

BEYOND SPEED AND COST

Strengthening India's
Cross-Border Payments
Ecosystem



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Research Report

Beyond Speed and Cost

Strengthening India's Cross-Border Payments Ecosystem



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Contents

List of Abbreviations	i
Executive Summary	ii
1. Cross-Border Payments in a Changing Global Landscape	1
1.1 Scale and Composition of Global Cross-Border Payments	2
A market of different markets	2
Networks, concentration and information	3
1.2 How Cross-Border Payments Work	3
The correspondent-banking foundation	3
Messaging is not settlement	4
Why the chain creates friction	4
1.3 The Changing Payments Market	5
More providers, different forms of intermediation	5
Interlinking instant-payment systems	5
Digital assets and tokenised settlement	6
1.4 Geopolitical and Macroeconomic Shifts	7
Payments reflect economic relationships	7
Currencies, sovereignty and interoperability	7
1.5 From Speed and Cost to Trust	8
The G20 baseline	8
Five dimensions of a trusted payment	8
Protective friction and avoidable friction	10
Implications for the rest of the paper	10
2. India's Cross-Border Payments Landscape	11
2.1 India's Position in Global Payment Flows	12
2.2 Institutional and Regulatory Architecture	12
The Payment and Settlement Systems Act	13
FEMA, the LRS and authorised dealer banks	13
The PA-CB framework	14
EDPMS and IDPMS	14
KYC, AML/CFT and sanctions controls	15
Payment-data localisation and privacy	15
Institutional role of NPCI and NIPL	16
2.3 Personal and Migrant Remittances	16
2.4 Retail Payments Abroad	18
UPI acceptance arrangements	20
2.5 MSME Trade Payments	21
2.6 India's Performance Baseline	22
3. Trust, Risk and the Role of Friction	24
3.1 Mapping Friction Across India's Cross-Border Payment Journey	25
3.2 Regulatory Divergence and AML/CFT Compliance	26
3.3 Sanctions, Fraud and Financial Integrity Risks	27
3.4 Data Privacy, Localisation and Cybersecurity	27
3.5 Necessary and Avoidable Friction	28
3.6 Implications for India: From Friction to Trusted Interoperability	29
4. DPI and UPI as Foundations for Cross-Border Interoperability	31
4.1 India's DPI Approach	32

From infrastructure to institutional design	32
Payment-relevant layers	32
4.2 What UPI Can Contribute to Cross-Border Payments	33
A common initiation layer	33
A bounded contribution	33
4.3 Models of International Payment Connectivity	33
FPS interlinking	33
Merchant and QR acceptance	33
Domestic infrastructure deployment	34
4.4 India's Bilateral Payment Partnerships	34
4.5 Conditions for Successful DPI Internationalisation	35
Local ownership and reciprocal governance	35
Technical and commercial readiness	36
4.6 Limits and Risks of the DPI Proposition	36
Scale does not travel automatically	36
Sovereignty and concentration	36
5. International Models and Emerging Payment Architectures	37
5.1 Bilateral Fast-Payment Linkages	38
5.2 Multilateral Interlinking and Project Nexus	39
5.3 Banks, Fintechs and Other Competing Rails	41
5.4 Central Bank Digital Currencies (CBDCs), Stablecoins and Tokenised Settlement	42
5.5 ISO 20022, APIs and Data Standardisation	44
6. A Roadmap for Trusted Cross-Border Payments	46
6.1 Domestic Regulatory and Operational Reforms	47
6.2 A Corridor-Based Strategy for India	48
6.3 Cross-Border DPI Partnerships and Economic Diplomacy	48
6.4 India's Role in Global Payments Governance	48
6.5 Implementation Framework and Performance Indicators	48

List of Abbreviations

Abbreviation	Full Form
AML	Anti-Money Laundering
API	Application Programming Interface
BIS	Bank for International Settlements
CBDC	Central Bank Digital Currency
CPMI	Committee on Payments and Market Infrastructures
DPI	Digital Public Infrastructure
DPDP Act	Digital Personal Data Protection Act, 2023
DPSS	Department of Payment and Settlement Systems
EDPMS	Export Data Processing and Monitoring System
FATF	Financial Action Task Force
FED	Foreign Exchange Department
FEMA	Foreign Exchange Management Act, 1999
FIRA	Foreign Inward Remittance Advice
FPS	Fast Payment System
FSB	Financial Stability Board
FX	Foreign Exchange
IDPMS	Import Data Processing and Monitoring System
KYC	Know Your Customer
LRS	Liberalised Remittance Scheme
MEA	Ministry of External Affairs
MSME	Micro, Small and Medium Enterprise
NIPL	NPCI International Payments Limited
NPCI	National Payments Corporation of India
PA-CB	Payment Aggregator – Cross Border
P2M	Person-to-Merchant
P2P	Person-to-Person
PSS Act	Payment and Settlement Systems Act, 2007
RBI	Reserve Bank of India
RTGS	Real-Time Gross Settlement
SWIFT	Society for Worldwide Interbank Financial Telecommunication
UPI	Unified Payments Interface

Executive Summary

Cross-border payments connect trade, investment, tourism and migration, but they do not constitute a single homogeneous market. A recent International Monetary Fund (IMF) estimate placed the value of traditional and crypto cross-border payments at nearly US\$1 quadrillion in 2024. Most of that value reflected financial-institution and very large wholesale transactions. By contrast, remittances, consumer purchases and low-value business payments account for a much smaller share of value but touch far more individuals and firms. The distinction matters because the problems faced by a bank managing foreign-currency liquidity are different from those faced by a migrant worker, traveller or small exporter.

The prevailing architecture remains anchored in correspondent banking. Payment instructions, compliance checks, foreign-exchange conversion and settlement may pass through several institutions and domestic systems. The Society for Worldwide Interbank Financial Telecommunication (SWIFT) provides the common messaging layer for much of this activity, but it does not itself transfer funds. Value moves through commercial bank accounts, correspondent relationships and settlement systems. This layered structure provides reach and institutional safeguards, yet it can also generate duplicated checks, prefunding costs, limited visibility, non-overlapping operating hours and difficult exception handling.

Competition is widening the choice of rails. Money-transfer operators and fintechs use digital interfaces, closed-loop networks and netting to improve retail services. Card networks support cross-border merchant payments. Domestic instant-payment systems are being linked bilaterally and through multilateral initiatives such as Project Nexus. ISO 20022 provides richer and more structured payment data, while tokenised money, central bank digital currencies and stablecoins test alternative settlement arrangements. However, none of these approaches removes the need for trusted identity, lawful data use, foreign-exchange liquidity, final settlement and effective recourse.

The core policy consideration is that *speed* and *cost* are necessary but incomplete measures of performance. A trusted cross-border payment must also be reliable, transparent, secure, legally certain and capable of correcting errors. Some friction is protective because it supports sanctions screening, AML/CFT controls, fraud prevention and settlement safety. The policy challenge therefore is to remove avoidable duplication and opacity while preserving proportionate safeguards. This report looks to establish five dimensions of trust that guide the rest of the paper: *integrity*, *reliability*, *transparency*, *protection* and *institutional trust*.

Against this backdrop, the report examines how these global shifts intersect with India's cross-border payment landscape and its growing digital payments ecosystem. It considers the distinct challenges associated with remittances, retail payments and MSME trade; the role of Digital Public Infrastructure (DPI) and UPI in supporting greater interoperability; and the relevance of bilateral, multilateral and emerging payment architectures to India's cross-border ambitions. The analysis suggests that there is no single technological or institutional model capable of addressing the varied requirements of cross-border payments. Instead, progress will depend on combining interoperable payment infrastructure with proportionate regulation, common technical and data standards, effective institutional coordination and clearly defined mechanisms for accountability and recourse. Building on these findings, the report sets out a roadmap for India to strengthen trusted cross-border payments while balancing efficiency and innovation with financial integrity, consumer protection and institutional trust.

CHAPTER

01

Cross-Border Payments in a Changing Global Landscape

Looking beyond speed and cost to understand the infrastructures, institutions and trust that make money move across borders.



A domestic digital payment can appear almost effortless. The payer selects a beneficiary, authenticates the instruction and receives confirmation within seconds. A cross-border payment must complete the same basic task across at least two legal systems and often two currencies, banking infrastructures, operating calendars and regulatory regimes. It may also require foreign-exchange conversion, sanctions screening, enhanced customer information and settlement through institutions that have no direct contractual relationship with one another. The distance that matters is therefore institutional as much as geographic.

This complexity creates two related challenges. The first is whether money arrives at a reasonable cost, within a predictable period, and with adequate information for both the sender and the recipient. The second is trust, and whether the system can establish who is transacting, protect the integrity of the payment, allocate liability and provide redress when something goes wrong. These objectives can reinforce one another, but they can also pull in different directions. Removing all checks may make a payment appear fast while weakening financial integrity. Adding controls without coordination can slow legitimate payments, make them opaque or render them inaccessible.

This chapter sets out the global landscape needed to evaluate those trade-offs. It first distinguishes the major payment segments and explains why aggregate market estimates require care. It then traces the correspondent-banking payment chain, assesses the expanding range of providers and technical models, examines geopolitical and macroeconomic pressures, and develops the five-part trust framework used throughout this paper.

1.1 Scale and Composition of Global Cross-Border Payments

A market of different markets

A cross-border payment is, broadly, a transfer in which the sender and recipient are in different jurisdictions. The Financial Stability Board separates the global policy discussion into wholesale payments, retail payments and remittances. Its monitoring methodology treats payments of at least US\$100,000 as wholesale for measurement purposes, while retail encompasses business-to-business, business-to-person, person-to-business and non-remittance person-to-person transfers below that institutional threshold.¹

Retail payments are not defined by a single universal value ceiling. Their defining characteristic is that the payer and payee are end users rather than financial institutions settling their own positions. Remittances are usually treated separately because they have a distinct development and financial-inclusion function, and because senders and recipients often have fewer resources with which to absorb fees, delays and failed transactions.²

Segment	Typical transactions	Primary policy concern
Wholesale	Interbank liquidity, foreign exchange, securities settlement and large corporate payments	Settlement, liquidity, systemic and operational risk
Retail	Consumer purchases, travel, e-commerce, MSME trade and other low-value transfers	Cost, speed, interoperability, transparency and recourse
Remittances	Personal transfers linked to migration and household support	Affordability, access, inclusion and certainty of receipt

Table 1: Principal cross-border payment segments

¹ Financial Stability Board. (2025). Annual progress report on meeting the targets for cross-border payments: Methodology document - 2025 update. <https://www.fsb.org/uploads/P091025-2.pdf>

² Committee on Payments and Market Infrastructures. (2018). Cross-border retail payments (CPMI Papers No. 173). Bank for International Settlements. <https://www.bis.org/cpmi/publ/d173.htm>

Networks, concentration and information

Cross-border payments follow the geography of the real economy. IMF analysis finds that trade, portfolio investment and foreign direct investment are important correlates of bilateral payment values. Distance, language and historical ties also matter, especially for smaller transactions where information asymmetries and the fixed cost of establishing relationships are more significant. Large financial centres occupy central network positions because they provide currencies, liquidity, correspondent services and market infrastructure to transactions whose ultimate sender and recipient may be elsewhere.³

Currency use is similarly concentrated. In the IMF's analysis of SWIFT payments between January 2021 and December 2024, the US dollar accounted for 53.4 per cent of financial-institution payment value and 55.1 per cent of customer-payment value in 2024. The corresponding shares of the euro were 18.0 per cent and 26.2 per cent. Renminbi-denominated payments increased over the 2021–2024 period, particularly among financial institutions, but their share remained small relative to the dollar and euro.⁴ These patterns reflect not only trade invoicing but also the use of major currencies for settlement, funding and intermediation. A payment between two emerging economies may consequently still be routed through a third financial centre and converted through a vehicle currency.⁵

The key lesson is that the global total should not be the paper's unit of analysis. The relevant unit is the corridor and use case. Costs, access, exchange-rate liquidity, documentation and provider competition vary sharply between a high-volume remittance corridor, a low-volume trade corridor and a tourist payment at a foreign merchant. Later chapters therefore assess India through remittances, retail purchases, and MSME trade rather than assuming a single average cross-border experience.

1.2 How Cross-Border Payments Work

The correspondent-banking foundation

Most domestic payment systems operate within one jurisdiction and settle in one currency. Correspondent banking connects these domestic islands. Under a correspondent relationship, one bank provides an account and payment services to another bank located elsewhere. The institution providing the service is the correspondent bank; the institution using it is the respondent bank. The same account is described from two perspectives. A *nostro* account is 'our account with you' in the books of the respondent bank, while a *vostro* account is 'your account with us' in the books of the correspondent institution holding it.⁶

Consider an importer whose bank does not have a direct relationship with the exporter's bank. The originating bank debits the payer, prepares a payment instruction and determines a route. An intermediary with the necessary correspondent accounts may debit one institution's balance and credit another's. A second intermediary may be required if neither bank has access to the destination currency or domestic clearing system. The beneficiary bank receives the instruction, performs its checks and credits the recipient. The chain can be short in a major corridor and considerably longer where relationships or currency liquidity are sparse.

This arrangement is built on commercial-bank money and bilateral trust. Each correspondent accepts exposure to its respondent, sets limits and prices services according to risk, volume and operating

³ Cerutti, E. M., Firat, M., & Hengge, M. (2025). Global cross-border payments: A \$1 quadrillion evolving market? (IMF Working Paper No. 2025/120). International Monetary Fund. <https://doi.org/10.5089/9798229013505.001>

⁴ Cerutti, E. M., Firat, M., & Hengge, M. (2025). *Global cross-border payments: A \$1 quadrillion evolving market?* (IMF Working Paper No. 2025/120). International Monetary Fund. <https://doi.org/10.5089/9798229013505.001>

⁵ Cerutti, E. M., Firat, M., & Hengge, M. (2025). Global cross-border payments: A \$1 quadrillion evolving market? (IMF Working Paper No. 2025/120). International Monetary Fund. <https://doi.org/10.5089/9798229013505.001>

⁶ Committee on Payments and Market Infrastructures. (2016). Correspondent banking (CPMI Papers No. 147). Bank for International Settlements. https://www.bis.org/cpmi/publ/single_jurisdiction_and_settle_in_a_single/d147.htm

costs. Prefunded balances ensure that payments can be made when instructions arrive, but they immobilise liquidity and create forecasting demands. Institutions must reconcile incoming and outgoing entries, monitor intraday positions and replenish accounts across time zones. Where a currency pair is illiquid, conversion may take place through a vehicle currency, adding another market transaction and spread.⁷

Messaging is not settlement

SWIFT is often described as the system that moves money internationally. Its core role is different. SWIFT provides secure and standardised financial messaging through which institutions exchange payment instructions and related information. It does not hold customer funds or operate the bank accounts through which value is transferred. Settlement occurs when relevant accounts are debited and credited by commercial banks or payment systems. This distinction explains why a message can travel quickly while the beneficiary still waits for usable funds.⁸

A payment comprises several related but distinct functions. Initiation captures the payer's instruction. Messaging communicates the information. Clearing establishes obligations between participating institutions. Settlement discharges those obligations by transferring the settlement asset. Foreign-exchange execution converts the source currency into the destination currency. Compliance and fraud controls determine whether the parties, purpose and payment data permit processing. Confirmation and reconciliation establish that the recipient was credited and each institution's records agree. Technology can accelerate one function without automatically reforming the others.

Two broad message routes illustrate the point. In a serial payment, the instruction- and funds-related account entries follow the same chain of banks. In a cover payment, the customer instruction may go directly to the beneficiary bank while a separate interbank transfer moves the corresponding funds through correspondents. Both approaches require complete and consistent information. Missing beneficiary details, incompatible formats or uncertainty over charges can trigger repair, investigation or rejection.

Why the chain creates friction

Every participant must comply with the law and manage its own risk. Banks screen parties against sanctions lists, apply customer due diligence, monitor transactions and assess whether the payment is consistent with the customer's profile. Because institutions operate under different laws and cannot always rely on one another's checks, the same transaction may be screened repeatedly. Differences in names, addresses, permitted data and risk tolerance can cause false positives and manual review. These controls protect the system, but duplication and inconsistent data make their operation slower and more expensive than necessary.⁹

Time zones and settlement calendars add a mechanical constraint. A customer-facing service may accept instructions at any hour, but the relevant real-time gross settlement system, foreign-exchange market or beneficiary institution may not be open. Where steps must occur sequentially, a closed system pauses the chain. The Committee on Payments and Market Infrastructures (CPMI) has therefore treated the extension and alignment of operating hours as a distinct policy objective. Faster messaging does not remove the need for overlapping access to liquidity and final settlement.¹⁰

⁷ Garratt, R., Koo Wilkens, P., & Shin, H. S. (2024). Next generation correspondent banking (BIS Bulletin No. 87). Bank for International Settlements. <https://www.bis.org/publ/bisbull87.pdf>

⁸ Swift. (n.d.). Who we are. Retrieved August 10, 2026, from <https://www.swift.com/about-us/who-we-are>

⁹ Garratt, R., Koo Wilkens, P., & Shin, H. S. (2024). Next Generation Correspondent Banking (BIS Bulletin No. 87). Bank for International Settlements. <https://www.bis.org/publ/bisbull87.pdf>

¹⁰ Committee on Payments and Market Infrastructures. (2022). Extending and aligning payment system operating hours for cross-border payments. Bank for International Settlements. <https://www.bis.org/cpmi/publ/d199.pdf>

The final stages can be decisive for the end user. A payment may reach the beneficiary bank rapidly but remain uncredited while local checks, account validation or manual posting are completed. The time visible to a messaging network may begin after the payer's provider has accepted the instruction and may end before the recipient can use the funds. For this reason, payment speed should be measured from the moment the sender instructs their bank to make the payment until the recipient can actually use the money. The measure should include delayed, rejected, and manually reviewed payments, rather than focusing only on payments that move smooth

Fees also accumulate in different forms. The sender may pay an explicit transfer charge and an exchange-rate margin. Correspondents may deduct lifting or handling charges. The recipient's bank may impose a fee. Providers bear compliance, technology, capital and liquidity costs that are incorporated into prices even if they are not itemised. A trustworthy price is therefore the total amount paid compared with the amount received, using a disclosed exchange-rate benchmark and a clear allocation of charges.

1.3 The Changing Payments Market

More providers, different forms of intermediation

Banks remain the backbone of international settlement, but they no longer define the entire customer experience. Money-transfer operators, fintech payment firms, digital wallets, card schemes and platform businesses increasingly provide the interface through which individuals and firms initiate cross-border payments. Some operate closed-loop networks with entities or agents in both jurisdictions. Instead of sending each retail instruction through a separate chain, they collect funds domestically, pay recipients from prefunded local accounts and periodically rebalance net positions. This can reduce per-transaction intermediation while preserving banking relationships for safeguarding, liquidity and settlement.

Card networks address a different use case. For a consumer purchase abroad, the issuer authorises the payer, the acquirer serves the merchant and the scheme supplies rules, messaging and clearing. Currency conversion may be performed by the network, issuer or merchant through dynamic currency conversion. The experience can be immediate at the point of sale even though clearing and settlement occur later. Speed at checkout, therefore, coexists with questions about exchange-rate transparency, chargebacks, fraud allocation, and merchant acceptance.

