WORKING PAPER

The Building Blocks Supporting Open Finance

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CGAP

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Contents

Acronyms

AA	Accounts Aggregator
CDD	Customer Due Diligence
DFS	Digital Financial Services
DPI	Digital Public Infrastructure
FIPs	Financial Information Providers
FIUs	Financial Information Users
FSP	Financial Service Provider
G2P	Government-to-Person Payments
ID	Identification Documents
KYC	Know Your Customer
OF	Open Finance
PFM	Personal Financial Management
WG	Working Group

Inclusive Data Ecosystems and the Role of Open Finance

LOW-INCOME PEOPLE ARE INCREASINGLY digitally included, raising the potential for broader and deeper financial inclusion. By CGAP estimates, there are two billion low-income customers in low- and middle-income countries who are digitally included, meaning they have digital data trails that can be leveraged for the design and delivery of better financial services for them. Yet one-third of those people remain financially excluded (unserved), and many more remain underserved (Fernandez Vidal and Salman 2023a). Innovations in data-driven financial services and improved data sharing thus represent a transformational opportunity to include these people and to serve them with better financial services. For that to happen, inclusive data ecosystems must be fostered. These ecosystems are often supported by significant investment in digital public infrastructure (DPI), such as digital identification documents (ID), digitization of government payments and services, and citizen data.

A data ecosystem is a set of relationships, rules, and infrastructure that connect different data types across public authorities, businesses, and customers. An *inclusive* data ecosystem ensures that data related to low-income individuals and other groups traditionally excluded from formal services can be effectively used in designing and delivering financial services to those individuals. Among other attributes, inclusive data ecosystems include the products and providers that are most relevant for low-income and low-access users; are inclusive of the data trails that are more common to these users; function on interfaces typically used by these users; and have identity verification adaptive to the lack of centralized ID systems and lower-risk accounts or transactions.

Open finance is a promising approach to advancing inclusive data ecosystems. Open finance establishes consumer consent-based sharing of data across financial service providers by determining the requirements for and standards of participation. Open finance promotes competition and innovation by leveling the playing field between large data holders and newcomers. Providers with access to customer financial data held by third parties can then design and offer new products and services. Open finance also aims to give more control over personal data to the data subjects—individual customers and microentrepreneurs. When the availability of digital data about low-income customers is combined with other factors, such as a lower cost of customer acquisition and a more competitive marketplace, the conditions that support market-based solutions targeting lower-income segments are further advanced.

Open finance is expanding quickly across the globe, with most countries following a regulator-led open finance model.[1] In a regulator-led open finance model, the framework for data sharing among financial institutions is defined by a public sector authority, commonly a financial sector regulator (like in Brazil), or a specialized agency (like in the United Kingdom). In such a framework, providers' participation may be mandated or partially (for certain providers) mandated. Opposite to the regulator-led model are industry-led, voluntary schemes (like the United States).

While the earliest open finance regimes began in high-income economies, starting with the United Kingdom in 2017, many low- and middle-income economies soon followed. Open finance is already reshaping financial services in Brazil, an emerging market with a large low-income population. In Brazil, more than 27 million accounts are connected to open finance and are served by more than 800 participating financial service providers since open finance's launch in 2021 (Febraban 2024). In India, 39 million accounts have been connected through the account aggregator ecosystem in the past seven years, with a growth rate of 10x in 2023 (Sahamati 2024).

India and Brazil represent distinct paths to open finance, suggesting that the path chosen is dependent on the market context. In India, implementation is led by a civil society organization (Sahamati 2024), and a key role is played by a new type of data intermediary—account aggregators.[2] In Brazil, the governance structure is headed by the central bank, which ensures that consensus on standards and implementation among diverse market participants occurs in a timely manner. While implementation has been mandatory for large institutions and payment providers in Brazil, adoption has remained voluntary (with state-owned banks expected to participate) in India. These paths may have also influenced the pace of scale, with Brazil's open finance ecosystem expanding significantly faster than India.

While the implementation paths vary, there are common enablers determining the future success of an open finance regime. Those enablers are described later in this document.

1 Examples of countries with live regulator-led implementations of open finance include Australia, Bahrain, Brazil, the European Union, Hong Kong SAR, India, Saudi Arabia, the Republic of Korea, and the United Kingdom. Examples of countries with enacted laws or regulations include Chile, Colombia, Jordan, Kazakhstan, Mexico, Nigeria, and the United Arab Emirates (end of 2023).

2 India's Accounts Aggregator (AA) model uses an "intermediated approach," where AAs are the intermediaries who manage consumers' data-sharing consent and requests, which are then separately enacted by Financial Information Providers (FIPs) and Financial Information Users (FIUs), with the AAs prohibited from viewing, storing, or processing customer data. As such, AAs must establish their own bilateral connections with individual FSPs, while the customer consent granting is embedded within specific product journeys of financial service providers (FSPs), not independently through an open and interoperable open finance network, as in Brazil.

