged stablecoins and their applications to both domestic and/or cross-border payment infrastructure. On the other hand, USD stablecoins are seeing some integration in regional payment systems. For instance, OKX Pay provides customers with payment services based on USD stablecoins. Additionally, offshore wallets/ exchanges are also available and, based on anecdotal evidence, are being used for cross-border transactions. While these movements regarding foreign-currency denominated stablecoins could bring convenience to regional payments, it could also bring currency substitution and financial stability risks, such as money laundering and terrorism financing ([ECB 2020a](#), [CPMI 2023](#)).

31. Tokenized deposits have been studied by various international, public and private organizations, and have started seeing some selective, wholesale, institution-to-institution usage. Most of the studies and use cases of tokenized deposits by international organizations, and public sector have been conducted in the context of tokenizing wholesale financial infrastructure. For example, Project Agora tests tokenized deposits integrated with wholesale CBDC to preserve the two-tier system ([BIS 2024a](#)). Project Guardian FX led by the MAS has a workstream focused on tokenized bank liabilities and shared-ledger infrastructure for 24/7 real-time cross-border settlements and explores them as interoperable settlement assets across institutions and jurisdictions. So far, tokenized deposits have otherwise seen limited research in the context of cross-border transactions.

Potential benefits and risks from tokenized payment instruments

32. Tokenized payment instruments, i.e., CBDCs and stablecoins, can help enhance the efficiency of cross-border payment transactions through technology. The primary benefits of using tokenized payment instruments include speed (instant payments), 24/7 settlement, lower costs, improved transparency, programmability, atomic settlements, interoperability, and reduced dependence on correspondent banks. Beyond these benefits,

the currency of denomination plays an important role as it can have implications for policy effectiveness and financial stability.

33. From a cross-border transaction perspective, local currency-denominated tokenized instruments present limited financial stability risks, but integration issues could slow down the adoption. The use of local currency tokenized instruments for cross-border transactions can be achieved under two scenarios: either (1) when the payment partner in the other jurisdiction is willing to transact in local currency tokens or (2) when there is an efficient and instantaneous conversion infrastructure for tokens in domestic currency to that of the other jurisdiction.

- **The first scenario** is more likely when the payment partner's domestic currency is perceived to be less attractive or stable to hold than the local currency. The offshore entity holding the tokenized instrument could use its holdings to back or provide the functional equivalent of an offshore account and payment services in the local currency. This could cause the local tokenized instruments to act as an underlying for potentially illegal transactions, with reputational risks to the local token issuer ([CPMI 2018b](#)). Specifically in the case of excessive CBDC holdings by offshore investors, there would be an additional drain of liquidity from the local banking system and managing the liquidity shortfall could be an overhead for the central bank and the banking system.
- **The second scenario** poses less financial stability risks as the conversion mechanisms would ensure that the tokens are converted to equivalent tokens or money in the other currency. This will ensure that there is no liquidity drag in the domestic banking system while ensuring that the use of domestic currency denominated tokens in offshore markets is limited, and their use is fully regulated. The challenge in this case would be to establish conversion mechanisms, which will need sophisticated technologies to convert the currency tokens to tokens or bank balances in the other currency (depending on the partner's payment systems) and developed cross-currency markets which can provide 24/7 prices for conversions. These issues could slow down the adoption of cross-border tokenized conversions. This scenario can leverage the findings and experiences from various projects such as mBridge, Mariana, Dunbar, and Agora to establish the token conversion.

34. While foreign-currency stablecoins offer easier infrastructure solutions, they can hamper domestic policy effectiveness. Global currencies, especially the US dollar, are more dominant in trade invoicing, have better FX liquidity, and much higher volumes of stablecoins – providing them an advantage in cross-border use cases. Depending on the regulatory arrangements in the issuer's jurisdiction, the runway to adopting foreign-currency stablecoins could be much shorter and easier. However, it could reduce the effectiveness of domestic policy through currency substitution, resulting in an ineffective monetary policy transmission ([IMF 2023b](#)), capital control circumvention, illicit finance, challenges around FX reporting as well as potential spillovers to domestic economies from coin runs and reserve instability ([Fu and others 2025](#), [AsianBondsOnline 2025](#)). Additionally, some countries may not have stringent regulations for foreign-currency stablecoins which may create scope for regulatory arbitrage.

35. On the other hand, foreign-currency CBDCs could present lower risks if bilateral arrangements to prevent emerging risks, including currency substitution, can

be established. While many countries have regulated the issuance of stablecoins in their jurisdictions, there has been limited progress on regulating the use of these stablecoins in foreign countries. This poses the risk of dollarization in the foreign economy using stablecoins denominated in local currency. The risk is similar when foreign CBDCs are used for transactions but better coordination between authorities could limit these risks, or Capital Flow Management measures may be implemented on foreign CBDCs (IMF 2023c). While authorities can restrict the provision of foreign tokenized instruments by regulated entities (such as PSPs), they will need coordination with the foreign issuers to ensure that these tokenized instruments cannot be used through channels that are not controlled by the local authority.

36. While most ASEAN+3 economies have yet to implement comprehensive stablecoin-specific frameworks, Japan, Singapore, and Hong Kong have emerged as early movers with cautious but differentiated approaches. All three emphasize full reserve backing or redemption at par, licensing or labeling requirements, and strong financial stability safeguards, albeit under distinct regulatory philosophies. Japan permits the issuance of fiat-referenced stablecoins by entities licensed as banks, trust companies, and fund transfer service providers, subject to stringent requirements for reserve backing, governance, disclosure, and risk management. Hong Kong has introduced a dedicated licensing regime overseen by the HKMA and issuers are licensed to issue fiat-referenced stablecoins if they meet strict prudential, reserve, and disclosure standards. On the other hand, Singapore’s new single-currency stablecoin framework defines a labelling regime for issuers that allows tokens pegged to the Singapore dollar or any G10 currency to qualify as “MAS-regulated stablecoins” if they meet prescribed standards, including being issued in Singapore. Other stablecoins are treated as digital payment tokens under the broader Payment Services Act regime, preserving space for innovation within defined safeguards. Taken together, these frameworks signal a shared regional direction: allowing differing degrees of stablecoin innovation within a tightly supervised and prudentially robust regulatory perimeter. Strong domestic regulation will serve as a basis for regulation on foreign denominated stablecoins.

V. Key Challenges and Way Forward for Regional Payment Connectivity

Key Challenges: Retail Payments

37. Despite rapid progress in retail cross-border payment connectivity, the existing linkages still have some shortcomings. The linkages in the region have helped reduce the costs, shorten transfer times, and increase transparency and access for retail payments. However, there are still some gaps in the existing setups. First, while the accessibility to retail payment rails has increased, it is still restricted in most of the linkages. Some examples include access limited to customers of selected PSPs, focused on a specific type of payment (such as P2B or P2P or remittances), and unidirectional linkages. Second, the transaction size is restricted. This helps provide a safeguard against large-scale fraud risk (lower maximum loss per incident) and reduces the attractiveness for illicit high-value transfers, while making it easier for participating banks to manage their risks. However, it also makes these linkages unable to cover the entire gamut of retail payments, especially B2B where MSME businesses may need higher transfer limits.

38. A central challenge for establishing new ASEAN+3 payment links stems from heterogeneity across economies in regulatory frameworks, technical capacity, governance arrangements, the stage of development of domestic payment systems and readiness to initiate cross-border integrations. Financial services are regulated according to domestic legal traditions, policy priorities, and risk tolerances, and these differences can impede seamless interoperability.

- **Payment systems are typically designed for domestic use and tailored to country-specific technologies, institutions, and legal frameworks, resulting in heterogeneous systems that are difficult to integrate across borders.** As a result, cross-border linkages face challenges across three broad areas: technical (differences in standards, data formats, and customer identifiers), regulatory (divergent laws on data, AML/CFT, and settlement finality), and governance (participation rules, service levels, and dispute resolution). These differences increase fragmentation, processing costs, and operational complexity, constraining seamless regional payment integration ([Pande and others 2025](#))
- **On the regulatory front, divergences in data privacy regimes, AML/CFT standards, consumer protection rules, and activity-specific regulations complicate cross-border integration.** Although most ASEAN+3 economies have enacted data protection laws, variations in their scope and enforcement can constrain cross-border data sharing and storage (Table 2). Similarly, inconsistencies in AML/CFT and KYC requirements may delay or obstruct transactions when compliance checks cannot be effectively aligned across jurisdictions. The FSB has identified regulatory fragmentation as a key obstacle to seamless payment integration, as it raises costs, delays transactions, and constrains interoperability across national payment infrastructures ([FSB 2024](#)).
- **Resource constraints limit scalability of retail payment links under bilateral connectivity models.** Establishing bilateral links between all ASEAN+3 economies would require 91 connections. Such an approach places heavy demands on operational capacity, regulatory coordination, AML/CFT screening, and ongoing technical maintenance. By contrast, multilateral architectures—such as hub-and-spoke arrangements or Project Nexus—can reduce duplication, lower coordination costs, and achieve scale more efficiently through standardized connections and compliance processes.
- Additionally, the stage of developing domestic payment systems is diverse in the region. While some economies have well-developed domestic payment systems which can be integrated using bilateral and multilateral links, there are others where the systems are still being developed for domestic adoption. Acknowledging this diversity, and encouraging alignment with global best practices, would allow the upcoming payment systems to be in better readiness when they enter the phase of cross-border integrations.