The expansion of non-bank payment service providers can increase competition and enable the specialisation of services for remittances, e-commerce and MSMEs. It can also fragment the regulatory perimeter. The FSB notes that jurisdictions apply different licensing, consumer-protection, operational-resilience and AML/CFT rules to banks and non-banks. Inconsistent treatment can produce regulatory arbitrage or duplicate compliance without improving safety. A level playing field does not require identical rules for unlike institutions, but it does require comparable risks to receive comparable protection.¹¹

Interlinking instant-payment systems

Domestic fast-payment systems have reset expectations by making account-to-account payments available in real or near-real time, often around the clock. Their cross-border relevance takes three forms. A fast-payment system can fund the domestic leg of a money-transfer service, support an interbank leg of correspondent banking, or connect directly with a system in another jurisdiction. Direct interlinking has the greatest potential to reproduce a domestic-style user experience, but the

¹¹ Financial Stability Board. (2024). Recommendations for regulating and supervising bank and non-bank payment service providers offering cross-border payment services: Final report. <https://www.fsb.org/2024/12/recommendations-for-regulating-and-supervising-bank-and-non-bank-payment-service-providers-offering-cross-border-payment-services-final-report/>

systems must reconcile message fields, aliases, limits, foreign-exchange provision, scheme rules, settlement and participant eligibility.¹²

Bilateral links can work well where two authorities and system operators agree on a specific corridor. They become difficult to scale because each new pair may require a new technical and governance arrangement. Project Nexus responds through a hub-and-spoke model. Its 2024 blueprint standardises how domestic instant-payment systems connect to a common platform and covers technology, scheme governance, oversight and commercial incentives. The model seeks to replace numerous bespoke links with one connection to a shared network, while leaving domestic systems and participating currencies in place.¹³ Nexus remains in the implementation phase, its first go-live is currently targeted for 2027. Its value will depend as much on governance, FX arrangements and liability rules as on technical connectivity.

Interlinking does not make cross-border governance disappear. Someone must determine which providers may participate, how foreign exchange is quoted, when settlement becomes final, what information accompanies a payment, how sanctions and AML/CFT controls are performed, and which institution compensates a user after an erroneous transfer. The achievement is not the elimination of institutions but the standardisation of their interaction. This distinction will be central when the paper later assesses UPI and India's DPI proposition.

Project Nexus

Project Nexus was conceived in 2021 by the BIS Innovation Hub's Singapore Centre and the Monetary Authority of Singapore as a way to connect domestic instant-payment systems across borders. Normally, each pair of countries must build and govern a separate bilateral link, making expansion progressively more complex and expensive. Nexus instead provides common APIs, ISO 20022 messages and a shared scheme rulebook, allowing a payment system to connect once and reach the wider network. A prototype demonstrated the model's technical feasibility in 2022, followed by a comprehensive blueprint in 2024 that envisaged payments reaching recipients within 60 seconds in most cases. The project moved towards implementation in 2025 through the establishment of Nexus Global Payments by the central banks of India, Malaysia, the Philippines, Singapore and Thailand, with Indonesia joining in 2026.¹⁴ Nexus can reduce the technical and institutional duplication associated with bilateral links, although questions of foreign-exchange pricing, compliance, liquidity, refunds and consumer redress must still be resolved through the scheme's rules and participating jurisdictions' laws.

Digital assets and tokenised settlement

Digital assets propose a more fundamental change by placing the payment instrument and transfer record on programmable infrastructure. Stablecoins can operate continuously and may shorten transaction chains where the same token is accepted in both jurisdictions. These models may reduce the need for sequential reconciliation, but they must still provide trusted issuance, convertibility, liquidity, and compliance.

Their current scale does not represent universal adoption. The IMF estimated major crypto-asset cross-border payment flows at approximately US\$2.5 trillion in 2024, a small fraction of the broader total. The CPMI has also warned that stablecoin arrangements can introduce concentration, inconsistent on-and off-ramps, fragmented oversight and macro-financial risks. A fast transfer on a ledger does not resolve the cost of acquiring the asset, converting it into local currency or obtaining redress from an issuer in another jurisdiction.¹⁵

¹² Committee on Payments and Market Infrastructures. (2022). Extending and aligning payment system operating hours for cross-border payments. Bank for International Settlements. <https://www.bis.org/cpmi/publ/d199.pdf>

¹³ Bank for International Settlements Innovation Hub. (2024). Nexus: Enabling instant cross-border payments. <https://www.bis.org/publ/othp86.htm>

¹⁴ Nexus Global Payments. (n.d.). *About Nexus*. Retrieved August 31, 2026, from <https://nexusglobalpayments.org/about-nexus/>

¹⁵ Cerutti, E. M., Firat, M., & Hengge, M. (2025). Global cross-border payments: A \$1 quadrillion evolving market? (IMF Working Paper No. 2025/120). International Monetary Fund. <https://doi.org/10.5089/9798229013505.001>; Committee on Payments and Market

The emerging market demonstrates a plurality of methods in cross-border payments. Correspondent banking, card networks, money-transfer operators, linked fast-payment systems and tokenised platforms solve different combinations of reach, settlement, liquidity and user-interface problems. The appropriate policy question is not to determine which architecture delivers the required use case with proportionate safeguards and interoperable governance, rather than justifying superiority based on efficiency alone.

1.4 Geopolitical and Macroeconomic Shifts

Payments reflect economic relationships

Payment corridors are created by underlying relationships. Trade generates invoices and merchant payments. Foreign direct and portfolio investment generate capital and income flows. Migration creates recurring remittances. Tourism produces high-frequency retail purchases and cash withdrawals. Education and professional services create tuition, subscription and contract payments. Growth or contraction in any of these activities changes the volume, direction, currency and typical size of payments.

Macroeconomic conditions also alter the cost and risk of providing them. Exchange-rate volatility widens the risk borne by a provider that guarantees a recipient amount before settlement. Higher interest rates increase the opportunity cost of prefunded nostro balances. Market stress can reduce liquidity in thinly traded currency pairs and cause providers to route through a vehicle currency. Capital controls and reporting requirements influence when and for what purpose funds may leave or enter a jurisdiction. These are not failures of the payment rail, but the rail must implement them predictably.

Currencies, sovereignty and interoperability

Currency choice carries economic and strategic consequences. A widely used currency benefits from deep liquidity, established correspondent networks and lower conversion costs. Those same network effects make change gradual even when new payment technology becomes available. Local-currency settlement can reduce reliance on a vehicle currency for some bilateral trade, but it requires market makers, hedging instruments, balanced flows and confidence that balances can be reused or converted. A political agreement to adopt a currency does not, by itself, create a liquid corridor.

Digital money can widen the set of channels but may also intensify currency substitution. An easily accessible foreign-currency stablecoin could provide a convenient transfer and store-of-value instrument while weakening domestic monetary control in vulnerable economies. CBDC or fast-payment interlinking can preserve the role of sovereign money, but it requires agreement on access, foreign exchange, and settlement. The design question is therefore how to obtain interoperability without surrendering legitimate regulatory and monetary objectives.¹⁶

Geoeconomic fragmentation also makes corridor resilience a strategic objective. India should avoid dependence on a single correspondent route, settlement arrangement or geopolitical bloc and use corridor monitoring to identify exposure to sanctions, de-risking and sudden loss of access. Diversification should combine interoperable multilateral arrangements, selected bilateral links and viable local-currency settlement channels without replacing one concentration with another.¹⁷

Infrastructures. (2023). Considerations for the use of stablecoin arrangements in cross-border payments. Bank for International Settlements. <https://www.bis.org/cpmi/publ/d220.pdf>

¹⁶ Kim, S., Miksjuk, A., Suryakumar, N., Tuladhar, A., Velculescu, D., Wu, Y., Zuniga, J., & Hallmark, N. (2024). Digital money, cross-border payments, international reserves, and the global financial safety net: Preliminary considerations (IMF Note No. 2024/001). International Monetary Fund. <https://www.imf.org/-/media/files/publications/imf-notes/2024/english/insea2024001.pdf>

¹⁷ Pradhan, S.-K., Stebunovs, V., Takáts, E., & Temesvary, J. (2025). *Geopolitics meets monetary policy: Decoding their impact on cross-border bank lending* (BIS Working Papers No. 1247). Bank for International Settlements. <https://www.bis.org/publ/work1247.htm>

For India, these developments create both an opportunity and a discipline. The size of its diaspora, trade network, and outbound travel market gives it an interest in cheaper, more predictable retail corridors. Unified Payments Interface (UPI) and the broader Digital Public Infrastructure (DPI) experience provide proven capabilities in domestic interoperability and high-volume low-value payments. Their international value, however, will depend on the trust arrangements surrounding the rail: bilateral rules, data protection, foreign-exchange provision, settlement finality, participant incentives and cross-border redress.

1.5 From Speed and Cost to Trust

The G20 baseline

The G20 Roadmap for Enhancing Cross-border Payments converted a longstanding concern into a measurable international programme. In 2021, the FSB adopted targets covering cost, speed, transparency, and access across wholesale, retail, and remittance segments, with most targets set for the end of 2027 and the remittance cost target aligned with the 2030 Sustainable Development Goal. This framework correctly places the end user at the centre and makes clear that a payment is not improved merely because an interbank message moves faster.¹⁸

Progress has nevertheless been limited globally. The FSB's 2025 consolidated report concluded that major policy-development milestones had not yet translated into tangible improvements for end users. Wholesale and remittance speed showed some improvement, but average costs remained sticky and available transparency data were incomplete. The gap between policy standards and corridor-level outcomes shows why implementation, provider incentives and domestic reform matter as much as global principles.¹⁹

Five dimensions of a trusted payment

Cost, speed, transparency and access remain indispensable performance measures. They do not fully capture whether a user can rely on the system. This paper therefore uses five linked dimensions of trust. The framework does not treat trust as confidence created by branding or technology. It treats trust as an observable property of rules, information, operational performance and remedies.

¹⁸ Financial Stability Board. (2021). Targets for addressing the four challenges of cross-border payments: Final report. <https://www.fsb.org/2021/10/targets-for-addressing-the-four-challenges-of-cross-border-payments-final-report/>

¹⁹ Financial Stability Board. (2025). G20 roadmap for cross-border payments: Consolidated progress report for 2025. <https://www.fsb.org/2025/10/g20-roadmap-for-cross-border-payments-consolidated-progress-report-for-2025/>

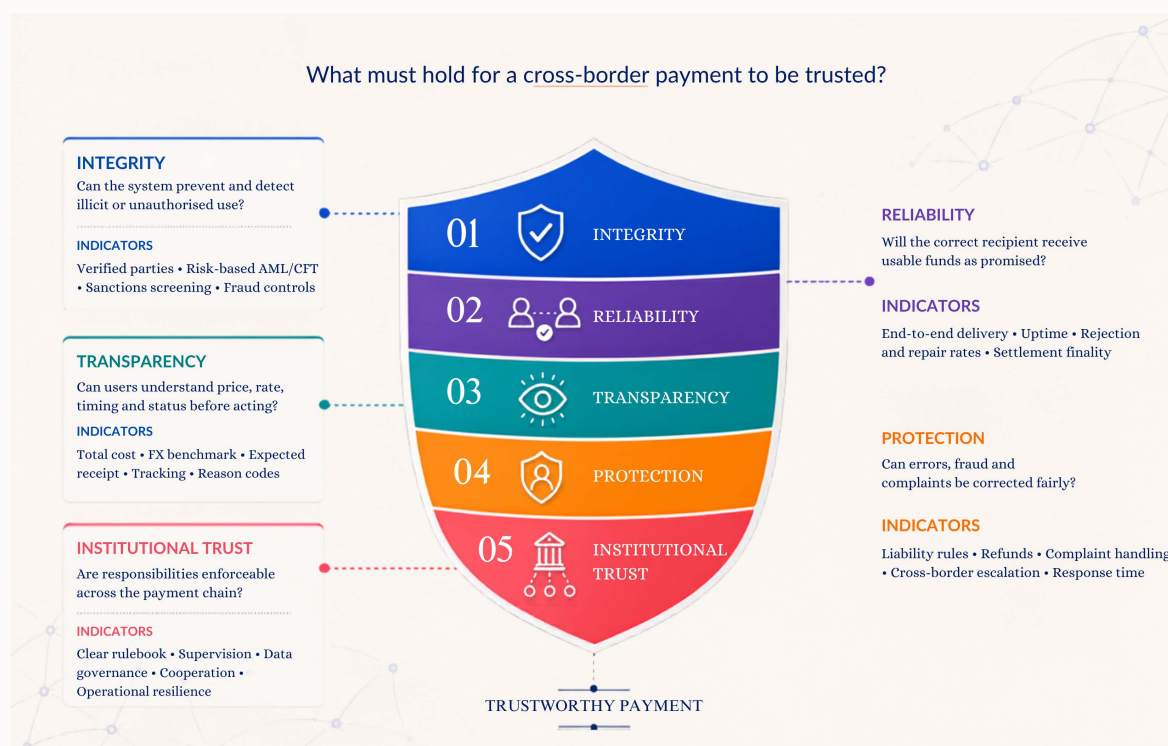


Figure 1: Five Dimensions Of Trust

Integrity is foundational because a payment system that cannot exclude criminal or sanctioned activity will lose regulatory and correspondent access. The revised Financial Action Task Force (FATF) Recommendation 16 strengthens the safety and security of information accompanying qualifying cross-border payments, clarifies responsibility across the chain and requires tools that protect against fraud and error. It sets out a comprehensive framework of measures that countries must undertake to combat money laundering, terrorist financing and financing of weapons of mass destruction. The revised standards are aimed at supporting the G20 roadmap to make cross-border payments faster, cheaper, more transparent, and more inclusive. These changes illustrate that compliance data can serve both public enforcement and customer protection when requirements are standardised.²⁰

Reliability requires more than average speed. It includes the probability of successful delivery, the accuracy of the recipient and amount, operational availability, settlement finality and the treatment of exceptions. A service that credits most payments in seconds but leaves a small share unresolved for days may be unsuitable for wages, emergency remittances or time-sensitive trade. Reporting should therefore include the distribution of outcomes, not only a headline average.

Transparency means that the payer can compare the total price, exchange rate, recipient amount and expected delivery time before authorising the transaction. After initiation, both parties should be able to determine the status and understand any delays or rejections. Information must be meaningful rather than merely disclosed. A complex schedule of charges or an exchange rate presented without a benchmark does little to correct the user's informational disadvantage.

Protection concerns what happens after failure, fraud or mistake. Domestic payment systems usually operate within one legal and supervisory framework. Cross-border payments may divide responsibility among an initiating provider, correspondents, an FX provider, a scheme and the beneficiary institution. Users need a clear first point of contact, defined investigation timeframes and

²⁰ Financial Action Task Force. (2025, June 18). FATF updates standards on Recommendation 16 on payment transparency. <https://www.fatf-gafi.org/en/publications/Fatfrecommendations/update-Recommendation-16-payment-transparency-june-2025.html>

rules for reimbursement or recovery. The FSB consequently recommends that regulatory regimes for bank and non-bank cross-border providers expressly address consumer harm.²¹

Institutional trust binds the other dimensions together. Participants need confidence that counterparties follow common rules, protect data, remain operationally resilient and honour settlement obligations. Authorities need mechanisms for information sharing and coordinated supervision. Users need confidence that a promise made by the front-end provider is supported by enforceable responsibilities throughout the chain. Interoperability without governance can connect systems technically while leaving these obligations uncertain.

Protective friction and avoidable friction

A useful policy framework must distinguish friction by function. Protective friction reduces a defined risk, such as authenticating a payer, verifying a beneficiary, screening for sanctions, confirming sufficient funds, or allowing a user to review an unusual instruction. Avoidable friction arises when the same information is collected repeatedly without reuse, data is truncated between systems, similar risks receive inconsistent treatment, a payment waits because systems are unnecessarily unavailable, or a user cannot obtain a reason for rejection.

The distinction is contextual rather than absolute. A manual review may be proportionate for a high-risk payment and wasteful for a routine low-value transfer between verified users. A data field may be necessary for financial-crime control but excessive for another purpose. Faster payment can increase the difficulty of recalling fraudulent funds, making pre-transaction verification more important. Good design shifts safeguards to the point at which they are most effective and automates them where data quality and accountability permit.

This approach also prevents technology from becoming a substitute for policy. UPI, instant payment links, APIs, and tokenised settlement can reduce latency and improve information exchange. They cannot decide which identity evidence another jurisdiction must accept, who bears the loss of fraud, whether data may cross a border, or how foreign-exchange liquidity should be provided. Those are institutional choices expressed through law, regulation, scheme rules and contracts.

Implications for the rest of the paper

Chapter 1 establishes three propositions. First, the analysis must distinguish among wholesale, retail, remittance, and MSME use cases. Second, payment performance is driven by an end-to-end chain that integrates messaging, compliance, foreign exchange, clearing, and settlement. Improving one layer does not guarantee improvement at the beneficiary. Third, trust is not the opposite of efficiency. Clear rules, better data and interoperable safeguards can make payments both safer and less burdensome.

The next chapter applies this framework to India. It maps inbound and outbound remittances, retail payments abroad and MSME trade payments; identifies the relevant institutions and legal requirements; and establishes a corridor-level baseline for cost, speed, transparency, access, reliability and protection. Later chapters then assess which frictions are justified, where DPI and UPI can contribute, and what domestic and international reforms are required for India to build trusted cross-border payment connectivity.

²¹ Financial Stability Board. (2024). Recommendations for regulating and supervising bank and non-bank payment service providers offering cross-border payment services: Final report. <https://www.fsb.org/2024/12/recommendations-for-regulating-and-supervising-bank-and-non-bank-payment-service-providers-offering-cross-border-payment-services-final-report/>

CHAPTER

02

India's Cross-Border Payments Landscape

Mapping India's position in global payment flows, the institutions and rules that shape them, and the performance gaps across corridors.



India's cross-border payments landscape is defined by contrast. The country is the world's largest recipient of migrant remittances, a major exporter of goods and services, and an increasingly important source of travel, education, and investment payments. At the same time, the user experience remains fragmented across corridors and purposes. A family receiving money from abroad, a traveller paying a foreign merchant and a small exporter collecting an overseas invoice encounter different institutions, rules, costs and remedies. This chapter establishes India's performance baseline before later chapters examine the underlying frictions and possible reforms.

2.1 India's Position in Global Payment Flows

India sits at the intersection of several large payment flows. The World Bank estimated that the country received approximately US\$129 billion in remittances in 2024, the highest amount received by any country. These flows support household consumption, education, healthcare and savings, while also strengthening the current account. The composition of remittances has broadened beyond the traditional Gulf corridors. The United States, the United Arab Emirates, the United Kingdom, Singapore, Saudi Arabia and other advanced and Gulf economies form the most consequential channels, reflecting both high-skilled migration and the continuing importance of temporary and lower-wage workers.²²

Outbound personal payments are also substantial. Under the Liberalised Remittance Scheme (LRS), resident individuals remitted US\$31.74 billion in 2023-24. Travel alone accounted for US\$17.01 billion, followed by maintenance of relatives, gifts and overseas study. The scale of travel payments means that cross-border retail payments are no longer a niche used only by affluent cardholders. They are increasingly part of ordinary tourism, education, family support and digital consumption.²³

Trade-related payments are larger and more varied. India's merchandise exports, services exports and imports create flows involving invoices, documentary evidence, foreign exchange and settlement through authorised dealer banks. In 2023-24, the merchandise trade deficit was US\$238.3 billion, while software and business services generated a large offsetting surplus. The United States, the European Union, the United Arab Emirates, China, Singapore and the United Kingdom recur across India's trade and financial relationships, but each corridor differs in currency, banking depth, sanctions exposure, time-zone overlap and local payment infrastructure.²⁴

These categories should not be collapsed into a single measure of cross-border payments. Migrant remittances are typically low-value, recurrent and household-facing. Travel payments are immediate point-of-sale transactions. MSME trade payments require reconciliation against an underlying commercial transaction. Their common requirement is trust, but the evidence needed to establish that trust differs. India's position should therefore be assessed by use case and corridor, rather than by aggregate volume alone.

2.2 Institutional and Regulatory Architecture

India's cross-border payment architecture is governed by several overlapping frameworks. Together, they answer different questions: who may operate a payment system, whether foreign exchange may be sent or received, how trade payments are recorded, what due diligence is required and where transaction data may be stored. A payment can satisfy one framework but still be delayed under another.

²² World Bank. (2024, December 18). In 2024, remittance flows to low- and middle-income countries are expected to reach \$685 billion, larger than FDI and ODA combined. <https://blogs.worldbank.org/en/peoplemove/in-2024--remittance-flows-to-low--and-middle-income-countries-ar>

²³ Reserve Bank of India. (2024, November 20). Outward remittances under the Liberalised Remittance Scheme for resident individuals. RBI Bulletin. https://www.rbi.org.in/scripts/BS_ViewBulletin.aspx?ld=23035

²⁴ Reserve Bank of India. (2024). Annual report 2023-24: Economic review. https://systemhealth.rbi.org.in/Scripts/AnnualReportPublications.aspx_ld%3D1402.html

The Payment and Settlement Systems Act

The Payment and Settlement Systems Act, 2007 (PSS Act) gives the Reserve Bank of India (RBI) authority to regulate and supervise payment systems and their operators. Banks and non-banks generally require RBI authorisation to operate a payment system unless specifically exempted. The Act addresses the safety, governance and operation of the payment mechanism; it does not, by itself, make the underlying foreign-exchange transaction permissible. The RBI also issues operational requirements covering security, customer protection, outsourcing, fraud controls and grievance redress.²⁵

FEMA, the LRS and authorised dealer banks

The Foreign Exchange Management Act, 1999 (FEMA) governs the underlying movement of money between residents and non-residents. It classifies transactions by residence and economic purpose and distinguishes current-account payments, such as travel or education expenses, from capital-account transactions, such as overseas investment. Authorised Dealer Category-I banks are the principal gatekeepers. They verify permissibility, conduct due diligence, convert currency and complete regulatory reporting.

The Foreign Exchange Management (Authorised Persons) Regulations, 2026 bring AD Category-III within the consolidated framework governing persons authorised to deal in foreign exchange. Alongside entities undertaking specified foreign-exchange transactions incidental to their existing activities, the framework permits entities seeking to offer innovative products and services involving foreign exchange to apply for AD Category-III authorisation. Applicants for this category are subject to a minimum net worth requirement of ₹2 crore and may undertake only the activities specifically authorised by RBI.^{26,27}

The significance of this category lies in providing a proportionate authorisation pathway for specialised entities that may not require the wider foreign-exchange permissions available to an AD Category-I bank. It can enable regulated non-bank providers to develop products for cross-border trade, remittances and related foreign-exchange use cases while remaining subject to RBI oversight. This could widen participation and encourage innovation without allowing every authorised entity to undertake the full range of current-account and capital-account transactions. The practical effect will depend on the activities authorised, the entity's relationship with AD Category-I banks and the extent to which the framework reduces dependence on individual banking arrangements.

For resident individuals, the Liberalised Remittance Scheme (LRS) permits remittances of up to US\$250,000 per financial year for permitted current- and capital-account transactions. It does not apply to companies, partnership firms, trusts or Hindu undivided families. A Permanent Account Number (PAN) is required to identify the remitter and aggregate transactions against the annual limit. Banks also use RBI-prescribed purpose codes to record the reason for a transfer, such as education, travel, family maintenance, software services, or imports. These requirements are necessary for foreign-exchange monitoring, but implementation can differ among authorised dealer banks. Differences in PAN verification, interpretation of purpose codes and supporting-document requirements can result in similar lawful transactions receiving different treatment across providers. The avoidable friction therefore arises not from the existence of the LRS or purpose classification, but from inconsistent application.²⁸

²⁵ Government of India. (2007). *The Payment and Settlement Systems Act, 2007* (Act No. 51 of 2007). India Code.

<https://www.indiacode.nic.in/bitstream/123456789/2082/4/a2007-51.pdf>

²⁶ Reserve Bank of India. (2026, April 30). *Foreign Exchange Management (Authorised Persons) Regulations, 2026* (Notification No. FEMA 401/2026-RB). <https://www.rbi.org.in/Scripts/NotificationUser.aspx?Id=13444&Mode=0>

²⁷ Reserve Bank of India. (2026, May 6). *Issuance of Foreign Exchange Management (Authorised Persons) Regulations, 2026* (RBI/2026-27/78, A.P. (DIR Series) Circular No. 09 <https://www.rbi.org.in/Scripts/NotificationUser.aspx?Id=13445&Mode=0>

²⁸ Reserve Bank of India. (2024). *Master Direction—Liberalised Remittance Scheme*, updated September 6, 2024. https://systemhealth.rbi.org.in/Scripts/BS_ViewMasDirections.aspx_id%3D10192%283%29.html

The PA-CB framework

A payment aggregator collects money from customers on behalf of multiple merchants and subsequently settles the pooled funds with those merchants. As e-commerce expanded, Indian buyers and small exporters increasingly dealt with digital platforms rather than directly with an AD bank. Earlier arrangements relied substantially on AD banks working with Online Payment Gateway Service Providers. In October 2023, RBI brought entities facilitating online import and export payments within a direct PA-CB framework. The framework has since been consolidated into the Reserve Bank of India (Regulation of Payment Aggregators) Directions, 2025, which define PA-CB activity as the aggregation of permitted current-account payments for onboarded merchants through e-commerce mode.²⁹

A PA-CB may handle exports (PA-CB-E), imports (PA-CB-I), or both (PA-CB-E&I). AD Category-I banks do not require separate PA-CB authorisation, while non-bank PA-CBs require RBI authorisation and registration with the Financial Intelligence Unit–India. Non-banks must also meet governance, technology, security, fraud management, grievance redress, and minimum net worth requirements.

For imports, customer funds move through an Import Collection Account maintained with an AD bank before payment to the overseas merchant. The PA-CB must conduct due diligence on the foreign merchant or marketplace and, for imports above ₹2.5 lakh per unit, on the Indian buyer. For exports, proceeds enter an Export Collection Account and may be settled only to an onboarded Indian merchant. Import and export accounts must remain separate, and the framework is limited to ₹25 lakh per unit of goods or services. The framework regulates intermediaries and fund handling; it is not a new payment rail and does not replace FEMA. The AD bank remains responsible for foreign-exchange compliance and trade reconciliation.³⁰

Direct RBI regulation of PA-CBs has improved the position by placing non-bank cross-border aggregators within a common framework, rather than leaving their operations to depend largely on individual arrangements with authorised dealer banks. It has not, however, created a single authorisation covering the entire transaction. A PA-CB remains subject to payment-system requirements under the PSS Act, while the authorised dealer bank retains responsibility for foreign-exchange compliance under FEMA. Implementation questions can therefore arise around prefunding, the application of the ₹25 lakh transaction limit to different business models, the division of responsibility between the PA-CB and the authorised dealer bank, and the extent to which permissions available for domestic payment aggregation apply to cross-border activity. Clearer and more consistent supervisory interpretation is necessary to prevent similar services from facing materially different restrictions because of their regulatory category or banking partner.

EDPMS and IDPMS

The Export Data Processing and Monitoring System (EDPMS) and Import Data Processing and Monitoring System (IDPMS) connect trade payments with their underlying customs and banking records. EDPMS tracks export declarations and receipt of export proceeds, while IDPMS tracks import records and corresponding outward payments. Banks use these systems to match invoices, shipping bills or bills of entry with the related payment. For an inward remittance, a bank may also issue a Foreign Inward Remittance Advice (FIRA), often electronically, recording details such as the sender, amount, currency and stated purpose of the payment. A FIRA provides evidence that funds have been received, but it does not by itself close the corresponding export entry. The authorised dealer bank must still match the receipt with the relevant record in EDPMS.

²⁹ Reserve Bank of India. (2025, September 15). *Reserve Bank of India (Regulation of Payment Aggregators) Directions, 2025*. https://www.rbi.org.in/Scripts/BS_ViewMasDirections.aspx?id=12896

³⁰ Reserve Bank of India. (2023, October 31). *Regulation of Payment Aggregator–Cross Border (PA-CB)* (RBI/2023-24/80). <https://www.rbi.org.in/Scripts/NotificationUser.aspx?id=12561&Mode=0>; Reserve Bank of India. (2024). *Master Direction—Export of goods and services*, as amended. https://www.rbi.org.in/scripts/BS_ViewMasDirections.aspx?id=10395; Reserve Bank of India. (2024). *Master Direction—Import of goods and services*, as amended. https://www.rbi.org.in/scripts/BS_ViewMasDirections.aspx?id=10201

Practices concerning FIRA issuance and EDPMS closure can differ among authorised dealer banks. Exporters may therefore be asked for different documents or required to resubmit information already supplied through a platform or payment intermediary. A mismatch involving the merchant's name, invoice number, amount, purpose code, shipping record, platform reference or bank reference can turn a genuine transaction into a manual reconciliation case. PA-CBs must provide their authorised dealer banks with sufficient information to report and close these entries, but the absence of common documentary and data standards can shift the resulting burden onto the exporter.

RBI has since simplified closure for entries valued at ₹10 lakh or less. Authorised dealer banks may close such EDPMS and IDPMS entries on an exporter's declaration that proceeds have been realised or an importer's declaration that payment has been made. They may accept reductions in declared or invoice value on the same basis and receive consolidated declarations quarterly for bulk closure. Banks must also review their charges for these transactions and may not levy penal charges for delays in adherence to regulatory guidelines. This reduces the documentation burden for small-value transactions, but does not displace the underlying realisation, repatriation or payment requirements.³¹ Because bilateral duplication is institutional as well as technical, each link may require separate legal and operating arrangements among central banks, system operators, banking associations and participating institutions. A multilateral model replaces part of that repeated negotiation with a common scheme, but creates a different governance problem. The scheme must determine how countries and participants join, which service levels apply and how standards change. Its benefits therefore depend on the credibility and neutrality of the institution operating the framework.

KYC, AML/CFT and sanctions controls

The RBI's Know Your Customer Direction and India's anti-money-laundering framework require regulated entities to identify customers and beneficial owners, understand the purpose of transactions and monitor unusual activity. Banks and payment providers also screen parties against sanctions and terrorism-financing controls. These obligations follow a risk-based approach, so institutions may seek additional information where risk is higher. The flexibility supports financial integrity but also produces differing documentary expectations among banks, platforms and correspondents.³²

Payment-data localisation and privacy

RBI's 2018 data storage directive requires payment-system data relating to India to be stored in India, including end-to-end transaction information. Cross-border processing may involve an overseas component, but the complete payment data must be stored in India, subject to the RBI's specific treatment of the foreign component of such transactions. The Digital Personal Data Protection Act, 2023 and the rules notified in 2025 add requirements concerning lawful processing, security, retention and individual rights as their provisions take effect. Providers must reconcile these duties with the privacy and disclosure laws of partner jurisdictions.³³

³¹ Reserve Bank of India. (2025, October 1). *Export Data Processing and Monitoring System (EDPMS) and Import Data Processing and Monitoring System (IDPMS): Reconciliation of export/import entries: Review of guidelines* (RBI/2025-26/89, A.P. (DIR Series) Circular No. 12). <https://www.rbi.org.in/Scripts/NotificationUser.aspx?Id=12908&Mode=0>

³² Reserve Bank of India. (2016). *Master Direction—Know Your Customer (KYC) Direction, 2016*, as amended. https://www.rbi.org.in/Scripts/BS_ViewMasDirections.aspx?id=11566

³³ Reserve Bank of India. (2018, April 6). *Storage of payment system data* (RBI/2017-18/153). <https://www.rbi.org.in/Scripts/NotificationUser.aspx?Id=11244&Mode=0>; Ministry of Electronics and Information Technology. (2025, November 14). *Digital Personal Data Protection Rules, 2025*. Government of India. <https://www.meity.gov.in/documents/act-and-policies/digital-personal-data-protection-rules-2025-gDOxUjMtQWw>

Institutional role of NPCI and NIPL

NPCI operates UPI and other domestic retail systems, while NPCI International Payments Limited develops overseas acceptance and system-linkage partnerships. They provide scheme rules, switching and technical interoperability, but do not replace FEMA permissions, PA-CB obligations, AD-bank reporting, foreign exchange, sanctions screening or licensing in the partner country. The interaction of these frameworks, rather than the payment interface alone, determines the cost, speed and reliability of the remittance, retail and MSME payments examined below.

2.3 Personal and Migrant Remittances

The institutional architecture described above ultimately determines how much remittance income reaches Indian households, how quickly it arrives and whether users can obtain redress when a transaction fails. India received US\$118.7 billion in remittances during 2023-24, more than twice the amount received in 2010-11. The World Bank separately estimated calendar-year inflows of US\$129 billion in 2024, making India the world's largest recipient. These inflows have remained close to 3 per cent of GDP since 2000 and, on average, financed approximately 42 per cent of India's merchandise trade deficit between 2010-11 and 2023-24, excluding the pandemic year.³⁴

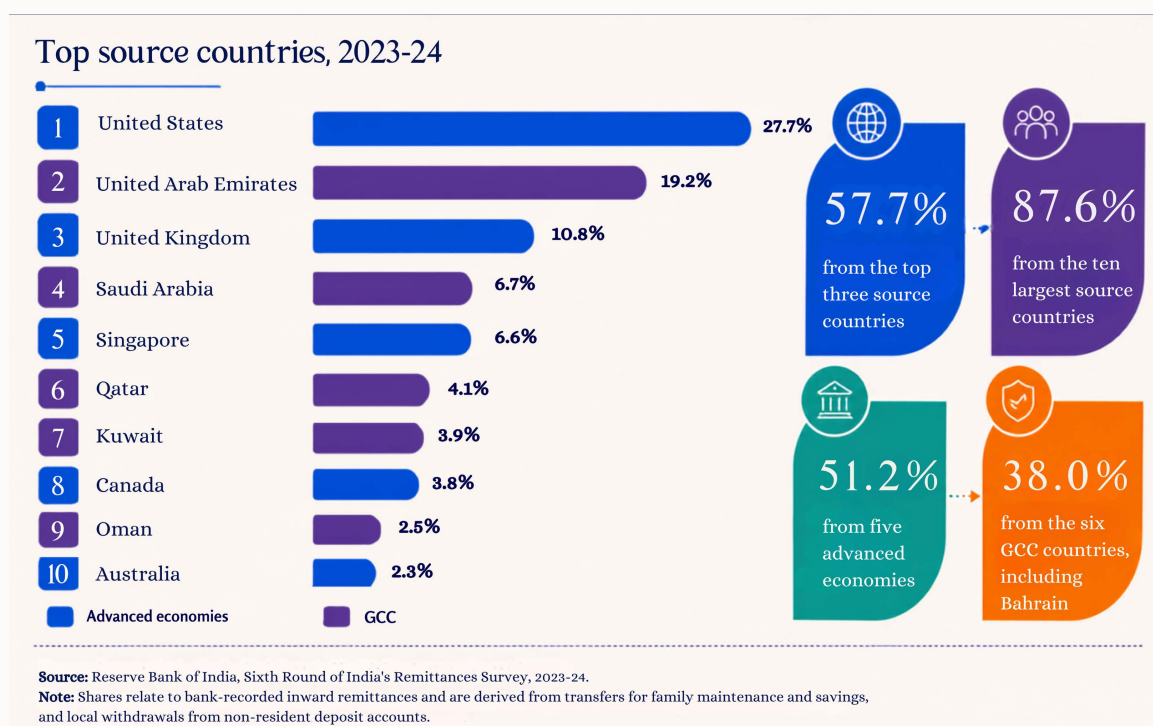


Figure 2: Countries From Which India RECEIVES Most Remittances

India's remittance economy is not a single market. In 2023-24, the United States accounted for 27.7 per cent of inward remittances, followed by the United Arab Emirates at 19.2 per cent and the United

³⁴ Gajbhiye, D., Kundu, S., George, A., Vinherkar, O., Anees, Y., & Baby, J. (2025, March 19). Changing dynamics of India's remittances: Insights from the sixth round of India's remittances survey. *RBI Bulletin*. https://rbi.org.in/scripts/BS_ViewBulletin.aspx?Id=23260; Ratha, D., Plaza, S., & Kim, E. J. (2024, December 18). *In 2024, remittance flows to low- and middle-income countries are expected to reach \$685 billion, larger than FDI and ODA combined*. World Bank Blogs. <https://blogs.worldbank.org/en/peoplemove/in-2024--remittance-flows-to-low--and-middle-income-countries-ar>

Kingdom at 10.8 per cent. Advanced economies collectively contributed more than half of recorded inflows, while the Gulf Cooperation Council countries continued to account for 38 per cent. Transfers from advanced economies are increasingly associated with skilled and higher-income migrants, whereas Gulf corridors remain substantially dependent on temporary, blue-collar and semi-skilled employment. The latter often involve smaller and more regular transfers for immediate household expenditure, making fixed fees, exchange-rate margins, branch access and delayed wages particularly consequential.³⁵

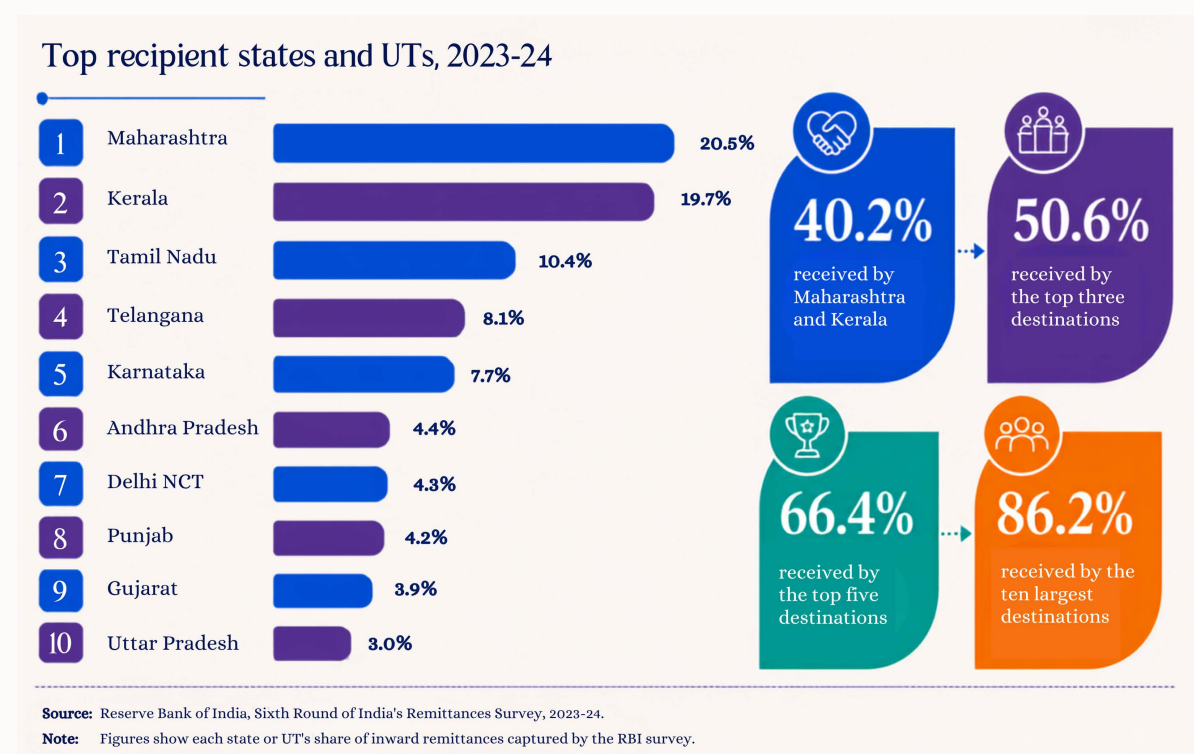


Figure 3: States that receive the most Remittances

The geographical distribution within India is similarly concentrated. Maharashtra received 20.5 per cent of inward remittances in 2023-24, followed by Kerala at 19.7 per cent and Tamil Nadu at 10.4 per cent. Earlier state-level research identified Kerala, Punjab and Goa as unusually dependent on international remittances.³⁶

Friction can also arise before the payment provider becomes involved. Recruitment charges, travel expenses, debt, and delayed wages reduce the amount available for remittance. The 2023 Kerala Recruitment Cost Survey reported a median recruitment cost of ₹61,156, equivalent to more than two months of foreign earnings for the surveyed migrant. A transfer may therefore be fast and inexpensive while the overall migration arrangement remains economically burdensome. The assessment should distinguish the cost of the payment from the migrant household's net economic return.³⁷

Once a transfer is initiated, transaction size and channel materially affect cost. The RBI found that the largest number of inward-remittance transactions in 2023-24 were below US\$200. The weighted

³⁵ Deepak, & Chauhan, P. S. (2026). International migration and the Indian economy: Systematic literature review of remittances, labour markets, unemployment, and macroeconomic dynamics. *Journal of International Commercial Law and Technology*, 7(1), 10119-10131.