Key Challenges: Wholesale Payments

39. Progress on cross-border wholesale linkages could be constrained by the limited supporting infrastructure. Extending the cross-border linkages to wholesale cross-

border transactions—including large-value corporate payments and interbank settlements—is also challenging.

- **Wholesale payments require more stringent AML/CFT screening, given the higher risks associated with large-value transactions.** As advanced technologies enable near-instant settlement, regulators need harmonized approaches to transaction monitoring and reporting. Inconsistent AML/CFT standards can create vulnerabilities across the network, particularly if weaknesses exist in any single jurisdiction.
- **Wholesale transactions also intersect more directly with capital account restrictions and foreign exchange regulations.** Differing degrees of capital account liberalization and divergent FX rules can complicate real-time settlement of large-value transfers. As transaction sizes increase, liquidity management and settlement risks intensify, requiring robust risk buffers, liquidity backstops, and common settlement protocols to safeguard financial stability ([AMRO 2023a](#)).
- **Lack of local currency FX market depth and liquidity also presents an important challenge to wholesale transactions under LCSF.** Limited depth and liquidity in the local FX market could lead to weaker price discovery, persistently wide bid–ask spreads and prevent effective FX risk management. This can make local currency transactions within the region more costly.

Table 2. ASEAN+3, US, and EU: Fintech Regulations in Place, 2025

	BN	KH*	CN*	HK	ID	JP*	KR	LA	MY	MM	PH	SG*	TH	VN	US	EU
Digital national Identity	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green
Electronic-KYC/AML/CFT	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green
Privacy and data sharing/protection	Green	Yellow	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green
Sandboxes & innovation hubs	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green
Payment service providers & e-money	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green
P2P lending & other forms of nonbank credit	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green
Digital banking	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green
Cloud computing	Green	Red	Green	Red	Green	Red	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green
Crypto or digital assets	Yellow	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green
Distributed Ledger Technology	Red	Red	Green	Red	Red	Red	Red	Red	Red	Red	Red	Red	Red	Red	Red	Red
Artificial intelligence/machine learning	Red	Red	Red	Red	Red	Red	Red	Red	Red	Red	Red	Red	Red	Red	Red	Red
Open banking	Red	Red	Red	Red	Red	Red	Red	Red	Red	Red	Red	Red	Red	Red	Red	Red
Application Programming Interface	Green	Red	Green	Red	Green	Red	Yellow	Red	Yellow	Red	Red	Red	Red	Red	Red	Red

■ = law or regulation in place/applicable to activity
■ = law or regulation being developed or planned but may have guidelines/recommendations in place
■ = no law nor regulation but may have guidelines/recommendations in place

Source: National authorities; AMRO staff compilation.

Note: Asterisk (*) denotes regulations of a particular economy have not been cross-validated with authorities' inputs to an April 2025 survey sent by AMRO. In the heatmap, green means there is at least one legally binding law or regulation in place for the specific activity. Yellow means related policies are still in development or the planning phase, while red indicates that no regulations have been imposed on the activity. Laws include acts, decrees, ordinances, prakas, and regulations. Associated guidelines and recommendations are not considered legally binding. Guidelines and recommendations include standards, principles, guidance frameworks, and sandboxes. AML/CFT = anti-money laundering and combating of the financing of terrorism; BN = Brunei; KH = Cambodia; CN = China; EU = euro area; HK = Hong Kong; ID = Indonesia; JP = Japan; KYC = know-your-customer; KR = Korea; LA = Lao PDR; MY = Malaysia; MM = Myanmar; P2P = peer-to-peer; PH = Philippines; SG = Singapore; TH = Thailand; VN = Vietnam; US = United States.

Key Challenges: Tokenized Payments

40. While DLT holds promise, its implementation faces maturity and governance hurdles. The key attributes of DLT could allow users to strengthen document digitization and traceability in trade finance, and cross-border sharing of KYC/AML records, among other cross-border payment uses. Various pilot experiments and research into use cases for

CBDCs and tokenized assets have also shown potential, but highlight technical, regulatory, and risk management complexities that must be addressed before widespread deployment in live, high-volume cross-border applications (Fu and others 2025). In addition, implementing DLT in cross-border payment networks could introduce an additional channel for cyberattacks and integration issues for jurisdictions still relying on legacy payment infrastructure.

41. In the cases of tokenized payments, including stablecoins, risks can also stem from their interaction with heterogeneous regulatory regimes, open capital accounts, and deep cross-border payment linkages. As discussed in the preceding section, widespread use of foreign-currency stablecoins could intensify currency substitution, and the resulting weakness in monetary policy transmission, and increase capital-flow volatility, particularly in emerging ASEAN economies. Run risk is amplified by instant, cross-border redemption and uneven reserve and disclosure standards across jurisdictions, with potential spillovers to regional money markets. At the same time, regulatory fragmentation and differing AML/CFT, data-governance, and consumer-protection frameworks create scope for arbitrage, while operational and cyber risks from shared DLT infrastructure or dominant private platforms could disrupt critical payment channels. Without clear legal certainty on redemption rights and settlement finality, these risks could undermine trust and complicate the integration of tokenized payments.

Key Challenges: Technical and Regulatory Heterogeneity

42. Technical disparities, fragmented governance, and differing stablecoin regulations across ASEAN+3 economies hinder deeper payment integration, highlighting the need for stronger regional coordination.

- **Technical disparities further constrain integration.** While some economies have advanced digital infrastructures—such as fast payment systems, APIs, cloud platforms, and readiness for stablecoin adoption—others are still developing these capabilities. Rising cybersecurity risks amplify these challenges, as the resilience of a payment network depends on its weakest link. Uneven cybersecurity standards can expose the system to data breaches, service disruptions, and malware attacks, making it difficult to bridge gaps without overburdening less advanced members.
- **Governance arrangements also remain insufficiently harmonized.** Differences in supervisory practices and incident-response protocols can generate operational risks in interconnected systems, particularly in the absence of clear rules on oversight and accountability. Moreover, faster cross-border settlement heightens challenges in fraud detection and dispute resolution, underscoring the need for real-time monitoring tools and well-defined bilateral or multilateral protocols.
- **In the case of stablecoins, the regulatory treatment varies widely across the region.** For instance, China maintains a prohibitive stance on virtual currencies including stablecoins, while Singapore,²⁸ Hong Kong, and Japan have adopted dedicated regulatory frameworks. Elsewhere, stablecoins are largely governed under existing payments or digital asset regulatory frameworks. This divergence may create

²⁸ MAS announced in August 2023 that it had finalized a stablecoin regulatory framework, which would apply to single-currency stablecoins pegged to the Singapore dollar or any G10 currency that is issued in Singapore.

scope for regulatory arbitrage, given the inherently cross-border nature of stablecoin activities, highlighting the potential benefits of greater regional coordination.

Way forward

Three Key Priorities: (1) *enhancing retail payment connectivity*, (2) *advancing wholesale connectivity*, and (3) *enhancing coordination on digital assets*

43. ASEAN+3 has made strong progress in retail payment connectivity, and the next phase should focus on compatibility and quality. The next phase may necessitate a two-pronged approach. The authorities should focus on improving existing linkages which will expand the accessibility of the linkages to a wider range of individual and MSME customers, enabling a broader range of use cases. At the same time, strategically establishing new linkages should continue to safeguard payment rails with key economic partners, overcoming the technological shortcomings of existing payment systems.