³⁶ Deepak, & Chauhan, P. S. (2026). International migration and the Indian economy: Systematic literature review of remittances, labour markets, unemployment, and macroeconomic dynamics. *Journal of International Commercial Law and Technology*, 7(1), 10119-10131.

³⁷ McAuliffe, M., Bauloz, C., Oucho, L. A., & Rajan, S. I. (2026). A structured literature review of remittances, migration and economic policymaking in countries of origin: Evidence from Kenya, Kerala (India) and Sri Lanka. *Economies*, 14(6), Article 205. <https://doi.org/10.3390/economies14060205>

average cost for this category was 4.6 per cent, compared with 2.4 per cent for transfers between US\$200 and US\$500. Foreign-currency transfers through correspondent-bank Nostro accounts were the most expensive, while the Rupee Drawing Arrangement (RDA) was generally the least expensive. Under the RDA, an Indian authorised dealer bank partners with an overseas exchange house or money transfer operator and pays the beneficiary in rupees by drawing on the overseas institution's rupee Vostro account. It is an inward-only arrangement with no general limits on the amount or frequency of personal remittances. Under the Money Transfer Service Scheme (MTSS), an RBI-authorised Indian agent receives funds from an overseas money-transfer company and pays them to beneficiaries in India, including through approved cash outlets. MTSS is limited to personal remittances of up to US\$2,500 per transaction and 30 transfers to one beneficiary in a calendar year.³⁸

Digitalisation has improved convenience and competition. The RBI found that 73.5 per cent of remittances handled by the surveyed money transfer operators in 2023-24 were transmitted digitally, including 92.7 per cent of transfers from Saudi Arabia and 76.1 per cent from the UAE. Digital initiation and direct account credit can reduce travel, queues, and cash-handling risks, but a digitally transmitted payment is not necessarily inclusive end-to-end. A sender may still depend on an exchange house, lack an appropriate account, or face language and identification barriers. In India, nominal account ownership may coexist with limited account use, unreliable cash-out access, shared mobile devices or limited control over household finances. Women and elderly recipients can therefore remain dependent on agents or relatives.³⁹

Trust ultimately depends on transparency and redress. The sender should see the complete fee, exchange-rate margin, expected rupee amount and delivery time before authorising the transaction. Both parties should receive an end-to-end tracking reference, while a single institution should remain responsible for explaining delays, reversals and refunds even where several providers participate behind the scenes. India should consequently assess remittances through corridor-level indicators covering total cost, delivery time, rejection and refund rates, cash and digital access, and complaint-resolution time, disaggregated by source country, channel, transaction size and recipient state. For major labour corridors, these measures should be considered alongside recruitment costs and wage-related grievances. This household-transfer use case is analytically distinct from the immediate merchant-payment experience examined in the following section.

2.4 Retail Payments Abroad

Retail payments abroad differ from the recurring household transfers discussed above. A traveller must decide at the point of sale whether a card, cash, a prepaid instrument, a wallet, or a QR arrangement will work, and what it will ultimately cost. A successful terminal or app message confirms authorisation, not necessarily final settlement. In a typical international card purchase, the merchant's acquirer routes the request through a card network to the Indian issuer; currency conversion, clearing and settlement follow, and any reversal or refund may travel back through the same chain. This helps explain why the front end can appear instantaneous while the transaction remains costly or difficult to correct. BIS research finds that the combined merchant and consumer cost of using cards across borders remains materially higher than for domestic cards and has changed little over time.⁴⁰

For Indian travellers, international cards offer the widest reach, but the final rupee debit may not be apparent at the time of purchase. It may include the network exchange rate, an issuer's foreign-

³⁸ Gajbhiye, D., Kundu, S., George, A., Vinherkar, O., Anees, Y., & Baby, J. (2025, March 19). Changing dynamics of India's remittances: Insights from the sixth round of India's remittances survey. *RBI Bulletin*. https://rbi.org.in/scripts/BS_ViewBulletin.aspx?Id=23260

³⁹ Gajbhiye, D., Kundu, S., George, A., Vinherkar, O., Anees, Y., & Baby, J. (2025, March 19). Changing dynamics of India's remittances: Insights from the sixth round of India's remittances survey. *RBI Bulletin*. https://rbi.org.in/scripts/BS_ViewBulletin.aspx?Id=23260; McAuliffe, M., Bauloz, C., Oucho, L. A., & Rajan, S. I. (2026). A structured literature review of remittances, migration and economic policymaking in countries of origin: Evidence from Kenya, Kerala (India) and Sri Lanka. *Economies*, 14(6), Article 205. <https://doi.org/10.3390/economies14060205>

⁴⁰ Claessens, S., & Rice, T. (2026). *Cross-border payment technologies: Innovations and challenges* (BIS Papers No. 167). Bank for International Settlements. <https://www.bis.org/publ/bppdf/bisap167.pdf>

currency mark-up and, for cash withdrawals, fees from both the issuing bank and overseas ATM operator. Sometimes, the merchant or ATM offers to show the amount in rupees and charge you in rupees instead of the local currency. This is called dynamic currency conversion (DCC). This makes the rupee amount visible, but the rate includes a service margin; card networks generally advise customers seeking the network rate to select the merchant's local currency.⁴¹ A card with adequate funds may still fail because international usage is switched off, a channel or daily limit has been reached, the merchant category is restricted, or issuer fraud controls treat the location or spending pattern as unusual. RBI notes that Indian cardholders can switch domestic and international card usage on or off, a useful security control that may also cause point-of-sale failure if misunderstood.⁴²

Prepaid forex cards can lock in an exchange rate and limit exposure of the traveller's primary account, but reloading abroad, unsupported currencies, ATM or inactivity fees, and refunds to the original card can create fresh friction. Domestic wallets usually have less overseas reach because acceptance depends on a specific bilateral QR or acquiring partnership. From the merchant's perspective, higher cross-border acquiring costs, fraud screening and chargeback exposure can make a foreign card less attractive, especially for small-value sales.

Post-transaction problems reveal a deeper trust gap. In practice, hotels and vehicle-rental firms routinely place security deposits or pre-authorisation holds on a traveller's card at check-in or pick-up, often for an amount higher than the expected bill, to cover potential damage, incidentals or late charges. These holds are not immediate payments, but they temporarily reduce available credit or debit balance, which can create liquidity pressure for travellers on tight limits. Even after checkout or return of the vehicle, the release of the hold is not always instantaneous and depends on the merchant's acquirer and the issuing bank's processing cycle, which can vary significantly across jurisdictions and card networks. A transaction that appears to have failed at the point of sale can also still be authorised in the background, leaving a "pending" debit that only clears or drops off after the authorisation window expires or is explicitly reversed by the merchant. This creates situations where the customer is unsure whether they have been charged at all until the statement is updated days later.

Refunds add another layer of complexity because they are processed as new inbound transactions rather than simple reversals of the original payment. As a result, the refund is typically converted at the exchange rate prevailing on the date it is issued, not the date of the original purchase. In volatile currency conditions, the rupee amount credited back to the customer may differ meaningfully from the rupee amount originally debited, even when the merchant refunds the full foreign-currency amount. Processing times also vary widely depending on the merchant, acquirer and card network, and can range from a few days to several weeks, during which the customer has no clear visibility on the status of the funds.

Where disputes arise, chargebacks provide a formal protection mechanism, but they are procedurally heavy. The customer must retain receipts, booking confirmations and communication records, and then rely on their issuing bank to initiate a dispute through the card network, which is subsequently investigated by the foreign acquirer and merchant. Each party operates on different timelines and evidentiary standards, and the customer is largely removed from the process once it begins. During this period, statements and mobile banking apps typically show only fragmented updates—such as "pending," "reversed," or "under dispute"—without a unified view of the transaction lifecycle from authorisation to final resolution. The underlying issue is therefore not simply the time taken for money to move, but the lack of transparency regarding status, responsibility, and the applicable exchange rate at each stage, leaving the traveller uncertain about when funds are truly settled and usable again.

⁴¹ Visa. (n.d.). *Travel with Visa: Essential travel tips for abroad*. Retrieved August 13, 2026, from <https://www.visa.com/en-us/personal/travel>

⁴² Reserve Bank of India. (2026). *Payments Vision 2028*. <https://rbidocs.rbi.org.in/rdocs/PublicationReport/Pdfs/PAYMENTSVISION2028270326500316AFADEB47259CB970132BA01304.PDvheicle return>

Foreign visitors to India face similar issues. International cards are accepted at many organised merchants, but small merchants may accept only cash or domestic QR payments. RBI's 2023 framework allowed banks and non-banks to issue rupee-denominated prepaid instruments linked to UPI to foreign nationals and NRIs visiting India, initially for travellers from G20 countries at selected international airports and for merchant payments only.⁴³ This provides access to India's QR-heavy retail environment without an Indian bank account, but introduces document verification, loading, device and connectivity requirements. Residual balances, refunds after departure and support must also be designed for temporary visitors.

India should therefore measure performance across the full retail-payment lifecycle. Corridor reporting should distinguish authorisation from final completion and publish effective FX margins, DCC use, reversal and refund times, complaint resolution, fraud losses, and merchant coverage by location and size. This is consistent with Payments Vision 2028, under which RBI proposes reports covering cross-border volumes, costs, transparency, speed, channels and corridors.⁴⁴

UPI acceptance arrangements

UPI acceptance abroad reduces one layer of friction by allowing an Indian traveller to scan a participating overseas merchant's QR code through a familiar application. The footprint expanded from the five markets reported by the Government in March 2023 to live person-to-merchant arrangements in Bhutan, Singapore, the UAE, France, Mauritius, Sri Lanka, Nepal, Qatar and Cambodia by July 2026.⁴⁵ The three models currently in play are overseas merchant acceptance, reciprocal person-to-person remittance links, and deployment of a UPI-like domestic system abroad. UPI-PayNow, for example, is principally a funds-transfer linkage, whereas UPI QR acceptance depends on a participating foreign acquirer and enabled merchant.

A country-level launch consequently does not imply universal acceptance. Usability depends on acquirer and merchant coverage, enabled Indian banks and apps, limits, directional rules, connectivity and display of the exchange rate before confirmation. Refunds and disputes still require that responsibility be allocated among the payer's bank, app provider, NIPL, foreign acquirer, and merchant. A familiar interface does not guarantee coverage or redress that's applicable domestically.

Project Nexus addresses the scaling problem behind bilateral links. Its 2024 blueprint proposed a standardised multilateral connection among domestic instant-payment systems, using common APIs and ISO 20022 messages, with payments reaching recipients within 60 seconds in most cases.⁴⁶ Following the 2024 plan involving India and four Southeast Asian partners, Nexus Global Payments was established in 2025 by the central banks of India, Malaysia, the Philippines, Singapore and Thailand; Indonesia joined in 2026.⁴⁷ Nexus could reduce the need for a separate technical link for every corridor, but fast routing will not, by itself, settle questions of FX pricing, consumer liability, refunds, or cross-border complaints.

Finally, an online purchase from a foreign merchant may appear "retail" to the buyer but fall within India's payment-aggregator cross-border framework for imports. That framework adds merchant due diligence, collection-account, grievance-redress and dispute-management obligations.⁴⁸ These

⁴³ Reserve Bank of India. (2023, February 10). *Issuance of PPIs to foreign nationals/non-resident Indians (NRIs) visiting India* (RBI/2022-23/176). <https://rbi.org.in/scripts/NotificationUser.aspx?Id=12452&Mode=0>

⁴⁴ Reserve Bank of India. (2026). *Payments Vision 2028*. <https://rbidocs.rbi.org.in/rdocs/PublicationReport/Pdfs/PAYMENTSVISION2028270326500316AFADEB47259CB970132BA01304.PDF>

⁴⁵ Press Information Bureau. (2023, March 28). *Cross border real-time money transfers*. Government of India. <https://www.pib.gov.in/PressReleasePage.aspx?PRID=1911736>; Press Information Bureau. (2026, July 20). *Nearly 55.49 crore users onboarded on UPI as in June 2026*. Government of India. <https://www.pib.gov.in/PressReleasePage.aspx?PRID=2286608>

⁴⁶ Bank for International Settlements Innovation Hub. (2024). *Project Nexus: Enabling instant cross-border payments*. <https://www.bis.org/project/nexus>

⁴⁷ Reuters. (2024, July 1). *India, four SE Asia countries plan instant retail cross-border payments*. <https://www.reuters.com/markets/asia/india-four-se-asia-countries-plan-instant-retail-cross-border-payments-2024-07-01/>; Nexus Global Payments. (n.d.). *About Nexus*. Retrieved August 13, 2026, from <https://www.nexusglobalpayments.org/about-nexus/>

⁴⁸ Dharurkar, N. (2023). *Cross-border payment aggregators: Regulations and business use cases*. PwC India. <https://www.pwc.in/industries/financial-services/fintech/payments/cross-border-payment-aggregators-regulations-and-business-use-cases.html>

compliance and reconciliation burdens form a natural bridge to the low-value trade and MSME payments examined next.

2.5 MSME Trade Payments

For MSMEs, the payment is only one part of a larger compliance chain. An exporter may need to align the purchase order, invoice, shipping bill or service evidence, purpose code, bank credit and electronic record of export proceeds. Importers face a parallel chain involving the invoice, bill of entry and remittance. Banks and PA-CBs must also screen the parties and goods, apply foreign-exchange rules and reconcile the transaction with EDPMS or IDPMS. Each requirement can be justified, but mismatched identifiers and manual data entry create delay without improving risk detection.

Service exporters face a distinct evidentiary problem. Physical exports ordinarily generate shipping bills, customs declarations and transport records, while consulting, software development, freelance work, online instruction and other remotely delivered services may not produce an equivalent standardised record. The authorised dealer bank or PA-CB must nevertheless establish that the receipt relates to a legitimate service and is consistent with the declared purpose. In the absence of common evidence standards, providers may differ on whether an invoice, contract, platform statement, correspondence or proof of delivery is sufficient. This can delay recurring low-value receipts, even when the exporter, customer, and nature of the service are already familiar.

The burden is regressive because many costs are fixed. A request for additional documents, manual bank follow-up or a minimum wire fee is easier to absorb on a large corporate invoice than on a small shipment or freelance service payment. MSMEs also have less bargaining power over the FX spread and correspondent deductions. The amount received can differ from the invoice after platform commissions, refunds, intermediary charges and currency conversion, leaving an open entry that requires explanation even though the commercial transaction is genuine.

The PA-CB framework offers a more suitable channel for online trade. It permits authorised entities to facilitate import and export payments up to ₹25 lakh per unit of goods or services and requires separate import and export collection accounts, merchant due diligence, controls on prohibited goods, and FEMA reconciliation. This can make small e-commerce payments more accessible than traditional wire transfers. However, integration between the platform, PA-CB, authorised dealer and government systems determines whether the exporter still has to submit the same information repeatedly.⁴⁹

Friction can also arise before the first transaction. When onboarding a business, the bank or PA-CB must verify its legal existence, operating address, beneficial owners, business activity and expected payment pattern. The necessary records may be distributed across central, state, and local registration systems and may not always be available through reliable digital verification channels. The regulated entity must then conduct manual checks, while the merchant experiences longer onboarding and repeated requests for establishment and ownership documents. Better access to authoritative business registries and reusable verified business credentials could reduce this burden without lowering the standard of due diligence.

Timing creates another risk. Exporters are generally required to realise and repatriate the full value of exports within nine months, subject to the applicable rules and permitted extensions. Delayed customer payment, marketplace reserves, chargebacks or reconciliation errors can therefore become regulatory issues. The rule protects foreign-exchange accountability, but the operating system should distinguish commercial delay and low-risk data mismatch from deliberate non-realisation.⁵⁰

A more proportionate model would capture structured data once and reuse it. The invoice number, Importer Exporter Code, purpose code, currency, payer, platform fee, and shipping or service

⁴⁹ Reserve Bank of India. (2023, October 31). Regulation of Payment Aggregator - Cross Border (PA-CB) (RBI/2023-24/80). <https://rbi.org.in/Scripts/NotificationUser.aspx?Id=12561>

⁵⁰ Reserve Bank of India. (2016). Master Direction - Export of goods and services, as amended. https://systemhealth.rbi.org.in/Scripts/BS_ViewMasDirections.aspx_id%3D10200.html

reference could accompany the payment and be automatically matched against EDPMS, IDPMS, and electronic bank realisation records. The intensity of review should also reflect the merchant's transaction history, the counterparty and jurisdiction, the value and frequency of payments, the product or service involved, deviations from expected activity and the availability of independently verifiable records. Familiar and consistently low-risk transactions could receive streamlined treatment, while unusual values, jurisdictions, goods, services or counterparties would trigger enhanced review. Standard APIs should also allow an MSME to see which document or field is missing and which institution is responsible for resolving it.

Policy should also address price transparency and competition. Providers should disclose the reference exchange rate, spread, fixed fees, expected intermediary deductions and settlement time before the exporter selects the channel. Aggregated corridor data could reveal whether small businesses pay materially more than large firms for the same currency pair. The goal is not to exempt MSMEs from compliance, but to convert compliance from an unpredictable branch-level process into a standardised digital workflow.

2.6 India's Performance Baseline

India's performance should be measured against the G20 objectives of cost, speed, access, transparency and reliability. For retail cross-border payments, the Financial Stability Board (FSB) aims for a global average cost no higher than 1 per cent and a corridor no higher than 3 per cent by end-2027. For remittances, the global goal remains an average below 3 per cent and no corridor above 5 per cent. The speed target seeks 75 per cent of retail payments and remittances to reach the recipient within one hour, with the remainder within one business day. These are global rather than India-specific targets, but they provide a consistent benchmark.⁵¹

On cost, India performs well in several high-volume digital remittance corridors, yet older RBI analysis placed the average cost of receiving remittances in India at 5.01 per cent in the first quarter of 2024. The variation between the low-cost US and UK corridors and more expensive or cash-dependent routes is the central finding. India lacks a consolidated public measure of the total cost of travel, merchant, and MSME payments once FX margins and intermediary deductions are accounted for.

In terms of speed, domestic infrastructure is a major strength. UPI processed 24,161.69 crore transactions worth ₹314.23 lakh crore in FY 2025-26, demonstrating scale, availability and user familiarity. Bilateral fast-payment links show that near-real-time cross-border initiation is possible. However, there is insufficient public evidence on the percentage of Indian remittances, overseas merchant payments, and MSME receipts completed end-to-end within one hour. Domestic switch speed should not be used as a proxy for cross-border completion.⁵²

On access, India's extensive bank account and QR payment base strengthens the receiving and domestic merchant sides. Gaps remain in overseas merchant coverage, sending-country access, cash-out availability and support for foreign visitors. On transparency, users often lack a standard pre-transaction display of total fees, exchange-rate margin, expected amount received, completion time and refund treatment. On reliability, public data on cross-border success rates, reversal times, fraud, complaints and settlement outages remain limited.

The FSB's 2025 assessment concluded that extensive international policy work had not yet produced sufficient improvement for end users and that the 2027 timetable was unlikely to be met globally. India reflects the same implementation gap, but from a more favourable starting position. It has strong domestic rails, a clear foreign-exchange authority, a regulated banking system and growing

⁵¹ Financial Stability Board. (2025). G20 targets for enhancing cross-border payments. <https://www.fsb.org/work-of-the-fsb/financial-innovation-and-structural-change/cross-border-payments/g20-targets-for-enhancing-cross-border-payments-2/>

⁵² Ministry of Finance, Government of India. (2026, July 20). Nearly 55.49 crore users onboarded on UPI as in June 2026 [Press release]. Press Information Bureau. <https://www.pib.gov.in/PressReleasePage.aspx?PRID=2286608&lang=2®=48>

international partnerships. Its weakness is that outcomes are not yet measured consistently across the full transaction chain.⁵³

The immediate priority is therefore a national cross-border payments scorecard. It should publish corridor and use-case data on total price, completion time, access points, transaction success, reversals, fraud, complaints and reciprocity. The RBI, authorised dealers, NPCI, NIPL, PA-CBs and consumer-facing providers should agree on common definitions to ensure comparable performance. This baseline would allow India to identify where regulation is protective, where processes are duplicative, and where UPI or other digital public infrastructure can make a targeted contribution without being treated as a universal solution.

⁵³ Financial Stability Board. (2025, October 9). G20 roadmap for cross-border payments: Consolidated progress report for 2025. <https://www.fsb.org/2025/10/g20-roadmap-for-cross-border-payments-consolidated-progress-report-for-2025/>

CHAPTER

03

Trust, Risk and the Role of Friction

Understanding the friction that protects the system, the friction that hinders it, and how the right balance can build trust and enable seamless cross-border payments.



This chapter examines the frictions through which legitimate safeguards are implemented. Friction is not inherently a defect. Identity checks, sanctions controls, foreign-exchange rules and security reviews protect the system. The policy failure arises when those controls are repetitive, opaque, poorly targeted or impossible for the user to navigate.⁵⁴

An Indian cross-border transaction is rarely governed solely by Indian law. A remittance may begin at a foreign money-transfer operator, pass through one or more banks, settle in another currency and end in an Indian account. A traveller's purchase can involve an Indian issuer, a global or bilateral acceptance arrangement, a foreign acquirer and an overseas merchant. An MSME receipt adds invoice, customs, tax and foreign-exchange records. Each participant sees only part of the chain, but each may stop it. The resulting delays are therefore best understood as failures of coordination across institutions and jurisdictions, rather than as a single slow rail.

3.1 Mapping Friction Across India's Cross-Border Payment Journey

For Indian users, cross-border friction appears at three linked layers:

- **Permission:** whether the payment is allowed under the Foreign Exchange Management Act (FEMA) within the applicable limit and supported by the correct purpose and documents.
- **Integrity:** whether the customer, counterparty and transaction satisfy KYC, AML/CFT, sanctions and fraud controls.
- **Execution:** whether the payment can be routed, converted, settled, posted, reconciled and reversed. A transaction may clear one layer and fail at another. This explains why a payment described as “instant” at initiation can remain unusable at the beneficiary end.

At initiation, individuals and firms are asked to establish identity, residence, account ownership and purpose. The requirement is sound, but the same facts may be entered separately into a bank, a platform, and a payment aggregator. Banks and payment providers require customers to select an RBI-prescribed purpose code that identifies the reason for the cross-border payment, such as travel, education, family maintenance, or payment for imported services. These classifications can be difficult for users to interpret, particularly where several categories appear applicable. Institutions may also request different supporting documents for commercially similar transactions, increasing the likelihood of incorrect classification, additional queries, and processing delays. For MSMEs, a minor mismatch between an invoice, shipping record, bank reference and EDPMS or IDPMS entry can turn a genuine payment into a manual reconciliation case. RBI's PA-CB framework brings online import and export facilitators within a clearer regulatory perimeter, but it also makes coordination between the aggregator, authorised dealer and monitoring systems central to the user experience.⁵⁵

During routing and conversion, participants may screen the same parties more than once, apply different message formats and request repair of incomplete or unstructured fields. Processing may also depend on banking and foreign-exchange operating windows. Funds received after a cut-off may be deferred to the next processing period even when the payment instruction is moved immediately. The payer often cannot see whether a hold arises from foreign exchange, sanctions, liquidity, an operating window, a correspondent query or the beneficiary bank. Fixed fees, exchange-rate margins and intermediary deductions may also be disclosed at different points. The user therefore experiences one payment while the industry manages a sequence of bilateral relationships.

The last stage is posting and redress. A beneficiary bank may need to match the incoming message to an account, purpose or underlying trade record. Returns and refunds travel through the chain in reverse and may be converted at a new exchange rate. Complaints are harder because the contractual

⁵⁴ Ahmed, S., Chauriha, S., & Rai, S. (2024). Addressing regulatory frictions in cross-border payments. Vidhi Centre for Legal Policy. <https://vidhilegalpolicy.in/research/addressing-regulatory-frictions-in-cross-border-payments/>

⁵⁵ Reserve Bank of India. (2023). Regulation of Payment Aggregator – Cross Border (PA-CB) (RBI/2023-24/80). <https://rbi.org.in/Scripts/NotificationUser.aspx?Id=12561&Mode=0>

customer of the sending provider and the person experiencing the loss may be in different countries. Friction is especially regressive for low-value payments: the cost of a document request, manual review or complaint does not fall proportionately with transaction value. India's policy baseline should consequently measure completion, repair, return and complaint times by use case and corridor, not merely the speed of the initial message.

3.2 Regulatory Divergence and AML/CFT Compliance

India's KYC and wire-transfer framework seeks accurate originator and beneficiary information, traceability through intermediary institutions and enhanced scrutiny where risk is higher. These are core conditions for confidence in cross-border payments.⁵⁶ The practical difficulty is that a payment chain must satisfy several implementations of the same international objectives. Jurisdictions can differ on data fields, thresholds, treatment of intermediaries, reliance on another institution's due diligence, record retention and the point at which missing information requires rejection rather than repair.

The revised FATF Recommendation 16 is intended to reduce some of this divergence by clarifying responsibility in the payment chain, standardising information that accompanies a transfer and adapting the rules to new payment providers. It also places greater emphasis on tools that can reduce fraud and error.⁵⁷ Implementation will nevertheless occur through national law and supervisory practice. For an Indian institution, formal conformity with FATF standards does not answer whether a partner country accepts the same identifier, interprets the same risk indicator similarly or permits the necessary data to be shared in time.

India's 2024 FATF mutual evaluation recorded strong technical compliance, including a compliant rating for wire transfers and correspondent banking.⁵⁸ This is an institutional strength. It should not, however, be confused with uniform operational outcomes. A risk-based framework necessarily leaves judgement to regulated entities. When supervisory expectations are unclear, that discretion can produce defensive compliance characterised by blanket document requests, conservative de-risking or repeated escalation of low-risk transactions. Smaller banks, fintechs and payment aggregators may also depend on larger banks for access, creating a second layer of due diligence and commercial gatekeeping.

The global problem is similar. The FSB finds that inconsistent regulation of bank and non-bank payment service providers raises compliance complexity and can restrict access or competition.⁵⁹ The effect in India is most visible where a non-bank provides the customer interface but an authorised dealer retains foreign-exchange and settlement responsibilities. Accountability can become fragmented unless the corridor rulebook specifies which participant verifies each field, who may rely on that verification, when a payment may proceed and who must communicate a hold to the user.

A more proportionate Indian approach would retain full controls while standardising their operation. RBI and industry should define a corridor-ready minimum data set aligned with harmonised ISO 20022 requirements; publish clearer evidence expectations for common low-value purposes; allow verified data to be reused with consent; and require enhanced review when risk indicators, rather than provider type alone, justify it. Bilateral arrangements should map legal differences before launch and document how participants will handle incomplete information, screening alerts and regulatory

⁵⁶ Reserve Bank of India. (2016). Master Direction – Know Your Customer (KYC) Direction, 2016 (as amended). <https://www.rbi.org.in/commonman/english/scripts/notification.aspx?id=2607>

⁵⁷ Financial Action Task Force. (2025). Update to Recommendation 16 on payment transparency. <https://www.fatf-gafi.org/en/publications/Fatfrecommendations/update-Recommendation-16-payment-transparency-june-2025.html>

⁵⁸ Financial Action Task Force. (2024). Anti-money laundering and counter-terrorist financing measures: India. <https://www.fatf-gafi.org/en/countries/detail/India.html>

⁵⁹ Financial Stability Board. (2024). Recommendations for regulating and supervising bank and non-bank payment service providers offering cross-border payment services: Final report. <https://www.fsb.org/2024/12/recommendations-for-regulating-and-supervising-bank-and-non-bank-payment-service-providers-offering-cross-border-payment-services-final-report/>

requests. The FSB's work on alignment of cross-border data frameworks supports this shift from broad harmonisation claims to specific, testable data and legal pathways.⁶⁰

3.3 Sanctions, Fraud and Financial Integrity Risks

Sanctions screening illustrates why necessary controls can generate avoidable delay. Institutions may screen names, countries, vessels, banks and transaction narratives against several lists. Variations in list format, identifiers, transliteration and update timing create false matches, particularly for common names. A CPMI monitoring survey found that between 5 and 10 per cent of cross-border payments can generate compliance alerts and that the overwhelming majority are false positives; structured data could materially reduce them.⁶¹ These global estimates should not be treated as an India-specific rate, but they show why better data quality matters as much as faster processing.

The answer is not to weaken screening. India should support standardised machine-readable sanctions lists, reliable identifiers and secure information-sharing between authorised participants. The FSB has similarly called for more consistent list formats and identifiers because poor implementation can add cost without improving detection.⁶² Institutions should record the reason for a hold and distinguish a confirmed legal prohibition from a possible match requiring clarification. The customer need not receive sensitive screening logic, but they should receive a meaningful status, an expected review time and a route for supplying corrective information.

Fraud creates a different allocation problem. Faster payments reduce the time available to recover funds after impersonation, account takeover or authorised push-payment scams. Cross-border recovery is harder when the receiving institution, law-enforcement contact and governing liability rules sit abroad. Payment pre-validation can check whether account details, beneficiary identity and message fields are valid before funds move, reducing errors, returns and some forms of fraud.⁶³ Its value depends on interoperability and on clearly defined access to verification services.

Redress remains fragmented. RBI's Integrated Ombudsman Scheme covers complaints against entities within its regulatory perimeter and generally requires the customer first to approach the regulated entity. It cannot by itself compel an overseas merchant, foreign acquirer or unregulated participant to resolve the case.⁶⁴ Every corridor arrangement should therefore include a shared fraud-notification channel, preservation and recall procedures, time-bound hand-offs and a liability matrix. For the user, there should be one complaint entry point and one transaction reference; institutional responsibility can be apportioned behind that interface.

3.4 Data Privacy, Localisation and Cybersecurity

Cross-border payments depend on moving enough data to identify parties, screen risk, route funds and support complaints. They also create a concentrated record of financial behaviour. India's data architecture must therefore reconcile three objectives: domestic regulatory access, lawful international exchange and protection against misuse or breach.

⁶⁰ Financial Stability Board. (2024). Recommendations to promote alignment and interoperability across data frameworks related to cross-border payments: Final report. <https://www.fsb.org/2024/12/recommendations-to-promote-alignment-and-interoperability-across-data-frameworks-related-to-cross-border-payments-final-report/>

⁶¹ Committee on Payments and Market Infrastructures. (2025). Moving on up: Results of the 2024 cross-border payments monitoring survey (CPMI Brief No. 10). Bank for International Settlements. <https://www.bis.org/cpmi/publ/brief10.pdf>

⁶² Financial Stability Board. (2024). Recommendations to promote alignment and interoperability across data frameworks related to cross-border payments: Final report. <https://www.fsb.org/2024/12/recommendations-to-promote-alignment-and-interoperability-across-data-frameworks-related-to-cross-border-payments-final-report/>

⁶³ Committee on Payments and Market Infrastructures. (2026). Safety and efficiency through payment pre-validation: Spotting issues before money moves (CPMI Brief No. 9). Bank for International Settlements. <https://www.bis.org/cpmi/publ/brief9.pdf>

⁶⁴ Reserve Bank of India. (2026). Frequently asked questions: Reserve Bank – Integrated Ombudsman Scheme, 2026. <https://www.rbi.org.in/commonperson/english/scripts/FAQs.aspx?id=3407>

RBI's storage framework requires payment-system data relating to India to be stored in India, while permitting foreign portions of cross-border transactions to be stored abroad and providing a route for sharing data with an overseas regulator subject to approval.⁶⁵ The Digital Personal Data Protection Act adds economy-wide duties concerning lawful purpose, notice, security and accountability. It permits the government to restrict transfers to notified countries and preserves stricter sectoral requirements.⁶⁶ The notified Rules introduce phased implementation, so payment providers must manage transition as well as the continuing application of RBI directions.⁶⁷

These requirements need not prevent interoperability, but uncertainty can. A provider operating across jurisdictions may face conflicting rules on localisation, disclosure to foreign supervisors, retention, fraud monitoring and data-subject rights. If participants are unsure whether a field may be transferred, they may omit information that another institution needs for automated compliance. Conversely, sending the complete customer record "just in case" increases privacy and cyber risk. The objective should be purposeful sufficiency: the minimum accurate data required for the defined payment, available to the authorised participant at the right time.

India should pursue corridor-specific legal pathways for data sharing, supported by common classifications and auditable access. The FSB recommends identifying data-framework misalignments and creating workable mechanisms for cross-border flows and regulatory cooperation, while considering the cost and access consequences of localisation.⁶⁸ Contracts and scheme rules should specify purpose limitation, retention, onward transfer, breach notification and regulator access. Technical controls should include encryption in transit and at rest, tokenisation of identifiers where feasible, strong authentication, least-privilege access and tamper-evident logs.

The use of cloud infrastructure does not by itself determine whether data sovereignty or regulatory oversight is preserved. What matters is whether the architecture provides enforceable data-residency controls, customer-controlled encryption keys, comprehensive access logs, continuous configuration monitoring and audit access for the regulated entity and regulator. These safeguards should be independently verifiable and supported by portability, exit and service-continuity arrangements.

Cybersecurity must also be treated as a shared-chain risk. An Indian participant can secure its own interface while remaining exposed to a weaker foreign processor or merchant environment. Corridor governance should require common incident thresholds, rapid notification, joint exercises and the ability to suspend a compromised participant without disabling the whole link. Trust depends not only on preventing failure but also on containing it and explaining how service will be restored.

3.5 Necessary and Avoidable Friction

The useful policy distinction is not between friction and frictionless payments. It is between controls that produce a measurable protective outcome and process burdens that add uncertainty without commensurate risk reduction. This distinction should be assessed according to the function performed rather than the document or procedure used. Verifying identity, beneficial ownership, transaction purpose and sanctions exposure serves a clear financial-integrity purpose. Collecting the same verified information repeatedly or requiring different forms of evidence for the same fact does not necessarily strengthen that purpose. A safeguard is more likely to be legitimate when it is

⁶⁵ Reserve Bank of India. (2018). Storage of payment system data (RBI/2017-18/153). <https://rbi.org.in/Scripts/NotificationUser.aspx?Id=11244>

⁶⁶ Government of India. (2023). The Digital Personal Data Protection Act, 2023. <https://www.meity.gov.in/static/uploads/2024/06/2bf1f0e9f04e6fb4f8fef35e82c42aa5.pdf>

⁶⁷ Ministry of Electronics and Information Technology. (2025). Digital Personal Data Protection Rules, 2025 notified. Press Information Bureau. <https://www.pib.gov.in/PressReleasePage.aspx?PRID=2190014®=48&lang=2>

⁶⁸ Financial Stability Board. (2024). Recommendations to promote alignment and interoperability across data frameworks related to cross-border payments: Final report. <https://www.fsb.org/2024/12/recommendations-to-promote-alignment-and-interoperability-across-data-frameworks-related-to-cross-border-payments-final-report/>

grounded in law, proportionate to risk, consistently applied, visible to the responsible participant and accompanied by review or redress.⁶⁹

Payment stage	Necessary safeguard	Avoidable friction and reform response
Identity and onboarding	Verified identity, account ownership and risk-based due diligence	Repeated KYC and inconsistent evidence. Reuse verified data with consent.
AML and sanctions	Traceable parties, screening and escalation of credible matches	Duplicate checks and opaque false positives. Standardise data and reason codes.
FX and purpose	Permissibility, limits and evidence for the underlying transaction	Unclear purpose codes and branch variation. Publish common evidence rules.
Data governance	Lawful minimum sharing, security and regulator access	Over-collection or blocked transfers. Define corridor-specific data pathways.
Execution and reconciliation	Accurate routing, foreign-exchange conversion, liquidity, settlement finality and record matching	Restricted operating windows, manual repair and status gaps. Extend processing where feasible and disclose cut-offs and delays.
Fraud and redress	Rapid notification, recall, liability and fair remedy	Multiple complaint doors and unclear ownership. Provide one entry point and service standards.

Table 2: Necessary versus Avoidable Frictions

This test should be applied at both corridor and transaction level. The same control may be proportionate for a high-risk corporate payment and excessive for a low-value, repetitive family remittance. Review intensity should reflect the customer or merchant's history, the counterparty and jurisdiction, transaction value, product or service category, frequency, consistency of behaviour and availability of independently verifiable records. Simplification should not mean exemption. It should mean that verified facts travel with the payment, familiar low-risk cases are processed with fewer repeated checks, exceptions are explainable and enhanced scrutiny is concentrated where risk indicators justify it. Regulators can then compare institutions on both integrity and user outcomes, including alert quality, false positives, document requests, manual reviews, repair rates, complaint time and confirmed fraud loss.