- The constraints on existing payment links can be gradually eased. The access to the payment linkages could broaden if authorities define the qualifying criteria for PSPs and keep the options to add new PSPs open. This process would ease as authorities gain more experience in monitoring and managing risks. The excluded PSPs may work towards meeting the qualifying criteria and may benefit from active engagement with the authorities to close their qualification gaps. Separately, advanced technological solutions using Machine Learning and Artificial Intelligence algorithms for real-time transaction monitoring will refine as they accumulate more data, thus improving the level of real-time risk management. This would allow a prudent increase in transaction limits, enabling the use of these links to expand to B2B payments between MSMEs.
- For establishing new linkages, a gradual shift toward global technical and regulatory standards—such as common messaging formats, interoperable APIs, and aligned compliance frameworks—would help ensure scalability and compatibility with the broader global payment ecosystem. At the same time, deeper regional coordination and standardization can reduce fragmentation across bilateral arrangements, while stronger guardrails for new connections, including clear governance, cybersecurity safeguards, and consumer protection protocols, will be important to manage risks as networks expand. This measured approach would allow the region to build on its existing momentum while strengthening resilience and long-term interoperability. The region should also actively explore ways to establish payment links with the rest of the world. However, as setting up bilateral links could be effort intensive, the efforts could be directed towards establishing these links between the ASEAN+3 bloc and major economies outside the region. Multilateral initiatives, such as Nexus, could be leveraged to enhance connectivity with the rest of the world.

44. Advancing wholesale connectivity including with the global financial system should be a key priority for ASEAN+3 to improve the efficiency of cross-border payments that underpin trade, investment, and financial market activity. A holistic approach is needed—one that strengthens not only payment links but also the surrounding ecosystem, including FX settlement mechanisms, regulatory alignments, liquidity management frameworks, and access to funding. Also, connectivity with the global financial system is necessary as ASEAN+3 is deeply dependent on inter-regional trade and cross-

border capital flows. Enhancing central bank facilities and backstops could help support banks engaged in cross-border wholesale transactions, while deeper integration with regional capital markets, particularly local currency bond markets, would facilitate smoother financing and settlement flows. In parallel, developing common compliance protocols and standardized requirements for participating banks and corporates would reduce operational frictions, improve scalability, and ensure that expanding wholesale connectivity is both efficient and resilient.

45. ASEAN+3 authorities should adopt a coordinated and comprehensive approach to stablecoin oversight, given their cross-border nature and potential systemic implications. A key priority is stronger regional and global coordination—including the use of supervisory colleges for systemically important stablecoin arrangements—to facilitate information sharing, joint monitoring, and crisis management. Global policy guidance stresses that stablecoin regulation should be comprehensive, consistent, risk-based, and cover the entire ecosystem (issuers, reserves, custodians, and service providers), with strong international cooperation ([IMF 2022](#)). In the ASEAN+3 context, this should be complemented by efforts to clarify the regulatory treatment of foreign-currency stablecoins, strengthen monetary policy frameworks, and ensure stablecoins remain anchored to safe reserve assets and existing payment systems. Together, a concerted regional strategy aligned with international standards—supported by supervisory colleges, clear licensing regimes, and consistent safeguards—would help ASEAN+3 capture efficiency gains while mitigating contagion, currency substitution, and regulatory arbitrage risks. Mutual recognition of regulatory approaches is necessary to address the emerging risks of stablecoins in the region.

Issues for consideration: (1) interoperability, (2) currency usage, and (3) a multi-layered coexistence framework

46. Regional payment integration in ASEAN+3 should be driven by an interoperability-first approach, reinforced by strong policy coordination rather than full regulatory harmonization. Given persistent heterogeneity in legal frameworks, institutions, and technological readiness, complete harmonization is neither feasible nor necessary. Instead, authorities should coordinate to align technical and operational approaches that allow domestic payment systems to interconnect while preserving national autonomy. Modular architectures—such as hub-and-spoke or multi-hub models—enable scalable participation across economies at different stages of readiness, while coordinated oversight supports consistency and resilience.

47. Interoperability should be anchored in common minimum standards and a layered system design. Mutually recognized baselines for messaging and data standards (e.g. ISO 20022-based formats), AML/CFT and KYC requirements, and core consumer-protection principles can materially reduce cross-border frictions without imposing identical regulations. Regional connectivity should clearly separate payment, clearing, and settlement layers: retail payment interoperability can build on domestic fast-payment systems, while settlement arrangements can evolve gradually—from correspondent banking to local-currency settlement or new wholesale rails—reflecting differences in market depth and technological capacity. Ongoing policy coordination is essential to manage cross-border risks and ensure legal and operational clarity.

48. A shift toward common minimum standards will also enable countries to harness the advantages of common-platform payment infrastructures. Platforms such as Nexus (retail payment connectivity), Agora (tokenized settlement through private and central bank money), and mBridge (multi-CBDC platform) require a shared rulebook, shared technical standards, and a common governance layer to establish the link with an incoming domestic payment infrastructure. Operationalizing or expanding these infrastructures will require coordinated policy action and a gradual shift towards aligning with global standards and regulations. Establishing the common minimum standards for cross-border transactions will also help authorities meet the requirements for joining these platforms while preserving autonomy over domestic infrastructure. Some of the common standards and frameworks for these platforms include:

- **Nexus:** Jurisdictions must align on minimum compliance standards (KYC/AML, sanctions screening, data protection), liability allocation and consumer safeguards, and ensure domestic legal frameworks support fast, irrevocable payments and effective supervisory cooperation ([BIS 2023](#)).
- **mBridge:** Policy coordination is needed on access criteria, governance of the shared ledger, settlement finality across legal systems, and central bank liquidity provision—particularly for payment-versus-payment (PvP) FX settlement ([BIS 2022a](#)).
- **Agorá:** The project, which is still in prototype form, may have integration requirements related to design, legal, regulatory and operational issues that the prototype is exploring ([BIS IH 2025](#)). Looking at examples of other preceding cross-border payment studies and projects conducted by BIS IH, the participants may also need to set up related infrastructure, such as liquidity pools of their tokenized assets to support automated market making, to facilitate wholesale foreign exchange transactions ([BIS 2022b](#), [BIS 2025a](#)).

49. Currency usage should be differentiated by transaction context and supported by coordinated policy objectives. Domestic payments should remain primarily in local currencies, while within the region, deeper payment connectivity combined with local-currency settlement frameworks can support greater use of regional currencies. LCSFs are also important to advance wholesale connectivity within the region, and overcoming the limited depth and liquidity in many local currency FX markets will be necessary to support the LCSF. For extra-regional trade and financial flows, the continued use of key international currencies such as US dollars and euros is likely to persist, reflecting market depth and hedging availability. Recognising this differentiation helps align payment integration while preserving necessary access to vehicle currencies.

50. Finally, ASEAN+3 should enable a framework in which different tools such as FPS linkages, the LCSF/LCTF, stablecoins, and CBDCs coexist and are either interoperable by design or able to achieve interoperability with competing or comparable payment instruments as the environment evolves. For example, FPS connectivity should anchor retail cross-border payments, the LCSF/LCTF should serve as a strategic settlement layer—particularly for wholesale transactions—and well-regulated, local-currency stablecoins may function as application-layer instruments to enhance efficiency and programmability. CBDCs, where pursued, should be targeted at specific gaps such as wholesale settlement efficiency or liquidity backstops. It is worthwhile to consider a platform where different instruments can co-exist with a high degree of interoperability. Moreover,

such a platform should ensure both regional integration and inter-regional connectivity. Coordinated governance across authorities is critical to ensure interoperability across layers while safeguarding monetary sovereignty, financial stability, and regional resilience.

Table 3. Matrix of Key Challenges and Way Forward

Key Priorities	Challenges	Way Forward	Issues for Consideration
1) Retail payment	<ul style="list-style-type: none"> Limited access Transfer limit Resource constraints 	<ul style="list-style-type: none"> Improve existing links Remove hurdles for new links Harness common multilateral platform 	<ul style="list-style-type: none"> Interoperability anchored in common minimum standards Currency usage differentiated by transaction context Promote a multi-layered coexistence framework
2) Wholesale payment	<ul style="list-style-type: none"> Stringent requirements Large value transactions Regulatory arbitrage FX liquidity 	<ul style="list-style-type: none"> Increase cross-border connectivity Develop supporting ecosystem including foreign exchange settlement mechanisms, regulatory alignments, liquidity management frameworks, and access to funding 	
3) Digital assets	<ul style="list-style-type: none"> Heterogeneous regulatory regimes Technical and governance disparities Machine learning, cyber and currency substitution risks 	<ul style="list-style-type: none"> Clarify regulatory and supervisory roadmap High level of coordination Align with international standards 	

Source: AMRO staff compilation.

51. To further advance regional integration, ASEAN+3 should continue and deepen its policy dialogue. Building on the analysis presented above, it would be appropriate for ASEAN+3 to focus its discussions on the following topics: retail payment connectivity, wholesale payment connectivity and stablecoin regulations, with explorations based on both connecting existing systems and establishing new infrastructure such as tokenization. These topics would warrant a multi-year approach in line with evolving discussions in various international fora. In this context, ASEAN+3 may also consider establishing Working Groups to provide a structured platform for sustained engagement. AMRO is well-prepared to serve as the secretariat and to provide necessary analytical inputs to the discussions.