3.6 Implications for India: From Friction to Trusted Interoperability

India's priority should be to convert cross-border compliance from a sequence of institutional judgements into a governed digital workflow. The first building block is a common payment data taxonomy covering parties, purpose, currency, fees, invoice or remittance reference and status. It should align with ISO 20022 but also map Indian requirements such as FEMA purpose codes and trade-system references. The CPMI's harmonised ISO 20022 requirements provide a global baseline; India should publish the additional domestic fields and the conditions under which each is required.⁷⁰

Second, providers should offer pre-validation before authorisation. A payer or business should be told whether the beneficiary details, purpose, corridor, limit and required evidence are valid before money

⁶⁹ Ahmed, S., Chauriha, S., & Rai, S. (2024). Addressing regulatory frictions in cross-border payments. Vidhi Centre for Legal Policy. <https://vidhilegalpolicy.in/research/addressing-regulatory-frictions-in-cross-border-payments/>

⁷⁰ Committee on Payments and Market Infrastructures. (2023). Harmonised ISO 20022 data requirements for enhancing cross-border payments. Bank for International Settlements. <https://www.bis.org/cpmi/publ/d218.htm>

leaves the account. The same interface should disclose the exchange-rate margin, fixed and intermediary fees, expected amount received, delivery window and refund treatment. After initiation, a standard status taxonomy should distinguish screening, foreign-exchange, settlement, beneficiary posting and reconciliation holds. This would make delay diagnosable rather than merely visible.

Third, India should build corridor governance around clear allocation of responsibility. RBI and the relevant foreign authority should agree the supervisory and data-sharing basis; scheme rules should allocate KYC reliance, sanctions decisions, fraud notification, liquidity, settlement finality, refunds and complaints; and participants should be tested before launch. PA-CBs and authorised dealer banks need interoperable interfaces with EDPMS and IDPMS so that low-value trade data is captured once and reconciled automatically.⁷¹

UPI and India's wider digital public infrastructure can make a valuable but bounded contribution. UPI can provide a familiar initiation and authentication layer, interoperable addressing and immediate domestic notification in corridors where acceptance or remittance arrangements exist. Reusable, consent-based verification can reduce repeated onboarding. These capabilities do not themselves provide foreign exchange, cross-border settlement, sanctions compliance, overseas merchant acquiring or legal redress. Treating UPI as one modular component of a corridor architecture, rather than as the complete solution, will make India's international proposition more credible.

Finally, India should publish performance at the level at which users experience it. A national scorecard should report total cost, completion time, repair and return rates, false-positive alerts, fraud, complaint resolution and access by corridor and use case. The CPMI's monitoring work shows that exception and investigation fields remain heavily unstructured and that manual touchpoints persist across global payment chains.⁷² India can use its strong domestic data and public-infrastructure capacity to demonstrate a better model: safeguards that are traceable, proportionate and measurable.

The goal is not frictionlessness, but proportionate safeguards and clear responsibility. That combination would support India's remittance, travel and MSME-payment interests while giving its digital public infrastructure a trust proposition that can cross jurisdictions.

⁷¹ Reserve Bank of India. (2023). Regulation of Payment Aggregator – Cross Border (PA-CB) (RBI/2023-24/80). <https://rbi.org.in/Scripts/NotificationUser.aspx?Id=12561&Mode=0>

⁷² Committee on Payments and Market Infrastructures. (2025). Moving on up: Results of the 2024 cross-border payments monitoring survey (CPMI Brief No. 10). Bank for International Settlements. <https://www.bis.org/cpmi/publ/brief10.pdf>

CHAPTER

04

DPI and UPI as Foundations for Cross-Border Interoperability

Exploring how India's digital public infrastructure and UPI can support cross-border interoperability, while recognising where domestic success cannot simply be replicated across jurisdictions.



India's cross-border proposition is sometimes reduced to "taking UPI global". That description is too narrow. The more consequential proposition is a method for building shared digital systems consisting of modular components, common interfaces, public-interest governance and room for regulated public and private providers to innovate. This chapter examines where that approach can improve cross-border retail payments and where domestic success cannot simply be reproduced abroad.

4.1 India's DPI Approach

From infrastructure to institutional design

The G20 defines digital public infrastructure (DPI) as shared digital systems built from secure, interoperable and reusable components and governed for broad public benefit. "Public" describes the function and governance of the infrastructure, not a requirement that every component be state-owned. Technology, governance and the participating community must therefore be considered together. India's relevant contribution is not a single product but an institutional design in which common rails support competing banks, applications and service providers.⁷³

Payment-relevant layers

India's DPI model brings together four functions that are relevant to payments. First, digital identity allows a provider to establish who a customer is. Second, consent-based data-sharing systems allow customers to authorise the transfer of specified information between regulated entities. Third, interoperable payment rails enable banks and payment applications to exchange payment instructions through a common system. Fourth, common technical standards and APIs make it easier for different institutions to connect without building a separate interface for every participant.

Aadhaar Paperless Offline e-KYC illustrates the identity function. It allows an individual to share selected, digitally signed identity information without disclosing the Aadhaar number or giving the receiving entity access to core biometric data. The Account Aggregator framework performs a different function: it allows a customer to authorise the transfer of financial information from one regulated institution to another, while preventing the aggregator from using or owning that information. Neither system processes cross-border payments. Their relevance lies in demonstrating how identity verification and data-sharing can be designed as reusable services rather than repeated separately by every provider.⁷⁴

Applying this approach internationally would not require foreign payment providers to access Aadhaar or India's Account Aggregator network. Instead, participating jurisdictions could agree on what customer and transaction information must accompany a payment, how that information will be authenticated, and which technical formats will be used to exchange it. Each jurisdiction would continue to decide which credentials it recognises, where data may be stored and which institutions it supervises. The objective is therefore interoperability between trusted domestic systems, not the extension of one country's identity or data infrastructure into another.

⁷³ Group of Twenty. (2023). *G20 framework for systems of digital public infrastructure*. <https://g7g20-documents.org/database/document/2023-g20-india-sherpa-track-digital-economy-ministers-ministers-language-g20-digital-economy-ministers-meeting-outcome-document-and-chair-summary>

⁷⁴ Unique Identification Authority of India. (n.d.). *Aadhaar Paperless Offline e-KYC*. Retrieved August 18, 2026, from <https://uidai.gov.in/en/2-uncategorised/11320-aadhaar-paperless-offline-e-kyc-3.html>; Reserve Bank of India. (2016). *Master Direction – Non-Banking Financial Company – Account Aggregator (Reserve Bank) Directions, 2016*. https://www.rbi.org.in/Scripts/BS_ViewMasDirections.aspx?id=10598

4.2 What UPI Can Contribute to Cross-Border Payments

A common initiation layer

UPI gives a payer a simple way to address an account through a virtual payment address, mobile-linked identifier or QR code. It operates continuously, supports low-value person-to-person and merchant payments, and permits users of different banks and applications to transact through a common scheme. When connected to an overseas arrangement, these features can replace manual entry of account details and give travellers or remittance users a familiar authentication flow. They can also widen participation because an Indian bank or app can connect through common UPI specifications rather than negotiate a separate consumer interface for every counterparty.⁷⁵

A bounded contribution

UPI's strength lies at the payment edge, particularly in addressing, initiation, authentication and confirmation. A cross-border transaction still needs an authorised provider to quote and convert currency, fund settlement, apply corridor rules and deliver final funds through the receiving system. The foreign merchant or beneficiary must also be reachable through a participating acquirer or fast-payment scheme. Thus, UPI can make a corridor easier to use without itself becoming the foreign-exchange market, settlement asset or legal rulebook. This boundary is central to credible DPI diplomacy because it permits partners to adopt a useful interface without surrendering monetary or regulatory control.

4.3 Models of International Payment Connectivity

FPS interlinking

An interlink connects two domestic fast-payment systems while each continues to serve its own participants under local rules. UPI-PayNow is the clearest Indian example demonstrating how participating institutions translate the payer's UPI identifier or mobile number into the receiving system, display the exchange rate and complete eligible person-to-person remittances. A multilateral model such as Nexus replaces repeated bilateral engineering with a common scheme, APIs and ISO 20022 specifications. Nexus is now in implementation rather than live operation, with its first go-live targeted for 2027.⁷⁶

Merchant and QR acceptance

In the acceptance model, an Indian user scans an enabled overseas merchant's QR or presents a UPI payment through an Indian app. A foreign acquirer connects participating merchants to NIPL and the Indian UPI ecosystem. The consumer interface can travel across borders while the host country's acquiring, merchant and foreign-exchange arrangements remain in place. National QR interoperability goes beyond establishing a separate UPI acceptance network in the partner country. Cambodia's Khmer Quick Response (KHQR) is an EMV-based national QR standard developed by the National Bank of Cambodia. It operates on a "one QR for all" principle. A merchant can display a single

⁷⁵ National Payments Corporation of India. (2026). *BHIM UPI guidelines 2026*. https://www.npci.org.in/uploads/BHIM_UPI_Guidelines_2026_012a0b1bce.pdf

⁷⁶ Reserve Bank of India. (2023, February 21). *UPI-PayNow linkage*. https://www.rbi.org.in/Scripts/BS_PressReleaseDisplay.aspx?prid=55260; Bank for International Settlements Innovation Hub. (2024). *Nexus: Enabling instant cross-border payments*. <https://www.bis.org/publ/othp86.htm>; Nexus Global Payments. (2026, February 9). *Nexus Global Payments appoints technical operator*. <https://nexusglobalpayments.org/nexus-global-payments-appoints-technical-operator/>

KHQR code and receive payments from customers of different participating Cambodian banks and payment service providers through the country's Bakong payment ecosystem.

Under the first phase of the India–Cambodia linkage, launched in June 2026 by NIPL and ACLEDA Bank, Indian visitors can scan participating Cambodian merchants' existing KHQR codes using supported UPI applications.⁷⁷ The Government of India stated that the arrangement extended UPI acceptance to more than 4.5 million Cambodian merchants. Merchants therefore do not need to display a separate UPI QR code or establish an individual relationship with every Indian payment application.⁷⁸ The linkage connects the Indian user's UPI interface to Cambodia's existing merchant-acceptance infrastructure, while KHQR, Bakong and Cambodian institutions continue to govern domestic merchant participation and payment processing. A subsequent phase is intended to allow Cambodian users to scan UPI QR codes when visiting India.⁷⁹

Domestic infrastructure deployment

A third model is the deployment of a UPI-like platform as another country's domestic infrastructure. Trinidad and Tobago's agreement with NIPL envisages a sovereign system owned by the government, with local skills transfer and support for person-to-person, merchant and government payments. This is technology cooperation rather than an immediate cross-border link. Its value is strategic: systems constructed on compatible principles may be easier to interconnect later, provided compatibility is maintained and participation remains a local decision.⁸⁰

4.4 India's Bilateral Payment Partnerships

The arrangements below show that “UPI abroad” covers distinct architectures and degrees of reciprocity.

Partner	Architecture	Coverage and use case	Regulatory model
Singapore	FPS interlink: UPI-PayNow	Reciprocal P2P gifts and family maintenance; ₹60,000 daily cap ⁸¹	RBI-MAS arrangement; participating banks and non-banks
UAE	Foreign-acquirer merchant acceptance	Indian UPI apps at enabled Network International POS and QR merchants ⁸²	NIPL-acquirer link under UAE acquiring rules
Nepal	QR acceptance plus NPIX pathway	Indian P2M live; reciprocal P2M approved; P2P testing at report date ⁸³	RBI-NRB cooperation; NRB-authorised PSOs and switches

⁷⁷ National Bank of Cambodia. (n.d.). The next-generation mobile payments and banking. Retrieved August 18, 2026, from <https://bakong.nbc.gov.kh/en/>

⁷⁸ Press Information Bureau. (2026, June 3). NPCI International and ACLEDA Bank launch cross-border UPI payments in Cambodia via KHQR, Cambodia's national QR code. Government of India. <https://www.pib.gov.in/PressReleasePage.aspx?PRID=2268591>

⁷⁹ Khmer Times. (2025, March 20). Revolutionizing Cambodia's FinTech: How NBC's Bakong is shaping the future of digital payments. <https://www.khmertimeskh.com/501656647/revolutionizing-cambodias-fintech-how-nbcs-bakong-is-shaping-the-future-of-digital-payments/>

⁸⁰ Ministry of Public Administration and Artificial Intelligence, Government of Trinidad and Tobago. (2024, September 27). *Ministry signs agreement for real-time payment platform*. <https://mpaai.gov.tt/news/ministry-signs-agreement-real-time-payment-platform>

⁸¹ Reserve Bank of India. (2023, February 21). *UPI-PayNow linkage: Frequently asked questions*. <https://www.rbi.org.in/commonman/english/scripts/FAQs.aspx?Id=3415>

⁸² Network International. (2024, July 3). *Network International partners with NPCI International to enable UPI QR payment acceptance across its merchants in the UAE*. <https://www.network.ae/en/about-us/press-and-media/news/network-international-partners-with-npci-international-to-enable-upi-qr-payment-acceptance-across-its-merchants-in-the-uae>

⁸³ Nepal Rastra Bank. (2026). *Payment systems oversight report 2024/25*. <https://www.nrb.org.np/psd/payment-systems-oversight-report-2081-82-2024-2025/>

Partner	Architecture	Coverage and use case	Regulatory model
Bhutan	UPI Global QR with RMA acquiring	Indian P2M live; reciprocal Phase II planned ⁸⁴	Central-bank-led rollout under RMA rules
Mauritius	UPI QR and RuPay linkage	Indian P2M at participating merchants; Mauritian RuPay use in India ⁸⁵	Central-bank-backed link through participating banks and acquirers
France	NIPL-Lyra merchant acceptance	Selected tourism and retail sites; about 9,000 transactions by June 2026 ⁸⁶	Commercial acquirer agreement within French and EU rules
Cambodia	UPI-KHQR interoperability via ACLEDA	Phase 1 Indian P2M; reciprocal phase planned ⁸⁷	Central-bank-supported national QR linkage

Table 3: India's Bilateral Payment Partnerships

The comparison yields three lessons. First, the legal and commercial anchor differs by model. Central banks and scheme operators lead FPS links, while foreign acquirers are decisive for merchant acceptance. Second, reciprocity is usually phased rather than automatic. Bhutan and Cambodia began with payments by Indian visitors, while the reverse direction was planned separately. Third, the announcement of geographic expansion is a weak measure of interoperability. The more useful indicators are participating providers, enabled merchants, permitted use cases, directional coverage and actual transaction completion.

4.5 Conditions for Successful DPI Internationalisation

Local ownership and reciprocal governance

Internationalisation is more durable when the partner regulator and domestic operator can adapt the system, approve participants and enforce the rulebook. Agreements should allocate change control, audit rights, incident responsibilities, intellectual-property use and an orderly exit. Where India supplies a domestic payment stack, source-code access, documentation and skills transfer can protect the partner's operational sovereignty. Where systems are merely linked, joint governance should give each authority a defined voice without allowing one corridor participant to dictate standards.

Cross-border identity and merchant verification

Payment-system interoperability does not automatically make domestic identity or business records valid in another jurisdiction. An Indian provider onboarding a foreign merchant may need to verify the merchant's legal existence, beneficial ownership, authority to operate, business activity and sanctions exposure through overseas records. A foreign provider faces a similar problem when relying on Indian credentials. Direct access to another country's identity database may be legally restricted, technically impractical or inconsistent with local expectations concerning privacy and regulatory responsibility.

⁸⁴ Royal Monetary Authority of Bhutan. (n.d.). *Retail payment systems*. Retrieved August 18, 2026, from <https://www.rma.org.bt/rpSystem/>; Ministry of Foreign Affairs and External Trade, Royal Government of Bhutan. (2025, November). *Press release*. <https://www.mfa.gov.bt/press-release-725/>

⁸⁵ Bank of Mauritius. (2024, February 12). *Mauritius and India launch RuPay and Unified Payments Interface linkage*.

<https://www.bom.mu/media/media-releases/media-release-mauritius-and-india-launch-rupay-and-unified-payments-interface-linkage>
⁸⁶ Ministry of External Affairs, Government of India. (2026, July). *India-France bilateral brief*. <https://www.mea.gov.in/Portal/ForeignRelation/India-France-100726.pdf>

⁸⁷ Press Information Bureau. (2026, June 3). *NPCI International and ACLEDA Bank launch cross-border UPI payments in Cambodia via KHQR, Cambodia's national QR code*. <https://www.pib.gov.in/PressReleasePage.aspx?PRID=2268591>

A corridor should therefore identify which credentials each jurisdiction will recognise, which institutions may issue them and which verified fields may be shared. The framework should address consent, data minimisation, credential renewal, expiry and revocation, as well as liability where information is inaccurate or outdated. Reusable digital credentials could reduce repeated document submission, but recognition should not amount to automatic equivalence between national KYC systems. Each regulator should retain authority to require additional checks when the merchant, transaction or jurisdiction presents greater risk.

Technical and commercial readiness

Common APIs do not remove the need for conformance testing, resilient round-the-clock operations, accurate alias and QR mapping, settlement access and competitive foreign-exchange provision. Commercial design matters as much as technical design. Acquirers and payment providers need predictable remuneration, while participation criteria should not entrench a single app, bank, vendor or FX provider. Open standards, portability and transparent procurement can reduce switching costs and preserve contestability.

Safeguards must also operate throughout the infrastructure's life cycle, from design and procurement to operations and maintenance. The Universal DPI Safeguards Framework emphasises accountable governance, privacy, cybersecurity, inclusion and access to remedy; World Bank research similarly warns that poor technology and procurement choices can produce vendor lock-in and unsustainable systems. These concerns are not external constraints on DPI. They determine whether shared infrastructure remains trustworthy after the launch phase.⁸⁸

4.6 Limits and Risks of the DPI Proposition

Scale does not travel automatically

UPI's domestic scale rests on Indian conditions, including widespread bank-account access, mobile connectivity, a common scheme and sustained regulatory coordination. Another market may have different identification coverage, bank participation, merchant economics or consumer preferences. Small corridor volumes can make support, compliance and liquidity costly even when software integration is efficient. A platform may therefore be technically interoperable but commercially underused.

Sovereignty and concentration

Open interfaces do not by themselves prevent dependence. A partner may still rely on NIPL, a systems integrator, a cloud provider or a dominant acquirer for upgrades and incident recovery. Cross-border links can also concentrate operational risk. An outage, cyber incident or flawed update at a shared node can affect several markets at once. Mitigation requires modular procurement, independent testing, data-portability and exit provisions, local operational capability and credible fallback channels. It also requires restraint in how India frames its diplomatic proposition. DPI should be offered as adaptable infrastructure, not as a condition for adopting Indian governance choices.

The strongest proposition is therefore modular co-development, Combining local sovereignty over institutions and data, common standards where they lower connection costs, reciprocal rules for actual payment corridors and transparent measurement of use. UPI can be a reference implementation and a valuable interface within that model. Trust will depend on whether the surrounding governance remains as interoperable as the technology.