Box 1. Private Sector Initiatives in Cross-border Payments

Private payment service providers (PSPs) are becoming an increasingly important front-end channel for cross-border retail payments in ASEAN+3, particularly for travel, remittances, and small-value merchant payments. For example, superapps and wallets such as Alipay, WeChat Pay, GrabPay, GCash, Touch 'n Go eWallet, PayPay, and KakaoPay are expanding cross-border acceptance, enabling users to make overseas payments conveniently.

Private payment connectivity in retail payments usually involves three key private actors—the PSP (wallet), the local acquirer/payment institution²⁹, and in many cases, the gateway. Most PSPs connect users across borders through a partnership-based acceptance model, often via the gateways. The PSP (or wallet) provides the user interface and authentication, while merchant acceptance and settlement are usually delivered by local acquirers/payment institutions that onboard merchants, provide QR/point-of-sale acceptance, and settle with merchants in local currency. In practice, a merchant often integrates once with a local acquirer, which then connects to multiple wallet networks through the gateway arrangement so that the merchant can accept multiple foreign wallets without bilateral integration with each PSP.

This model is increasingly being extended through wallet-to-wallet network partnerships, whereby a user of one wallet can pay at merchants enabled by another wallet's acceptance network via a common gateway. For example, Alipay+ has established partnerships with around 40 mobile payment providers and bank apps, including Touch 'n Go eWallet (Malaysia); GCash (the Philippines); KakaoPay/Toss Pay/Naver Pay (Korea); OCBC (Singapore) and TrueMoney (Thailand). These arrangements expand cross-border connectivity by allowing participating wallets to leverage a shared merchant acceptance layer without requiring bilateral integrations for each wallet-merchant pair.

Another important recent trend is that PSP networks increasingly plug into national payment infrastructure, especially national QR schemes, to scale acceptance quickly. Payments Network Malaysia (PayNet) and Ant International expanded cooperation so that Alipay+ users can pay locally via DuitNow QR, and Malaysians are also set to gain broader outbound acceptance via Alipay+'s merchant ecosystem. Likewise, some authorities explicitly position cross-border QR as part of their retail payments modernisation agenda. In particular, the Bank of Thailand has established cross-border QR payment connectivity with multiple private sector counterparties across the ASEAN+3 region, which helps support tourism industries in the region. For instance, the Thailand-China linkage enables inbound payments by Chinese visitors using major Chinese payment apps including AliPay and WeChat Pay. These developments also serve the policy objective of reducing fragmentation of the payment landscape and utilizing public infrastructure, such as QR codes, to a greater extent.

Cross-border connectivity through PSPs supports several common cross-border use cases. First, in-person travel payments where tourists use home wallets abroad for local purchases and merchants receive local settlement. Second, cross-border e-commerce where users use home wallets to pay overseas online merchants. Third, inbound acceptance via domestic QR networks where domestic QR rails are open to selected foreign wallets to support tourism and small-value trade. There are also early signs of extension beyond merchant payments toward remittance-type connectivity via partnerships between banks and wallet networks, as shown in the partnership between DBS and Ant International exploring near-instant remittances between DBS customers and all wallets connected to the Alipay+ gateway. Relatedly, some remittance corridors can deliver cross-border funds directly into domestic wallets that act as recipient-side payout channels. For example, in Myanmar, Wave Money supports receiving international remittances (e.g., via MoneyGram) into a mobile wallet with cash-out through its nationwide agent network, underscoring

²⁹ For example, in Singapore a merchant may onboard with NETS as the local acceptance/acquiring provider, which can connect to multiple overseas wallet networks (e.g., via Alipay+) while settling to merchants in SGD.

the need for cross-border payment connectivity to interface not only with banks but also with licensed nonbank PSPs and their distribution networks in receiving markets.

While PSP-led connectivity can materially improve user experience and expand merchant reach, it also raises policy issues that may become more salient as transaction volumes scale. First, pricing may lack transparency. FX mark-ups, fees, and dispute-resolution outcomes can be difficult for users and merchants to observe across multi-party payment chains. Second, AML/CFT accountability can become blurred when roles are distributed across wallets, gateways, acquirers, and cross-border partners, raising risks of inconsistent controls and supervisory blind spots. Third, operational resilience and concentration risks increase when a small number of gateways or platform providers become critical nodes, amplifying the impact of outages, cyber incidents, or third-party failures. Fourth, interoperability concerns arise where exclusive commercial arrangements or proprietary technical standards hinder switching and connectivity, potentially fragmenting markets.

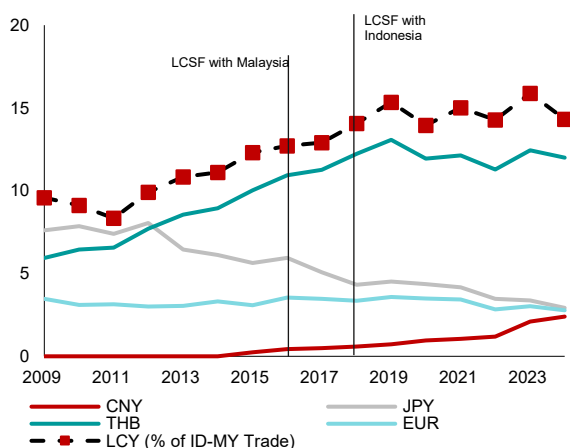
Taken together, these considerations underscore the need for continued regional coordination on common standards, clearer supervisory expectations for end-to-end risk management across PSP chains, and interoperability frameworks that promote contestability while safeguarding resilience and integrity.

Box 2. Local Currency Settlement/Transaction Framework: Rationalize the Use of Vehicle Currencies³⁰

Nearly a decade after its initial adoption, the LCSF, and its subsequent LCTF, contributed to an increase in the use of local currencies in cross-border transactions, although the US dollar remains the most dominant currency:

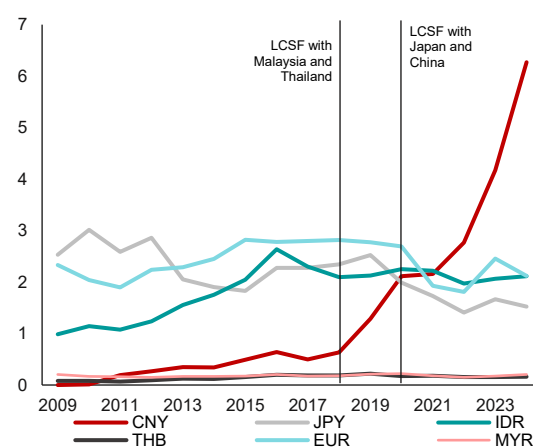
- In Thailand, the share of the baht (THB) in Thailand’s international trade rose from around 10 percent in 2016 to 13 percent in 2019, before moderating to approximately 12 percent in 2024 (Box Figure 1). The gains in intra-regional trade have been more pronounced, with local currencies accounting for around 14–16 percent of Thailand’s trade with Indonesia and Malaysia, compared with approximately 12 percent in 2016.
- Indonesia has also reported strong growth in the use of local currencies from USD 300 million per month in 2022 to over USD 2 billion per month during 2025 (BI 2025). However, the increase in transaction volume is driven by increased transactions denominated in the renminbi (CNY) (Box Figure 2 and Box Table 1).
- Malaysia also witnessed a similar pattern and use of the ringgit (MYR) in total trade increased from around 1 percent to 3.6 percent in 2023 (Box Table 1). The settlement in THB-MYR rose from 6.4 percent in 2009 to 18.6 percent in 2023 for trade between Thailand and Malaysia, and IDR-MYR settlement from 4.5 percent to 7.6 percent for trade between Indonesia and Malaysia over the same period (BNM 2024).
- Despite the rise in non-US dollar currencies, more than 75 percent of trade is still denominated in US dollars in Indonesia, Korea, Malaysia, and Thailand. There is a rise in the share of CNY across the board while the share of yen (JPY) has reduced.

Box Figure 1. Thailand: Selected Currency used in Total Trade
(Percent of total trade)



Source: BOT and AMRO staff calculations.
Note: Local currency (LCY) refers to the use of THB and MYR in Thailand trade with Indonesia and Malaysia. Data for IDR is not available.

Box Figure 2. Indonesia: Selected Currency used in Total Trade
(Percent of total trade)



Source: BI and AMRO staff calculations.

³⁰ Up to now, the following economy pairs/groups have signed MoUs for local currency settlement framework: Malaysia and Thailand; Indonesia and Thailand; Indonesia and Malaysia; Indonesia and Japan; Indonesia and China; Indonesia and Singapore; Indonesia and Korea; Indonesia, Malaysia, and Thailand.

Box Table 1. Selected ASEAN+3: Currency Used in Merchandise Trade
(Percent of total trade)

	2009					2016					2024				
	ID	MY	TH	JP	KR	ID	MY*	TH	JP	KR	ID	MY*	TH	JP	KR
USD	89.6	82.9	80	59.9	82.9	91.2	-	77.1	58.6	81.8	87.9	82.1	78.1	59.8	82.5
EUR	2.3	5	3.5	5.2	6.5	2.8	-	3.5	5	6	2.1	4.3	2.8	4.8	5.9
CNY	0	0	-	-	0	0.6	-	0.5	1	1.4	6.3	2.9	2.4	1.9	2.2
JPY	2.5	3.4	7.6	32	7.1	2.3	-	6	32	4.6	1.5	1.9	2.9	29.7	2.8
LCY	1	1.3	5.9		1.5	2.6	-	10.9		4.3	2.1	3.6	12		4.4

Source: BI, BOT, BNM, BOJ, National authorities via Haver Analytics, and AMRO staff calculations.

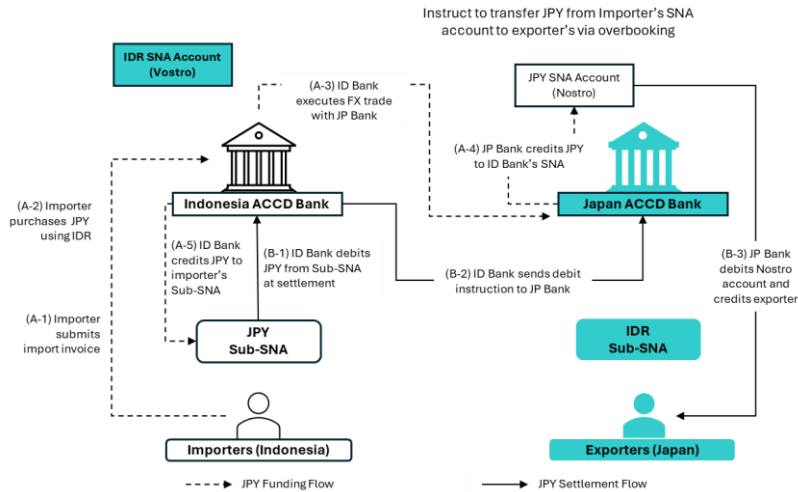
Note: Columns indicate the reporting economy. Currency shares are reported as a percentage of each economy's total merchandise trade. Local currency (LCY) refers to the respective local currency of the reporting economies—IDR for Indonesia, MYR for Malaysia, THB for Thailand, JPY for Japan, and KRW for Korea. ID = Indonesia, MY = Malaysia, TH = Thailand, JP = Japan, KR = Korea. Due to data availability, latest Malaysia data is 2023 and 2016 data is not available.

However, structural and operational challenges continue to limit local currency settlement in the ASEAN+3 region. These constraints can be grouped into three interrelated layers: structural factors that shape firms' underlying currency preferences, market frictions that affect pricing, liquidity, and risk management, and operational constraints that add to both participation and operation costs:

- **Structurally, the US dollar remains the dominant trade invoicing currency as firms prefer to align payment flows with US dollar-denominated liabilities.** For example, multinational corporates embedded in global supply chains rely heavily on US dollars to support centralized treasury management and cross-border fund mobility, reinforcing a structural preference for US dollar settlement.
- **From a market perspective, limited depth and liquidity in several local currency FX markets remain an important market challenge.** This market structure contributes to weaker price discovery, persistently wide bid–ask spreads as compared with those for USD-based transactions, and lack of FX products such as derivatives to manage exchange rate risks. The limited depth and liquidity in the cross-currency markets discourages firms from moving away from the US dollar.
- **ACCD banks also face challenges in incorporating local currency specific responsibilities and risk management.** Market participants note that frictions largely reflect the bilateral and fragmented nature of current arrangements, as well as differences in regulatory and reporting requirements across jurisdictions ([AMRO 2023b](#)). Key challenges include adjusting client practices to use local currencies, managing FX risks in the absence of hedging instruments, and limited transaction volumes that weaken commercial incentives. Operationally, LCSF/LCTF corridors still resemble traditional correspondent banking, with participating banks maintaining reciprocal nostro/vostro and sub-accounts. This structure (as illustrated in the LCSF between Indonesia and Japan in Box Figure 3) requires balance-sheet intermediation and adds operational burdens, including liquidity pre-positioning, compliance, and reporting requirements.
- **Asymmetry in settlement flows across bilateral corridors poses an additional operational challenge.** Unbalanced trade and investment flows can create persistent one-way net positions in certain currency pairs, leading to excess accumulation of some currencies with limited offsetting demand. This complicates liquidity management for ACCDs, raises the cost of holding currency risk, and may require periodic

rebalancing. Over time, such asymmetries can weaken market-making incentives and reduce the availability of competitive quotes in local currency pairs. Trade balances across ASEAN LCSF/LCTF economies are broadly even overall, but some bilateral corridors have faced persistent deficits, underscoring the impact of flow imbalances on liquidity management. (Box Figure 4).

Box Figure 3. Stylized Flow of Credit in a LCSF



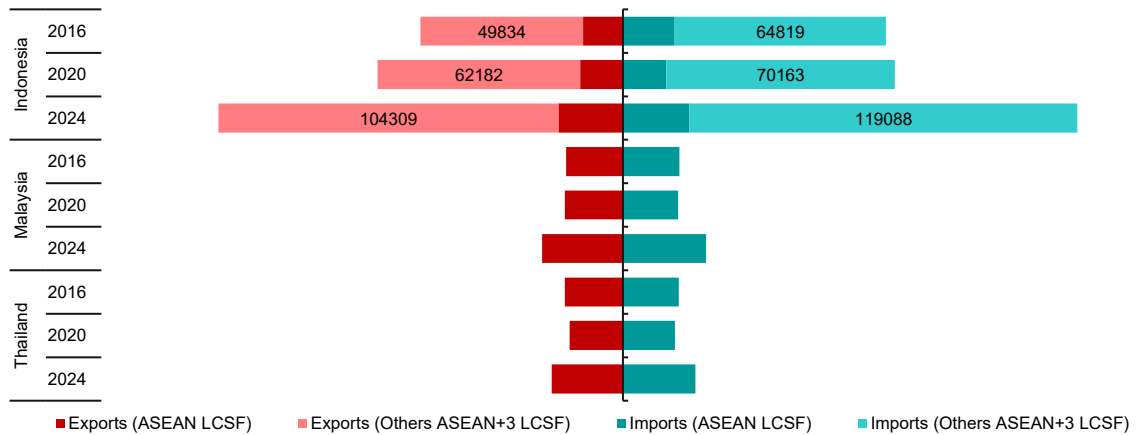
Source: BI (2020). Illustration adapted by AMRO staff.

Note: The figure illustrates an LCSF workflow between an Indonesian importer and a Japanese exporter, with JPY as the invoice currency. Indonesian importers access JPY through appointed ACCD banks.

The JPY Funding Flow (dashed lines) shows how the Indonesian ACCD bank pre-funds JPY via an FX transaction with the Japanese ACCD bank, with funds credited to the importer's JPY Sub-Special Purpose Non-Resident Account (Sub-SNA). The JPY Settlement Flow (solid lines) depicts the final payment, whereby JPY is debited from the Sub-SNA and settled to Japanese exporters through the Japanese ACCD bank's Nostro account on the settlement date.

A similar workflow applies to IDR-denominated payments, where IDR is transferred from the Indonesian ACCD bank to the Japanese ACCD bank's Vostro account. Exporters may subsequently utilize the IDR by instructing the Japanese ACCD bank.

Box Figure 4. Indonesia, Malaysia, and Thailand: Balance of Trade with Partner LCSF/LCTF Economies
(Millions of USD)



Source: National authorities via Haver Analytics, and AMRO staff calculations.

Note: The figure illustrates exports and imports between ASEAN economies and their respective LCSF/LCTF partners. Data for Thailand and Malaysia cover trade with each other and with Indonesia only, while data for Indonesia include trade with Thailand, Malaysia, Japan, Korea, and China. Bilateral export and import values are reported by national authorities and may differ owing to variations in statistical compilation and reporting practices.