⁸⁸ United Nations Development Programme & United Nations Office for Digital and Emerging Technologies. (n.d.). *Universal DPI Safeguards Framework*. Retrieved August 18, 2026, from <https://www.dpi-safeguards.org/assessments>; World Bank. (2025). *Digital public infrastructure and development*. <https://openknowledge.worldbank.org/bitstreams/582c0d73-d367-423c-831d-0640814a7349/download>

CHAPTER

05

Lessons from Other Regions and Cross-Border Payment Models

Examining cross-border payment approaches across regions and systems, and identifying lessons for India as it seeks to improve efficiency, reduce costs and expand access.



Before we delve into this section, the evidence suggests that no single architecture can replace the established banking, card and domestic payment systems on which the global financial economy currently rests. Financial institutions and governments instead focus on rebuilding the various systems through a layered approach:

1. Fast-payment systems are evolving, and countries are increasingly finding methods to increase linkages across borders.
2. Bilateral agreements are increasingly being replaced by multilateral initiatives with common getaways and governance structure.
3. Banks and fintechs are exploring methods that shorten payment chains by connecting directly to domestic clearing systems.
4. Research and development in messaging standards and APIs is improving the data that travels with a payment.
5. Traditional central banks and commercial institutions are exploring tokenised settlements.

The core logic for improving cross-border payment systems rests on the idea that the strongest models solve a specific part of the payment chain without the assumption that every other layer must also be replaced.

Therefore, this chapter explores a central policy question which goes beyond “Which rail is fastest?” to “Which combination of initiation, data, foreign exchange compliance, and consumer protection can deliver a trustworthy, predictable, and accessible payment ecosystem?”

5.1 Bilateral Fast-Payment Linkages

Bilateral cooperation between domestic fast-payment systems reflects the idea that international retail payments do not always require a new global network. Rather than overhauling domestic payment infrastructure, this model connects the existing systems of the two jurisdictions. The benefit of this model is that it reduces the number of intermediaries in the payment chain and also allows users to access the benefits of the bilateral cooperation within the domestic interface, which they are already familiar with. It also allows each jurisdiction to have its own set of rules for access, settlement, and supervision, while having a separate agreed-upon set of cross-border rules for bilateral cooperation.

A good example of the above is the linkage between Thailand's PromptPay and Singapore's PayNow. This initiative was launched in April 2021, and it connected two real-time payment systems and initially allowed participating customers to send up to SGD 1,000 or THB 25,000 once a day using just their mobile numbers. To implement the linkage and make it a success, the Bank of Thailand and the Monetary Authority of Singapore coordinated this cooperation with the two countries' system operators, the bankers' associations, and participating banks. The key design feature of the system was that it combined familiar domestic payment systems with cross-border foreign exchange.⁸⁹

Additionally, jurisdictions in South Asia have moved beyond account-to-account remittance transfers and extended interoperability to merchant payments through cross-border QR arrangements. Malaysia, Thailand, Indonesia, and other regional markets have an interconnected payment system linked with their subsequent domestic QR standards so that travellers can pay merchants through a familiar system. Research by the International Monetary Fund on the Association of Southeast Asian Nations showcases that user growth is rapid in corridors where more financial institutions and merchants participate. This primarily happens because interoperability has a network effect; the

⁸⁹Monetary Authority of Singapore & Bank of Thailand. (2021, April 29). *Singapore and Thailand launch world's first linkage of real-time payment systems*. <https://www.mas.gov.sg/news/media-releases/2021/singapore-and-thailand-launch-worlds-first-linkage-of-real-time-payment-systems>

efficacy of a well -designed collaboration remains marginal if only a small set of banks or merchants are able to access it.⁹⁰

The success of this model depends on effective collaboration between the two countries and the common rules they establish on participant eligibility, foreign-exchange settlement and exception handling, which ultimately decides how effective the system will turn out to be. With regard to the same, the CPMI has similarly stressed that governance and oversight are key to successful interoperability.⁹¹

India's position and implication

India has already taken steps towards establishing bilateral payment linkages with other jurisdictions. In February 2023, India established a collaboration between UPI and Singapore's PayNow for instant cross-border person-to-person remittances. In addition to this, the Reserve Bank of India and the Central Bank of the United Arab Emirates have agreed to link UPI with the UAE's Instant Payment Platform, which will connect domestic card switches and financial messaging systems. More recently, Payments Network Malaysia and NPCI International also signed an agreement for reciprocal DuitNow QR and UPI merchant payments.⁹²

Now, if we analyse closely, India already uses several variants of bilateral interoperability. For instance, UPI-PayNow is an account-to-account remittance link, overseas UPI merchant acceptance and the agreement with Malaysia focus on travel and merchant payments, whereas the cooperation with the UAE is broader because it combines of fast payments, cards, messaging, and a local currency settlement objective. Designating all of these arrangements as one category would mask the different frictions that each model is designed to solve.

Therefore, the bilateral model is therefore already well established in India as an initial extension. The next question is how India can make additional connections cheaper to build and more consistent for users. A reusable compliance framework could standardise the minimum requirements for participant eligibility, message translation, foreign exchange disclosure, payment status, refund handling, and while the technical specifications may vary, a common policy template would reduce the need to renegotiate the same core trust questions with each new jurisdiction.

Extending these bilateral links should also be assessed economically, where corridors with high remittance volumes, tourism flows, or trade relationships can play a large role in supporting the operational effort and the foreign exchange liquidity required to run these corridors. On the other hand, in lower-volume corridors, a multilateral model might be a much more attractive option because it helps spread integration costs across a large number of participating jurisdictions, in line with India's Project Nexus ambitions.

5.2 Multilateral Interlinking and Project Nexus

A multilateral collaborative framework solves the scaling problem that is created by separate bilateral connections. If every fast-payment system requires a separate link, the number of relationships increases. This would ultimately lead to a framework in which there are several systems operating,

⁹⁰I Purwanto, N. M. A., & Xu, Y. (2026). *ASEAN's digital payment revolution: A new frontier for regional integration, Thailand* (IMF Selected Issues Paper No. 2026/013). International Monetary Fund. <https://www.imf.org/en/publications/selected-issues-papers/issues/2026/02/20/aseans-digital-payment-revolution-a-new-frontier-for-regional-integration-thailand-574175>

⁹¹Committee on Payments and Market Infrastructures. (2024). *Linking fast payment systems across borders: Governance and oversight*. Bank for International Settlements. <https://www.bis.org/cpmi/publ/d223.htm>

⁹²Reserve Bank of India. (2023, February 21). *UPI-PayNow linkage*. https://www.rbi.org.in/Scripts/BS_PressReleaseDisplay.aspx?prid=55260; Reserve Bank of India. (2023, July 15). *Reserve Bank of India and Central Bank of the UAE sign two MoUs*. https://www.rbi.org.in/Scripts/BS_PressReleaseDisplay.aspx?prid=56054; Payments Network Malaysia & NPCI International Payments Limited. (2026, February 12). *Payments Network Malaysia and India's NPCI International sign agreement to enable cross-border QR payments*. <https://paynet.my/about-us/media-centre/press-release/payments-network-malaysia-and-india-npci-international-sign-agreement-to-enable-cross-border-qr-payments.html>

each with their own bilateral connection. In a multilateral framework, however, each domestic system can connect to a common network with set standards.

Project Nexus, conceptualised by the Bank For International Settlements Innovation Hub, illustrates this model. It combines standard gateways, common message flows, proxy resolution, and foreign exchange processes. Within this, a connected instant payment system can reach other participating systems through the nexus architecture without requiring a different technical stack. It retains domestic systems as entry and exit points and acts as an interoperability layer without creating or requiring a new retail wallet or a replacement infrastructure.⁹³

Because bilateral duplication is institutional as well as technical, each link may require separate legal and operating arrangements among central banks, system operators, banking associations and participating institutions. A multilateral model replaces part of that repeated negotiation with a common scheme, but creates a different governance problem. The scheme must determine how countries and participants join, which service levels apply and how standards change. Its benefits therefore depend on the credibility and neutrality of the institution operating the framework.

India's position and implication

India is an active participant in Project Nexus, and the Reserve Bank of India has joined Malaysia, the Philippines, Singapore, and Thailand in the implementation phase, with Indonesia acting as a special observer. As of now, the central banks of the participating countries have agreed to set up a nexus scheme organisation in Singapore to manage the scheme as it moves towards the live implementation phase. Therefore, India's UPI is positioned as one of the domestic instant payment systems around which this emerging multilateral architecture is being built.⁹⁴

Nexus is strategically distinct from bilateral expansion but can complement it. India can use bilateral links where a corridor has a distinct policy or commercial use case, whereas Nexus can be used to reduce the marginal cost of reaching a wider set of participating jurisdictions. So while bilateral QR arrangements may continue to make more sense for merchant acceptances, Nexus might be better suited for scalable account-to-account cross-border transfers under a common scheme.

India's main policy interest lies in the design of the common layer. This could incorporate the following principles:

- Foreign exchange arrangements should allow competition among multiple providers so that faster cross-border connectivity and accessibility do not result in the reproduction of opaque pricing.
- Participation rules should allow sufficient bank and non-bank participation without weakening prudential and financial integrity standards.
- The consumer protection framework within this model should clearly specify who handles complaints when a payment crosses several systems.
- Similarly, data privacy rules will need to be designed to allow the payment to carry enough structured information for compliance and tracing, without unnecessary cross-border data exposure.

Looking ahead, India's comparative advantage may increasingly lie in helping shape an interoperable rule system. This may become increasingly valuable over time, as it is an opportunity for India to influence these rules at the design/inception stage rather than align itself and adapt to them later.

⁹³ Bank for International Settlements Innovation Hub. (2025, August 27). *Project Nexus: Enabling instant cross-border payments*. <https://www.bis.org/about/bisih/topics/fmis/nexus.htm>

⁹⁴BBank for International Settlements. (2024, July 1). *Project Nexus completes comprehensive blueprint for connecting domestic instant payment systems globally and prepares for work towards live implementation*. <https://www.bis.org/press/p240701.htm>; Bank for International Settlements Innovation Hub. (2025, August 27). *Project Nexus: Enabling instant cross-border payments*. <https://www.bis.org/about/bisih/topics/fmis/nexus.htm>

5.3 Banks, Fintechs and Other Competing Rails

Collaboration between jurisdictions on fast-payment transfers does not remove the need for banks, payment aggregators, fintechs, card networks. Cross-border payments remain structurally layered market, with different providers serving and sometimes competing across different functions.⁹⁵

Correspondent banking remains central because it provides broad currency and geographic reach, particularly for wholesale and trade payments. However, it has several limitations, which include long chains of intermediaries, pre-funding, cut-off times, repeated compliance checks etc. But none of these problems require a complete overhaul, and sustained focus on modernisation - migration towards ISO 20022, payment pre-validation, tracking can be quite effective in improving an existing bank architecture without the need to move every institution to a new rail.⁹⁶

Fintech models address a different problem. Some providers route transfers through local bank accounts or domestic clearing systems at both ends, removing the need to send each retail payment through a long correspondent chain. This can make the retail experience faster and the quoted price more predictable. However, this model still relies on access to local banks, foreign exchange, pre-funding, and licensing. Therefore, the speed visible to the user can coexist with significant liquidity and regulatory arrangements behind it.

With regard to the above, the Financial Stability Board has focused on consistent and predictable regulations between bank and non-bank payment service providers. Its 2024 recommendations argue for risk-proportionate supervision, consumer protection, and cross-border cooperation.⁹⁷

India's position and implication

India has a multifaceted architecture, such that authorised dealer banks remain central to foreign exchange management and several cross-border payment flows. In parallel, the Reserve Bank of India's payment aggregator cross-border framework brings entities facilitating online import and export payments under its direct regulation. In addition to this, India has also allowed eligible non-bank payment system operators direct access to the Reserve Bank's centralised payment systems, although this is subject to operational and settlement requirements.⁹⁸

Therefore, for India, the logical policy choice is how well it can preserve bank-related settlement and foreign exchange controls while allowing regulated providers to compete at the layers where competition can reduce friction. These could include customer onboarding, routing, foreign exchange quotation, merchant collection, payment tracking. The core objective should be that the end user receives the standard minimum protections, regardless of whether the front end is a bank, a fintech, or any other authorised provider.

With regards to the above, there are three particular areas that deserve attention:

1. Fee and Foreign Exchange Disclosure should be comparable across providers, including intermediary deductions wherever they exist.
2. Payment Status and Reference Information should remain traceable when a transaction moves across multiple providers.

⁹⁵CCCommittee on Payments and Market Infrastructures. (2022). *Interlinking payment systems and the role of application programming interfaces: A framework for cross-border payments*. Bank for International Settlements. <https://www.bis.org/cpmi/publ/d205.htm>

⁹⁶CCCommittee on Payments and Market Infrastructures. (2026). *The future of financial messaging: Navigating the ISO 20022 migration journey* (CPMI Brief No. 11). Bank for International Settlements. <https://www.bis.org/cpmi/publ/brief11.htm>

⁹⁷FFinancial Stability Board. (2024). *Recommendations for regulating and supervising bank and non-bank payment service providers offering cross-border payment services: Final report*. <https://www.fsb.org/2024/12/recommendations-for-regulating-and-supervising-bank-and-non-bank-payment-service-providers-offering-cross-border-payment-services-final-report/>

⁹⁸RReserve Bank of India. (2023, October 31). *Regulation of Payment Aggregator – Cross Border (PA-CB)* (RBI/2023-24/80). <https://www.rbi.org.in/Scripts/NotificationUser.aspx?Id=12561&Mode=0>; Reserve Bank of India. (2021, July 28). *Access for non-banks to centralised payment systems*. <https://www.rbi.org.in/commonman/english/scripts/FAQs.aspx?id=3324>

3. Complaint and Refund Roles should be able to transparently identify a customer-facing institution, even when several entities are participants in execution.

These requirements would improve trust without prescribing a single business model.

Opportunities also exist in the realm of micro, small and medium enterprise payments. Small firms and retailers often have to deal with the burden of repeated documentation and compliance requests, when they use different banks or platforms for trade, and while India's Payment Aggregator-Cross Border framework takes note of the collection and settlement chain, cross-border open finance and reusable data standards deserve more attention as viable methods to reduce friction earlier in the transaction.

5.4 Central Bank Digital Currencies (CBDCs), Stablecoins and Tokenised Settlement

CBDCs, stablecoins, and tokenised settlement are often grouped together because of their digital form. However, they use different architectures:

- CBDCs are a direct liability of a central bank⁹⁹
- Tokenised commercial bank deposits are classified as claims on regulated banks
- Stablecoins, on the other hand, are privately issued tokens, and the value of the token depends on the issuer's reserve and redemption arrangements

Owing to their different architectures, their different architectures also produce different policy consequences, even where they use programmable infrastructure. These architectures are more likely to coexist than to replace one another. Banks are likely to remain central to regulated access, wholesale settlement, foreign-exchange provision and institutional treasury. Fintechs may continue to improve the customer-facing layer for retail and MSME payments, while tokenised deposits, CBDCs or stablecoins operate beneath that interface as alternative settlement instruments. A change in the settlement layer therefore does not require the user-facing payment method itself to be tokenised.

Research and experimentation internationally have focused on the settlement layer - Project Rialto, for instance, explored whether existing instant payment systems could connect to a tokenised foreign exchange and central bank money settlement layer. The proof of concept linked payment versus payment, automated foreign exchange and tokenised wholesale central bank money for low-value cross-border payments. This illustrated that user-facing payment systems need not themselves be tokenised for a new settlement layer to improve foreign exchange and settlement.¹⁰⁰

In May 2026, the Bank for International Settlements reported that the Project Agorá prototype had demonstrated atomic multi-currency settlement using tokenised central bank reserves and tokenised commercial bank deposits. The design focuses on preserving the two-tiered monetary system, while reducing reconciliation, sequential processing, and settlement risk. The project is moving towards advanced testing, which also includes real-value transactions.¹⁰¹

Stablecoins differ most significantly from the other models in this set, since the payment asset is a private token unlike central bank money or a traditional bank deposit. They support continuous transfer and programmability, however, the Bank for International Settlements has been critical of their use, owing to certain identified weaknesses around monetary sovereignty, financial integrity, redemption. In parallel, the international policy response from several jurisdictions has shifted

⁹⁹ Reserve Bank of India. (2026, April 29). *Digital Rupee (e₹) – FAQs*. <https://www.rbi.org.in/commonman/english/scripts/FAQs.aspx?Id=3686>; Bank for International Settlements. (2026). *Anchoring trust in money: Innovation beyond stablecoins* (Annual Economic Report 2026, Chapter III). <https://www.bis.org/publ/arpdf/ar2026e3.htm>

¹⁰⁰ Bank for International Settlements Innovation Hub. (2025). *Project Rialto: Improving instant cross-border payments using central bank money settlement*. Bank for International Settlements. <https://www.bis.org/publ/othp106.htm>

¹⁰¹ Bank for International Settlements Innovation Hub. (2026). *Project Agorá: A shared programmable platform for wholesale cross-border payments*. Bank for International Settlements. <https://www.bis.org/publ/othp110.htm>

towards how stablecoins should be regulated and integrated into the existing financial systems. The United States has established a federal framework for payment stablecoins, and even the United Kingdom is on the path towards developing a framework focused on facilitating the use of stablecoins in payments coupled with regulatory cooperation with the US.¹⁰²

India's position and implication

India has already operationalised its retail and wholesale digital rupee pilots, and its cross-border position on CBDCs now includes an MoU on digital asset collaboration with the Monetary Authority of Singapore, bilateral discussions with Singapore and the UAE to operationalise cross-border CBDCs, and the move to join BIS Innovation Hub initiatives, such as the second phase of Project Mandala, focused on streamlining compliance related to cross-border transactions. Additionally, for 2026-27, the RBI plans to pursue bilateral and multilateral cross-border CBDC pilots for selected use cases, and also explore research on its technical and governance standards. More recently, the RBI governor Sanjay Malhotra confirmed that BRICS countries were in talks to establish links between their fast-payment systems and CBDCs, although these discussions are still at an early stage.¹⁰³

The relevant question for India, therefore, is what additional problem the digital rupee would solve. For retail users, UPI has already established itself as the primary ecosystem for instant payments, is familiar to users, and can increasingly connect with foreign fast-payment systems. Inclusion of CBDCs in India's financial system would therefore require a demonstration of a clear gain over UPI-based interlinking, such as better foreign exchange processes, lower settlement risk, or greater access in a particular corridor or functionality that cannot be delivered efficiently through the existing architecture.

For India, the stronger case for CBDCs and tokenised deposits lies at the wholesale and settlement layers. They cannot eliminate the need for local-currency liquidity or functioning foreign-exchange markets. Their potential benefit is narrower but important nonetheless. Payment-versus-payment settlement, programmability and shared ledgers may reduce the amount of liquidity that must be prefunded and fragmented across multiple Nostro and Vostro positions, allowing institutions to deploy it more efficiently. Projects Rialto and Agorá illustrate this possibility, but do not yet establish corridor-level savings at scale.^{104,105}

However, the case for CBDCs might be stronger at the wholesale and settlement layers, since India's cross-border payments still depend on foreign exchange liquidity, correspondent arrangements, and settlement across different operating windows. As discussed above as well, both Project Rialto and Project Agorá provide India with an opportunity to contribute to the emerging global framework for how instant payment systems can connect to automated foreign exchange and tokenised central bank money settlement.