Box 3. Stablecoin Regulatory Laws in Europe and the US: MiCA and GENIUS Act

In the European Union (EU), the **Markets in Crypto-Assets Regulation (MiCA)** is a comprehensive regulation that establishes a single, harmonized legal framework for crypto-assets and related service providers across the region, aiming to enhance consumer protection, ensure market integrity, and safeguard financial stability while supporting innovation.³¹ A core focus of MiCA is the regulation of stablecoins, which are classified into e-money tokens—pegged to a single fiat currency—and asset-referenced tokens—linked to a basket of assets. Issuers must be authorized in the EU, publish detailed white papers, undergo monthly audits, hold at least 60 percent of reserves in EU banks, and meet strict governance, risk-management, and disclosure standards. MiCA requires stablecoins to be fully backed by high-quality, liquid and segregated reserves. It also subjects systemic stablecoins to enhanced supervision by the European Banking Authority, including additional prudential requirements to mitigate risks to monetary policy and financial stability ([ESMA 2026](#)).³²

The **Guiding and Establishing National Innovation for US Stablecoins (GENIUS) Act** was passed by the US Congress in July 2025, comprising a regulatory framework for payment stablecoins—digital tokens that are redeemable at a fixed value.³³ Amid rising adoption of stablecoins and other crypto-assets, the administration aimed to strengthen legislation on consumer protection and illicit activity through this Act ([The White House 2025a](#)). The framework stated that only authorized issuers may issue such stablecoins for use in the US, with issuers required to be supervised at either the federal or state level.³⁴ They can be nonbank entities or subsidiaries of insured depository institutions. Similar to MiCA, stablecoins must be fully backed by high-quality liquid assets, with clear redemption rules and regular public disclosure of reserves. Foreign issued stablecoins may be offered in the US if they are subject to comparable regulatory oversight. While payment stablecoins are excluded from securities laws, issuers remain subject to AML/CFT requirements that apply to financial institutions ([US Congress 2025](#)).

Since 2025, the US administration has stepped up engagement with regulators, law enforcement agencies, academics, and industry participants on a potential revival of the Digital Asset Market CLARITY Act—a proposed crypto market-structure bill intended to complement the GENIUS Act by clarifying the regulatory treatment of digital assets. One key issue under discussion is the provision of yield on stablecoins by third-party platforms such as crypto exchanges. Banks have argued that allowing such practices could encourage deposit outflows and undermine financial stability. While the GENIUS Act prohibits stablecoin issuers from paying interest, it does not preclude exchanges or other intermediaries from offering yields, leaving a regulatory gap that the CLARITY Act is intended to address.

Compared with the EU's MiCA, the GENIUS Act focuses primarily on payment stablecoins, leaving broader crypto market structure issues to other proposals (such as the CLARITY Act). MiCA places strong emphasis on prudential safeguards and systemic risk, while the GENIUS Act centres on issuer eligibility and supervision, limiting issuance largely to banks and regulated nonbank entities, prohibiting issuers from paying interest, and embedding stablecoins firmly within existing banking and AML frameworks.

The rapid development of regulatory frameworks in the West may prompt ASEAN+3 regulators to strengthen their own regulatory regimes and accelerate financial integration efforts. However, the fragmented regulatory landscape across these regions poses some challenges for policymakers:

- Given stablecoin's cost and efficiency advantages, together with the high share of those already pegged to the US dollar, the GENIUS Act could lead to rapid adoption of US dollar-denominated tokens and increase the risk of currency substitution, particularly in jurisdictions where confidence in the local currency is weaker. On this front, the MiCA framework already

³¹ The MiCA framework reached full implementation on December 30, 2024.

³² Nine of Europe's biggest banks including ING, UniCredit, KBC, Danske Bank, DekaBank, SEB, CaixaBank, Banca Sella, and Raiffeisen Bank International planned to launch a new stablecoin backed by the euro in the second half of 2026. The joint announcement stated that the initiative will provide a European alternative to the US-dominated market and strengthen Europe's autonomy in payments ([UniCredit 2025](#)).

³³ Implementing regulations will be issued by July 18, 2026, with the GENIUS Act taking effect on January 18, 2027.

³⁴ The GENIUS Act defines "payment stablecoins" as digital assets designed for payment/settlement, not as securities or commodities, and authorized issuers are not classified as investment companies.

imposes stricter constraints on the scale and usage of foreign-currency-denominated tokens within European markets ([O'Neill 2025](#)).

- The GENIUS requirement for stablecoin issuers to hold reserves in liquid assets like US dollars or short-term Treasuries would raise demand for the dollar and further entrench its dominance in the global financial system. This may weaken regional efforts to promote local-currency settlement and reduce reliance on foreign currencies. Initiatives to develop local-currency-denominated stablecoins could also face headwinds if US dollar-pegged stablecoins prove more attractive to users.
- The holistic and stringent nature of Europe's MiCA framework could incentivize some issuers to relocate to more lightly regulated jurisdictions, exploiting regulatory arbitrage. This may expose host economies to financial stability risks if such issuers operate with weak reserve backing, inadequate governance, or limited transparency, while still achieving widespread use by residents for payments, savings, or cross-border transactions.

Box 4. Global Stablecoin Policy Recommendations and Discussions³⁵

Global stablecoin regulations have evolved over the past decade with various organizations and bodies working on different focus areas. These organizations have provided frameworks and guidelines to manage all major aspects of financial stability risks emerging from cryptoassets. Some of these directly address the risks from stablecoins while some include stablecoins as a part of the overall discussion and regulations around cryptoassets. The key standard setters include the following:

- **G20 and Financial Stability Board (FSB)** focusing on financial stability and regulatory baseline.
- **Basel Committee on Banking Supervision (BCBS)** aiming for prudential treatment of bank exposures to cryptoassets, including stablecoins, to contain spillover risks from cryptoassets to the financial system.
- **International Organization of Securities Commissions (IOSCO)** provides recommendations for market conduct, investor protection and market risk management.
- **Committee on Payments and Market Infrastructures (CPMI)** focusing on stablecoins as a payment mechanism and, in conjunction with IOSCO, studying the application of Principles for Financial Market Infrastructures (PFMI) to systemically important stablecoins.
- **Financial Action Task Force (FATF)** has focused on compliance protocols such as AML/CFT and application of FATF standards on stablecoins.

Apart from publishing the recommendations, some of the organizations have conducted implementation reviews. These reviews show a consistent pattern of uneven implementation across jurisdictions leaving room for regulatory arbitrage and emphasize the need for cross-border supervisory cooperation.

The G20/FSB issued the 10-point high level recommendations and recently conducted a review of implementation of those recommendations. The 10-point high level recommendations were first issued in October 2020 and cover the following aspects (1) supervisory powers/resources, (2) functional risk-proportionate regulation, (3) cross-border and cross-sector cooperation, (4) governance and accountability, (5) comprehensive risk management, (6) robust data safeguards, (7) recovery and resolution planning, (8) transparency and disclosures including the stabilization mechanism, (9) robust redemption and stabilization mechanisms, and (10) pre-launch compliance and ongoing regulatory adaptability. These recommendations were updated in July 2023. The FSB published a thematic review concluding that implementation of its 2023 global stablecoin recommendations remains uneven, with material gaps and inconsistencies in implementation across jurisdictions. The review highlighted the cross-border supervisory cooperation for stablecoins is insufficiently developed amid divergent approaches and identifies multi-jurisdictional stablecoin arrangements as a specific pain point.

The BCBS has published standards on prudential treatment of cryptoasset exposures and identified three pillars for regulating bank crypto-asset exposures. The BCBS published the first set of consultations on prudential treatment of bank's cryptoasset exposures in June 2021 and the standards were finalized in December 2022. The standards defined two pillars of the BCBS framework. The first pillar defines the classification and capital treatment of cryptoasset exposure by banks and provides details about capital requirements, eligibility conditions for stablecoins, risk weights, and exposure limits. The second deals with supervisory review and risk management, and sets supervisory expectations for governance, risk management, and internal controls over banks' cryptoasset activities. The BCBS later issued targeted amendments (consulted in Dec 2023 and finalized in July 2024) that tighten the conditions under which stablecoins may receive preferential prudential treatment, alongside a final Pillar 3 disclosure framework for cryptoasset exposures. The disclosure framework establishes standardised public disclosures on banks' cryptoasset exposures to enhance transparency and market discipline.

IOSCO devised policy recommendations for crypto and digital asset markets which include issues such as market conduct and investor baseline and conducted a thematic review to assess the

³⁵ The authors would like to thank Wookeun (Ken) Yoon of AMRO for his valuable input to this box.

uptake of recommendations. IOSCO published 18 recommendations in November 2023 which broadly cover areas of managing conflicts of interest for market participants (such as crypto-asset service providers: CASPs), prevent and detect market abuse, primary market controls strengthen cross-border regulatory cooperation, protect client assets through custody standards, and control operational risks (including technology and distribution). The regulations are built on the principle of “same activity, same risk, same regulatory outcome”. The review, published in October 2025, highlighted that while there was significant progress in regulating CASPs, the implementation of recommendations was uneven and recommended strengthening enforcement of regimes and cross-border cooperation to reduce supervisory blindspots.