Stablecoins should be assessed separately from CBDCs and tokenised bank deposits. Their strongest commercial case may arise in corridors where correspondent relationships are thin and existing transfers are slow, expensive or unavailable outside limited operating windows. In such corridors, a

¹⁰² Hernández de Cos, P. (2026, April 20). *Stablecoins: Framing the debate* [Speech]. Bank for International Settlements. <https://www.bis.org/speeches/sp260420.htm>; The White House. (2025, July 18). *Fact sheet: President Donald J. Trump signs GENIUS Act into law*. <https://www.whitehouse.gov/fact-sheets/2025/07/fact-sheet-president-donald-j-trump-signs-genius-act-into-law/>; HM Treasury & U.S. Department of the Treasury. (2026, July 14). *UK-US joint statement on stablecoins*. <https://www.gov.uk/government/publications/recommendations-of-the-transatlantic-taskforce-for-markets-of-the-future/uk-us-joint-statement-on-stablecoins>

¹⁰³ Reserve Bank of India. (2026, April 29). *Digital Rupee (₹) – FAQs*. <https://www.rbi.org.in/commonman/english/scripts/FAQs.aspx?Id=3686>; Bank for International Settlements Innovation Hub. (2025, November). *Project Mandala: Shaping the future of cross-border payments compliance*. <https://www.bis.org/about/bisih/topics/cbdc/mandala.htm>; Reuters. (2026, August 11). BRICS nations discuss linking payment systems and CBDCs, RBI chief says. <https://www.reuters.com/world/india/brics-nations-discuss-linking-payment-systems-cbdcs-rbi-chief-says-2026-08-11/>

¹⁰⁴ Bank for International Settlements Innovation Hub. (2025). *Project Rialto: Improving instant cross-border payments using central bank money settlement*. Bank for International Settlements. <https://www.bis.org/publ/othp106.htm>

¹⁰⁵ Bank for International Settlements Innovation Hub. (2026). *Project Agorá: A shared programmable platform for wholesale cross-border payments*. Bank for International Settlements. <https://www.bis.org/publ/othp110.htm>

stablecoin may support continuous transfer and reduce the number of settlement steps. It would not, however, remove the need for regulated entry and exit points, foreign-exchange conversion, customer verification, redemption and delivery into usable local currency. Its usefulness may therefore be more limited in a mature domestic market where systems such as UPI already provide rapid and inexpensive payments.

For India, the concentration of stablecoin issuance in US dollar-linked instruments creates additional concerns regarding monetary sovereignty, capital flows and dependence on foreign issuers. Any role in mainstream cross-border payments would require enforceable standards for reserve quality, redemption at par, segregation of assets, governance, operational resilience, AML/CFT controls and regulatory access to transaction information. The appropriate policy question is therefore not whether stablecoins should replace existing rails, but whether a regulated settlement use case can produce a demonstrable corridor-level benefit that cannot be achieved as safely through bank deposits, CBDCs or fast-payment interlinking.¹⁰⁶

5.5 ISO 20022, APIs and Data Standardisation

Data standards, although compared to the other sections in this chapter, cannot be considered as a separate payment rail, but they play a big role in determining how effectively almost every rail can operate. A cross-border payment almost always carries essential data such as names, account identifiers, addresses, invoice references, etc. This requires a sort of a common language for the different payment systems to interact with each other. When one system is unable to interpret another system's data, institutions end up translating or truncating information. Sometimes even compliance checks are repeated, and a straight-through processing breaks down. Additionally, even though a payment might move across a fast network, it might still have to pause for manual data repair due to a non-standardised method for sharing information.¹⁰⁷

ISO 20022 solves this and provides a common language for structured financial messaging. However, it is important to know that the same standard does not always guarantee interoperability. Jurisdictions and infrastructures can have a different implementation style with different fields, format and rules, which re-creates the initial translation problem discussed above. With regard to the same, the CPMI recently updated its harmonised requirements to solve translation problems inside a nominally common standard.¹⁰⁸

Application programming interfaces, or APIs, address a similar problem. They allow separate systems and providers to request information and initiate services in real time, but even here, fragmented API specifications can create that same integration burden that common APIs are intended to reduce. The CPMI therefore recommends standardisation of API protocols and common technical specifications for cross-border use cases.¹⁰⁹

The Bank for International Settlements has two projects in particular that illustrate how this layer could develop. Project Aperta, for instance, is a prototype that links various open finance networks globally. It includes the United Kingdom, the United Arab Emirates, Brazil, Hong Kong and India, linked through a neutral interoperability layer, and its business and trade finance use cases have tested cross-border data portability without the requirement of a domestic open finance system to abandon its own architecture. Similarly, Project Mandala, as discussed above, is testing whether jurisdiction-specific regulatory requirements can be encoded and validated so that the transaction

¹⁰⁶ Hernández de Cos, P. (2026, April 20). *Stablecoins: Framing the debate* [Speech]. Bank for International Settlements. <https://www.bis.org/speeches/sp260420.htm>; Bank for International Settlements. (2026). *Anchoring trust in money: Innovation beyond stablecoins* (Annual Economic Report 2026, Chapter III). <https://www.bis.org/publ/arpdf/ar2026e3.htm>

¹⁰⁷ Committee on Payments and Market Infrastructures. (2026). *The future of financial messaging: Navigating the ISO 20022 migration journey* (CPMI Brief No. 11). Bank for International Settlements. <https://www.bis.org/cpmi/publ/brief11.htm>

¹⁰⁸ Committee on Payments and Market Infrastructures. (2026). *Harmonised ISO 20022 data requirements for enhancing cross-border payments – updated report*. Bank for International Settlements. <https://www.bis.org/cpmi/publ/d230.htm>

¹⁰⁹ Committee on Payments and Market Infrastructures. (2024). *Promoting the harmonisation of application programming interfaces to enhance cross-border payments*. Bank for International Settlements. <https://www.bis.org/cpmi/publ/d224.htm>

carries evidence of compliance checks, which would reduce the need for an intermediary to repeat the same checks.¹¹⁰

India's position and implication

For India, the key factor is whether domestic implementation and data practices are well aligned to support cross-border straight-through processing.

The Reserve Bank of India's next generation RTGS system is already built on ISO 20022. Additionally, the RBI's Vision 2028 policy paper places cross-border payment efficiency at the center of the next phase of reform - it has committed to reviewing the cross-border payments framework and streamlining authorisation under the Payments and Settlement Systems Act, 2007 and the Foreign Exchange Management Act 1999. Even with regard to APIs, India has a strong API ecosystem through UPI and open finance, and its participation in Project Aperta and Mandala (phase 2) indicate sustained efforts to build a standardised and interoperable cross-border payments ecosystem.¹¹¹

However, there is currently no single global API standard for cross-border payments. India could therefore align and audit its domestic implementation of ISO 20022 against the CPMI's harmonised cross-border requirements. This would help support greater convergence in API interfaces used for functions such as payment status, financial data exchange. It would also be particularly beneficial for micro, small, and medium enterprises, since a large part of their cross-border friction arises from compliance requirements relating to identity, accounts, invoice, shipping, which is usually scattered across institutions. Therefore, a linked payment and open finance standard would reduce duplication across the full transaction journey.¹¹²

¹¹⁰ Bank for International Settlements Innovation Hub. (2026). *Project Aperta: Enabling cross-border interconnectivity through open finance interoperability*. Bank for International Settlements. <https://www.bis.org/publ/othp111.htm>; Bank for International Settlements Innovation Hub. (2025, November). *Project Mandala: Shaping the future of cross-border payments compliance*. <https://www.bis.org/about/bisih/topics/cbdc/mandala.htm>

¹¹¹ Reserve Bank of India. (2021, July 28). *Access for non-banks to centralised payment systems*. <https://www.rbi.org.in/commonman/english/scripts/FAQs.aspx?Id=3324>; Reserve Bank of India. (2026). *Payments Vision 2028*. <https://rbidocs.rbi.org.in/rdocs/PublicationReport/Pdfs/PAYMENTSVISION2028270326500316AFADEB47259CB970132BA01304.PDF>

¹¹² Committee on Payments and Market Infrastructures. (2024). *Promoting the harmonisation of application programming interfaces to enhance cross-border payments*. Bank for International Settlements. <https://www.bis.org/cpmi/publ/d224.htm>; Committee on Payments and Market Infrastructures. (2026). *Harmonised ISO 20022 data requirements for enhancing cross-border payments – updated report*. Bank for International Settlements. <https://www.bis.org/cpmi/publ/d230.htm>

06

Turning India's regulatory, technical and diplomatic efforts into a coordinated roadmap for trusted cross-border payments, with clearer rules, corridor-level strategies and measurable outcomes.



The preceding chapters show that India does not lack payment rails or bilateral initiatives. The remaining challenge is institutional and requires turning separate regulatory, technical and diplomatic efforts into a repeatable programme that improves outcomes for remittance users, travellers and MSMEs. The roadmap below therefore prioritises common rules, corridor-level evidence and accountable implementation.

6.1 Domestic Regulatory and Operational Reforms

India should first consolidate the user-facing consequences of its existing frameworks. RBI should issue a cross-border payments operating handbook that maps FEMA permissions, PA-CB obligations, KYC and AML/CFT requirements, payment-system rules and trade-monitoring records by use case. It should include a common evidence matrix, plain-language purpose descriptions and standard responsibilities for authorised dealer banks, PA-CBs and other regulated providers. The handbook should also promote consistent practices for FIRA issuance, EDPMS closure, PAN verification under the LRS and evidence for common low-value service exports. Payments Vision 2028 already provides the policy basis for reviewing and streamlining these arrangements.¹¹³

Compliance should then be calibrated to risk rather than transaction value alone. Recurring household remittances and low-value MSME receipts should be eligible for simplified review where the customer, provider, corridor and transaction pattern present demonstrably lower risk. This is not an exemption from financial-integrity controls. It is a shift from repeated documentary checks to verified data reuse, targeted escalation and supervisory testing. The FSB similarly recommends proportionate and consistent treatment of bank and non-bank cross-border payment providers.¹¹⁴

Consistent with Payments Vision 2028, RBI should examine a single-window application process for entities requiring both PSS Act authorisation and authorisation as an authorised person under FEMA. Beyond coordinating the application process, fragmented permissions could gradually be reorganised around the activity performed and the risk presented. A common foundation of governance, financial soundness, security, consumer protection and reporting requirements could be combined with modular permissions for domestic aggregation, cross-border imports, exports, remittances and other payment activities. This would not create a single undifferentiated licence. It would help ensure that entities performing equivalent functions are subject to comparable obligations while additional controls remain available for higher-risk activities.

RBI should also examine whether fragmented authorisations can gradually be reorganised around the activity performed and the risk presented. A common foundation of governance, financial soundness, security, consumer protection and reporting requirements could be combined with modular permissions for domestic aggregation, cross-border imports, exports, remittances and other payment activities. This would not create a single undifferentiated licence. It would help ensure that entities performing equivalent functions are subject to comparable obligations while additional controls remain available for higher-risk activities.

RBI should also mandate a minimum set of information that must be shown before confirmation. This should include total charges, the reference exchange rate and margin, the amount expected to arrive, expected availability of funds, the applicable processing cut-off and whether initiation after that point will defer the payment. Providers should move towards continuous processing where foreign-exchange, compliance and settlement arrangements permit it. After initiation, a persistent transaction reference, common status and return codes, and named responsibility for recalls and refunds should follow the payment across providers. Beneficiary-name or account pre-validation should be used where the corridor permits it. A single complaint entry point at the customer-facing

¹¹³ Reserve Bank of India. (2026). *Payments Vision 2028*.

<https://rbidocs.rbi.org.in/rdocs/PublicationReport/Pdfs/PAYMENTSVISION2028270326500316AFAD47259CB970132BA01304.PDF>

¹¹⁴ Financial Stability Board. (2024). *Recommendations for regulating and supervising bank and non-bank payment service providers offering cross-border payment services: Final report*. <https://www.fsb.org/2024/12/recommendations-for-regulating-and-supervising-bank-and-non-bank-payment-service-providers-offering-cross-border-payment-services-final-report/>

provider should remain responsible for coordination even where resolution requires action by a foreign institution.

6.2 A Corridor-Based Strategy for India

India should treat expansion as a corridor portfolio. RBI, Finance and MEA should score demand, present friction, integrity and data risk, partner readiness, and public value. Since merchant QR readiness does not imply remittance or trade readiness, scores must be use-case-specific.

Each pilot should baseline total cost, time until funds are usable, repair, complaints, fraud and reach, then set a defined timeline for a decision to scale, redesign or stop the pilot.. Corridor risk assessment can identify where simplified due diligence is justified or enhanced monitoring is needed.¹¹⁵

6.3 Cross-Border DPI Partnerships and Economic Diplomacy

India should offer a modular package which includes QR and message standards, gateways, rules, security testing, supervision and capacity-building. Partners should retain authority over eligibility, identity, data and oversight; corridor agreements should allocate foreign exchange, settlement, liability and redress.

Economic diplomacy should be judged by reciprocal use, resilience and inclusion. The BIMSTEC proposal can support smaller remittance, tourism and merchant-payment pilots.¹¹⁶ NIPL may deliver technology, but public objectives, capability transfer, sustainability and exit arrangements need joint agreement.

6.4 India's Role in Global Payments Governance

India should use the G20 and FSB to support corridor reporting that separates initiation speed from final availability and measures total cost, repairs and complaints. The FSB's 2025 finding that policy work had not yet produced tangible end-user gains reinforces the need for national implementation and comparable KPIs.¹¹⁷ Through the CPMI, India should align domestic messaging with harmonised ISO 20022 requirements and promote common reason codes and API conventions.¹¹⁸ BRICS and BIMSTEC should host bounded pilots reported against the same indicators and standards.

6.5 Implementation Framework and Performance Indicators

Implementation should be organised through a standing RBI cross-border payments programme jointly led by the Department of Payment and Settlement Systems and the Foreign Exchange Department. The programme should include the Ministry of Finance, MEA, NPCI and NIPL, authorised dealer banks, PA-CBs, consumer representatives and relevant trade and remittance bodies. A small

¹¹⁵ International Monetary Fund & World Bank. (2021). *A draft framework for money laundering/terrorist financing risk assessment of a remittance corridor*. <https://www.imf.org/-/media/files/research/imf-and-g20/2021/g20-methodology-for-remittance-corridor-risk-assessment.pdf>

¹¹⁶ Ministry of External Affairs, Government of India. (2025, April 4). *List of initiatives announced during the Prime Minister's participation in the 6th BIMSTEC Summit*. https://www.mea.gov.in/outgoing-visit-detail?39367/list_of_initiatives_prime_ministers_participation_in_the_6th_bimstec_summit_april_04_2025=

¹¹⁷ Financial Stability Board. (2025). *G20 roadmap for cross-border payments: Consolidated progress report for 2025*. <https://www.fsb.org/2025/10/g20-roadmap-for-cross-border-payments-consolidated-progress-report-for-2025/>

¹¹⁸ Committee on Payments and Market Infrastructures. (2026). *Harmonised ISO 20022 data requirements for enhancing cross-border payments – updated report*. Bank for International Settlements. <https://www.bis.org/cpmi/publ/d230.htm>

programme office should maintain the corridor portfolio, assign named owners and publish a common scorecard. Each corridor should move through three stages. The first should establish a baseline and common operating rules. The second should test the arrangement with a limited set of providers and users. Wider deployment should follow only after an independent review shows better user outcomes without weakening financial integrity, fraud controls or operational resilience.

Horizon	Priority actions	Lead institutions	Performance indicators and gate
Short term (0-12 months)	Create the programme office and assign owners. Select priority corridors using the criteria in Section 6.2. Publish the operating handbook, common evidence matrix, use-case baselines and disclosure templates. Map responsibilities under the PSS Act and FEMA. Agree data-sharing, incident, complaint and escalation protocols.	RBI should lead through DPSS and FED. Finance and MEA should coordinate government and partner engagement. NPCI and NIPL, authorised dealer banks and PA-CBs should provide data and implement standards.	Each selected corridor should have a published baseline. Providers should disclose total cost, the exchange-rate margin, expected receipt, applicable cut-off and expected availability. Reporting should cover completion, repair, return, fraud, complaints, additional document requests, manual review and deferral caused by operating windows. Every payment should have a named complaint owner.
Medium term (1-3 years)	Pilot at least three corridors across remittances, travel and low-value trade. Add beneficiary pre-validation, common status and return codes, payment tracking and structured ISO 20022 fields. Test longer operating windows and more continuous processing where feasible. Pilot coordinated authorisation for activities that engage both the PSS Act and FEMA. Test refunds, outages, fraud response and complaint hand-offs before expansion.	RBI and partner authorities should approve the corridor rules. Scheme operators and providers should deliver the connection. Redress bodies should test cross-border complaint handling.	The scorecard should report the share of payments producing usable funds within one hour and within 24 hours. Total cost should fall from the baseline. Additional document requests, manual reviews, repairs and returns should decline. Complaint resolution should improve without material deterioration in fraud losses, outages or financial-integrity outcomes.
Long term (3-5 years)	Scale only pilots that meet cost, reliability and consumer-protection thresholds. Require interoperability and cyber-resilience testing, contingency and exit plans, concentration safeguards and independent evaluation.	RBI and Finance should decide whether to scale. MEA and partner central banks should govern cooperation. NPCI and NIPL, providers and multilateral bodies should support technical reviews.	User and merchant reach increases. Completion time, total cost and complaint resolution continue to improve. System availability remains high and fraud losses remain controlled. No corridor depends on a single provider without a tested alternative. Independent evaluations show progress towards the G20 targets.

6.6 Conclusion

India enters the next phase of cross-border payment reform with strong domestic rails, a large remittance market and growing international partnerships. The central policy question has shifted from whether a payment instruction can be initiated quickly, to whether the payer and beneficiary can understand the full cost, rely on the stated completion time, recover funds when something goes wrong and identify the institution responsible for redress. Trust therefore has to be designed across the entire transaction journey, including identification, compliance, foreign-exchange conversion, settlement, posting, refunds and complaints.

The most credible strategy is selective and corridor-based. India should prioritise corridors where diaspora, trade and tourism create sustained demand and where partner institutions can agree on common data, liability and consumer-protection rules. UPI and the wider DPI approach can lower connection costs and make low-value payments easier, but they should be treated as modular public infrastructure rather than a universal substitute for regulation, foreign-exchange markets or institutional capacity. Each arrangement should be assessed on actual reach, effective exchange-rate margins, final availability of funds, repair rates, fraud outcomes and complaint resolution, not simply on the announcement of a linkage.

India can translate domestic payment innovation into durable international leadership by pairing technical interoperability with proportionate regulation and accountable governance. If rigour is maintained, India can help shape a cross-border payment ecosystem in which speed and cost remain important, but transparency, reliability and user confidence determine success.

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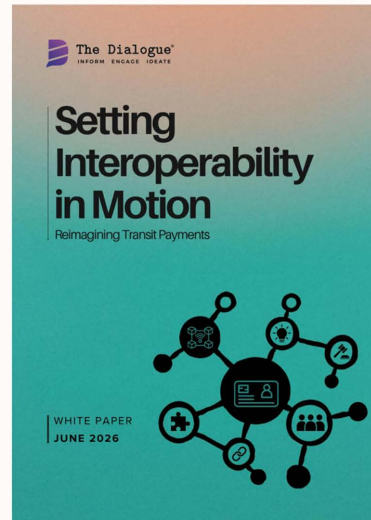
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