The CPMI (with IOSCO) has studied stablecoins both as a payment tool as well as applied PFMI to systemically important stablecoins. The CPMI, along with IOSCO, published a guidance note on the application of the PFMI to stablecoin arrangements. The note recommends “same risk, same regulation” baseline for systemically important stablecoins – which are performing functions similar to other similar Financial Market Infrastructures (FMIs). It also provides clarifications on governance, comprehensive risk management, settlement finality, and money settlement. The CPMI published its report on the use of stablecoin arrangements in cross-border payments in October 2023, which discussed various design and regulatory considerations and also discusses coexistence with other payment rails.

The FATF published its guidance on a risk-based approach to CASPs/VASPs and has continued to refine the guidance with the evolving landscape. The FATF published the guidance in October 2021 and it included explicit sections on how FATF standards apply to stablecoins. One of the important recommendations of this report is the “travel rule” which requires the CASPs and virtual asset service providers (VASPs) to include originator and beneficiary information to avoid anonymity and preserve traceability of cross-border transfers to effectively detect money laundering and terrorist financing risks. The FATF later refined the guidance further to include stablecoin risks and implementation observations in June 2023 and an update for stablecoin-related service providers and decentralized-finance intersections in June 2024. The FATF also publishes jurisdictional snapshots and uses peer pressure to push adoption.

Box 5. CBDC Developments in the Euro Area

Since 2020, the euro area authorities have been conducting various studies and tests around retail and wholesale CBDCs. The retail CBDC project (digital euro) and wholesale CBDC projects (Appia and Pontes) are on track to be implemented over the three to five years and could significantly transform the euro area's payment landscape.

Retail CBDC – The digital euro

The digital euro is an initiative by the European Central Bank (ECB) to complement cash and existing private digital payments with a form of digital currency in the euro area. The digital euro is expected to be free for basic use and available both online and offline, with a high level of privacy, allowing instant payment settlement, and accessible through multiple channels.

The project was formally launched in 2021 and has progressed through successive phases:

- The digital euro project was initiated following the [ECB's Report on a digital euro in October 2020](#), which assessed the rationale for a retail central bank digital currency and its implications for monetary policy, financial stability, and the European payments landscape.
- In October 2021, the ECB launched Phase 1—Investigation Phase, which ran until October 2023 and focused on feasibility, use cases, design options, and distribution models, as well as the development of a high-level product design.
- Based on the findings of Phase 1, Phase 2—Preparation Phase—began in November 2023, concentrating on practical implementation, including drafting a rulebook, selecting technical providers, conducting experimentation and user research, and deepening analysis of key design features.
- In October 2025, the ECB's Governing Council decided to continue preparations for a digital euro, prioritizing technical readiness, enhanced engagement with market participants, and ongoing support for the EU legislative process, while reiterating that any issuance decision remains contingent on legislative approval. The Eurosystem aims to secure the regulation for the digital euro by end-2026, launch a pilot exercise in mid-2027, and be ready for a potential digital euro issuance in 2029.

The development of a digital euro reflects structural changes in the payments landscape driven by accelerated financial digitalization. While cash remains widely used, digital payments have expanded rapidly and are largely dominated by private—and often non-European—providers ([ECB 2024](#)). In this context, the ECB has highlighted risks associated with reliance on external suppliers for critical payment services, including exposure to geopolitical tensions, cyberattacks, and operational disruptions ([ECB 2023](#)). The digital euro is viewed as a means to preserve access to public money in digital form, safeguard monetary sovereignty, and enhance the resilience of the payment system. The digital euro will not compete with private solutions but will create synergies to reduce payment fragmentation in the EU, as it will be the common infrastructure for the private sector to innovate while adhering to uniform standards. Consistent with these objectives, the ECB has noted that all providers selected for the current components of the digital euro are EU-controlled entities ([ECB 2025](#)).

More broadly, a digital euro is intended to ensure that central bank money continues to serve as a reliable monetary anchor, while reducing dependence on a small number of global payment platforms and strengthening competition and resilience in retail payments. It is also expected to improve the integration and efficiency of euro-area payments, support financial inclusion through universal access—including potential offline functionality—and provide a contingency payment option in the event of disruptions to private systems. By operating as a pan-European payment solution under European governance and supported by its own infrastructure, the digital euro would strengthen the strategic autonomy of Europe's payment ecosystem while enabling European payment service providers to deliver efficient and innovative services with euro-area-wide reach.

Wholesale CBDC – Pontes and Appia projects

The wholesale CBDC is an outcome of Eurosystem’s goal to build a common understanding and gain experience with new technologies for processing cash-side wholesale transactions with central bank money. The motivation for a wholesale CBDC system shares some similarities with that of the retail project: citing the risks posed by foreign stablecoins affecting the fulfilment of the Eurosystem’s mandate by potentially weakening monetary policy transmission, fragmentation of liquidity, contagion risks, and increased dependence on non-domestic payment infrastructures ([ECB 2020a](#)). The Eurosystem conducted trials and experiments with market participants to test use cases aimed at improving current use cases (secure and efficient cash leg for the settlement of tokenized securities, improve the interconnectedness of financial market infrastructure) and exploring future use cases (foundation for new infrastructures to use cases beyond wholesale).

In February 2025, the ECB Governing Council adopted a two-track approach for wholesale CBDC. The first track, Pontes, will be a “bridge” solution linking DLT platforms with the existing Trans-European Automated Real-time Gross Settlement Express Transfer (TARGET) systems to settle DLT-based transactions in existing central bank money systems via an interoperable connection. The project is expected to enter a pilot phase by the fourth quarter of 2026. The second track, Appia, is a long-term solution which will aim to explore a future-ready, native, and integrated DLT-based ecosystem for wholesale payments and settlements, while including international financial market transactions.

The challenges facing Europe—and its response through the retail and wholesale CBDC—share common rhythms with those emerging in the ASEAN+3 region. As discussed in [AMRO \(2023a\)](#), ASEAN+3 economies may face similar pressures from financial digitalisation, including challenges related to monetary sovereignty, the need to enhance payment system resilience, and ensuring a level playing field in access to digital money. The EU’s emphasis on resilience and strategic autonomy in response to geopolitical and cyber risks further reinforces the case for regionally anchored payment infrastructures in ASEAN+3, where comparable vulnerabilities and structural heterogeneity persist. The focus on the risks from foreign stablecoins, preparing CBDC to interoperate with the existing systems, and efforts to be future-ready also resonate with the policy priorities for the ASEAN+3 region. While ASEAN+3 economies are at differing stages of payment system development, the EU’s phased approach to regional infrastructure-building and regulatory coordination provides a useful reference for promoting interoperability, policy alignment, and gradual implementation in a multi-jurisdictional setting.

Annex 1. Progress of CBDC Development in ASEAN+3

Economy	rCBDC	wCBDC	Cross-border Initiatives
China	<ul style="list-style-type: none"> PBOC started researching and testing digital renminbi in 2014. PBOC proposed a conceptual framework in 2016. In 2019, PBOC launched an e-CNY pilot in major cities in China. In early 2023, e-CNY was incorporated into Alipay and WeChat Pay to encourage adoption. As of the end of November 2025, the e-CNY had processed a cumulative 3.48 billion transactions with a total value of RMB 16.7 trillion. 230 million personal wallets had been opened via the e-CNY app. In December 2025, PBOC announced a new system for the measurement, operation and management of e-CNY, which would upgrade e-CNY from digital cash to digital deposit money bearing interest and protected by deposit insurance. 		<ul style="list-style-type: none"> PBOC is the official member of Project mBridge. PBOC and HKMA have been conducting the e-CNY pilot for cross-boundary payments. In May 2024, the two sides decided to expand the pilot by allowing Hong Kong residents to set up e-CNY wallets locally and top up through the Faster Payment System (FPS). In September 2025, PBOC launched the e-CNY International Operation Center in Shanghai. In December 2025, the e-CNY pilot was launched for Singapore travelers which would enable them to open and top-up e-CNY wallets locally for merchant payments in China.
Hong Kong	<ul style="list-style-type: none"> The HKMA has pursued Project e-HKD since June 2021 to study the prospect of extending the use of the e-HKD to retail scenarios. In September 2024, the project was renamed as Project e-HKD+, as the project expands its coverage from an e-HKD only to a more comprehensive exploration of the digital money ecosystem. HKMA completed the e-HKD Pilot Programme in October 2025 and decided to prioritize the development of the e-HKD for financial institutions in wholesale scenarios. 	<ul style="list-style-type: none"> HKMA began with Project LionRock (2017) as a proof-of-concept for DLT-enabled large-value payments and delivery-versus-payment (DvP) settlement among financial institutions. In March 2024, HKMA launched Project Ensemble to explore innovative financial market infrastructure (FMI) to facilitate seamless interbank settlement of tokenized money through wCBDC. In August 2024, HKMA launched Project Ensemble Sandbox to allow industry pioneers to test comprehensive end-to-end use cases for settling digital asset transactions using experimental tokenized deposits. In November 2025, HKMA announced the launch of Ensemble^{TX}, marking the commencement of the pilot phase of Project Ensemble. 	<ul style="list-style-type: none"> HKMA and the Bank of Thailand (BOT) launched Project Inthanon-LionRock in 2019 to explore cross-border transfers and PvP FX settlement, which then expanded to mBridge in February 2021. mBridge has reached the minimum viable product (MVP) stage in June 2024.
Japan	<ul style="list-style-type: none"> BOJ conducted proof-of-concept (PoC) experiments from April 2021 to March 2023 to test the technical feasibility of core CBDC functions. Since April 2023, BOJ has proceeded with a pilot program, including engagement with private-sector firms (e.g., via API sandbox), to deepen practical testing beyond the earlier PoCs. BOJ has no plans to issue CBDC now. 	<ul style="list-style-type: none"> From 2016 to 2020, BOJ, jointly with ECB, conducted Project Stella to study the use of DLT for large-value payments, securities settlement and safer cross-border arrangements, and the balance between confidentiality and auditability in distributed ledger environment. 	<ul style="list-style-type: none"> BOJ is a member of BIS-led Project Agorá.
Korea	<ul style="list-style-type: none"> BOK undertook a series of PoC experiments from August 2021 to June 2022 with the primary goal of 	<ul style="list-style-type: none"> BOK, in collaboration with BIS, developed a design framework for a Digital Currency Network to 	<ul style="list-style-type: none"> BOK is a member of BIS-led Project Agorá. BOK is an observing member of Project mBridge.

	<p>testing the technical feasibility of a CBDC on a DLT-based platform.</p> <ul style="list-style-type: none"> • BOK carried out an extended project to test functionalities and performance via connection with 14 commercial banks from July to December 2022. • BOK indicates currently there is no immediate need for Korea to embark on preparations for the introduction of a retail CBDC. 	<p>explore the feasibility of a digital currency and monetary ecosystem for the future using DLT.</p> <ul style="list-style-type: none"> • In October 2023, BOK, together with the Financial Services Commission (FSC) and the Financial Supervisory Service (FSS), announced a plan for Project Hangang - a DLT-based digital currency network integrating wCBDC and tokenized deposits. • From April to June 2025, BOK conducted its first live transaction pilot for Project Hangang to examine the overall functions of the digital currency and tokenized deposits. 	
	<p>In November 2022, Bank Indonesia (BI) issued a White Paper under Project Garuda, setting out the development of the Digital Rupiah in both wholesale and retail forms. The White Paper outlines a staged roadmap (from the immediate state to intermediate state to end-state) and indicates that initial development will begin with the wholesale Digital Rupiah (w-Digital Rupiah).</p>		
Indonesia		<ul style="list-style-type: none"> • In 2023, BI issued the Stage I Consultative Paper - "Project Garuda: Wholesale Rupiah Digital Cash Ledger" and the subsequent Public Consultation Report, outlining key elements of the Digital Rupiah configuration, such as permissioned DLT, the two-tier distribution model, and the 3i aspects (interconnection, interoperability, and integration). • In December 2024, BI issued the PoC report for w-Rupiah Digital cash ledger, the Immediate State in the Rupiah Digital exploration, which will be continued with sandbox and other initiatives including industry involvement. 	<ul style="list-style-type: none"> • BI is an observing member of Project mBridge.
Malaysia	<ul style="list-style-type: none"> • BNM has no immediate plans to issue retail CBDC given the highly efficient domestic retail payment systems operating today. 	<ul style="list-style-type: none"> • BNM has established a cross-functional Digital Currency Research Hub (DCRH) to explore how emerging technologies can futureproof domestic payment infrastructures. • BNM is pursuing exploratory work on the potential of w-CBDC to futureproof RENTAS – Malaysia's large value payment system. The PoC for domestic w-CBDC is expected to have completed by end-2025. 	<ul style="list-style-type: none"> • BNM participated in Project Dunbar from 2021 to 2022. • BNM is an observing member of Project mBridge.
Philippines	<ul style="list-style-type: none"> • BSP conducted an exploratory study in 2020 and a use-case review in 2021 to evaluate the issues surrounding CBDC issuance, and determined that there is minimal value added of the use of rCBDC in the Philippines in the short term given the progress in widespread implementation of retail payment digitalization and financial inclusion reforms. 	<ul style="list-style-type: none"> • BSP identified the value of a wholesale CBDC in addressing pain points in the national payment system. • BSP launched Project CBDCPh - a pilot wCBDC in April 2022 to test the use of CBDCs for large-value financial transactions on a 24/7 basis across a limited number of financial institutions. This agenda then evolved to Project Agila. • BSP had completed PoC testing for Project Agila by December 2024. 	<ul style="list-style-type: none"> • BSP is an observing member of Project mBridge.

Singapore	<ul style="list-style-type: none"> MAS embarked on Project Orchid to build the technical competencies necessary to issue a digital Singapore dollar, though it does not see a compelling case to issue a retail CBDC for general public use at this stage, given Singapore's efficient digital payments landscape. 	<ul style="list-style-type: none"> MAS conducted Project Ubin from 2016 to 2020 to explore the use of blockchain and DLT for clearing and settlement of payments and securities. In November 2025, MAS completed a live trial for settlement of interbank overnight lending transactions using wCBDC on the Singapore Dollar Test Network. 	<ul style="list-style-type: none"> In the Multi-currency Corridor Network (2021), MAS and Banque de France simulated cross-border and cross-currency transactions for SGD CBDC and EUR CBDC on a common CBDC network. MAS launched Ubin+ in December 2022 to advance cross-border connectivity with wholesale digital currencies, including Project Cedar Phase II x Ubin+ to establish connectivity across heterogeneous simulated currency ledgers; Project Mariana to explore the use of Automated Market Maker to automate foreign exchange and settlement of different wCBDCs, etc. MAS is a member of Project Dunbar.
Thailand	<ul style="list-style-type: none"> In 2021, BOT published the "The Way Forward for Retail Central Bank Digital Currency in Thailand" paper to shape the design of the rCBDC infrastructure and requested public consultation on the topic. BOT launched rCBDC pilot through two tracks: <ul style="list-style-type: none"> - Foundation track to test CBDC's core functionalities: From 2022 to Q3 2023, BOT successfully conducted Project Bang Khun Phrom, a pilot to test the effectiveness of CBDC for basic payment of goods and services. - Innovation track to explore the feasibility of harnessing financial innovation using the rCBDC infrastructure: from August to September 2022, BOT launched "retail CBDC Hackathon" to solicit use cases from the private sector and the public. In March 2024, BOT published Retail CBDC Conclusion Report and indicated that BOT has no immediate plan to officially issue Retail CBDC. 	<ul style="list-style-type: none"> BOT conducted Project Inthanon from 2018 to 2020 to create a PoC wCBDC prototype using DLT in different use cases. <ul style="list-style-type: none"> - Phase 1 developed a PoC decentralized Real-Time Gross Settlement system (RTGS) that uses wCBDC on a distributed ledger. - Phase 2 further explored how DLT can be used to extend new functionalities, including automation of bond lifecycle events with smart contracts, fraud prevention and programmable compliance. - Phase 3 explored interoperability, particularly in the area of cross-border payments and settlements. 	<ul style="list-style-type: none"> As Phase 3 of Project Inthanon, BOT and HKMA launched Project Inthanon-LionRock in 2019 to explore cross-border transfers and PvP FX settlement, which then expanded to mBridge in February 2021.
Vietnam	<ul style="list-style-type: none"> The State Bank of Vietnam (SBV) is currently in the process of researching and developing a national digital currency model. In October 2025, SBV assigned telecom companies Viettel and MobiFone to conduct research on a CBDC. 		
Cambodia	<ul style="list-style-type: none"> The National Bank of Cambodia (NBC) launched the BAKONG payment system in 2020, which is not CBDC but incorporates many features similar to those of a CBDC. 	<ul style="list-style-type: none"> NBC is an observing member of Project mBridge. 	
Laos	<ul style="list-style-type: none"> The Bank of the Lao PDR (BOL), with support from Japanese fintech firm Soramitsu, began a feasibility study on a blockchain-based modern payment infrastructure in December 2021. In February 2023, BOL and Soramitsu signed MOU to launch a CBDC PoC trial. BOL has been reassessing the CBDC feasibility study, with a focus on its comprehensive implications. 		
Myanmar	<ul style="list-style-type: none"> On 24 June 2025, the Central Bank of Myanmar (CBM) announced the formation of the Central Committee for the Issuance of Central Bank Digital Currency, which will oversee the research, development, and potential implementation of a digital kyat. 		

Source: ASEAN+3 central banks' websites, as of March 2026.

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