Advancing Inclusion Through Open Finance: Key Opportunities

OPEN FINANCE CAN HELP ADVANCE financial inclusion by addressing two key root causes of financial exclusion: (1) information asymmetry across providers, and (2) a lack of data on financial consumers. These root causes make it more difficult to assess customer risk and to design tailored and suitable products, both of which impact the availability of diverse, affordable, and high-quality financial services to underserved consumers (many of whom are women). Open finance addresses these root causes of exclusion primarily through its consent-based data-sharing rules and application programming interfaces (APIs). Figure 1 below highlights how open finance can help make financial services more inclusive by lowering the cost of serving customers, as well as by improving customer access, product fit, and the customer experience.

Access to better customer data lowers the cost of customer acquisition (for example, by more targeted marketing or through sharing of know your customer (KYC) data). Having a better understanding of customers improves credit and risk assessments, pricing, and faster development of new products. Better targeting, higher conversion rates, as well as strategic expansion of product offerings due to deeper data footprints of more individuals and small businesses lead to expanded access. Similarly, integration and new partnerships (new distribution channels, embedded finance) bring services closer to customers. More customized products offered to customers that fit their needs lead to better-suited products and outcomes. Customers' experience improves as they gain more control over their data and can determine how to get value from it. For instance, personal financial management (PFM) solutions provide valuable visibility of the range of services that the customer consumes from different institutions, which enhances control and enables better decision-making.

FIGURE 1. **Open finance can support financial inclusion by reducing costs and improving access, fit, and experience**

Source: Authors.

Building Blocks Supporting Inclusive Open Finance

THE INCLUSION IMPACT OF OPEN finance depends on several building blocks of the digital financial ecosystem.[3] These include digital accounts that are easily accessible by most adults, a well-functioning digital payment system, and a diverse set of financial providers who can build new solutions on top of interoperable payments and data-sharing functions. These blocks reduce barriers to entry for new players, reduce customer acquisition costs, and, in turn, reduce the cost of access and usage of financial services, cumulatively creating synergic effects where more data about customers can be accessed and processed for less cost with more value generated for the business and the end-user.

Figure 2 presents a conceptual framework for how these building blocks support open finance, and possibly open data.[4] These building blocks are near-essential requirements for an open finance system to achieve significant scale and fully serve financial inclusion policy goals. While they do not have to be developed in the sequence presented, there is a logical process where one block in place reinforces another to be added. Each of these building blocks requires policy and regulatory enablers to function (left-hand column in Figure 2), and has their own intended outcomes that advance financial inclusion on their own (right-hand column in Figure 2). As such, the building blocks work as a roadmap indicating where more work is needed before a successful implementation of open finance can be fully rolled out.

Each of these three layers brings the functionality and utility of digital payments a step closer to cash, eventually surpassing it. That is critical for digital payment uptake among different segments of the population. Each building block also unlocks the potential for new use cases with open finance functioning as a supercharger of product innovation and customer scaling. Finally, each building block intersects with or can be supported by policies and regulatory measures from the basic regulatory enablers (that is, e-money, agents, tiered KYC, consumer protection) to national IDs, G2P systems, and data protection frameworks.

The uptake and impact of open finance are commensurate with the uptake and prevalence of the policy and regulatory enablers and the increased financial access and usage they facilitate. If low-income customers are underserved by, or excluded from, the lower building blocks, such as

3 Several open finance regimes include expanding financial access and inclusion among their key objectives. This paper focuses on the case for open finance to advance financial inclusion.

4 Open data refers to a data sharing regime where customer data from outside the financial sector is shared (for example, from utility or telecom companies).

FIGURE 2. **Building blocks supporting inclusive open finance**

Key policy and regulatory enablers	Building blocks	Intended outcomes
Expand regulation, coordination, governance, consumer protection beyond the financial sector	Open data	Further the impact of open finance
Open finance regulations, Data Protection (for OF)	Open finance	Increased competition/reduced concentration, increased depth and breadth of FS, user control of data
Reg/Sup framework for fintech and payments, innovation facilitators	Diversity of providers	Expanding and diversifying product offering
Fast payments, low cost/free payments. Digitization of G2P, interoperability	Fast digital payments	Increasing use of transactional accounts. Digital payments mimics cash (increasing utility of digital payments)
Basic Enablers (e-money, risk based CDD, agents, and Consumer Protection)	Digital accounts	Broad access to accounts

Source: Authors.

digital accounts and instant payments, they will not be included through open finance alone. Policy makers who implement open finance and monitor its uptake among different customer segments should consider the effective development of each market stage to set the right goals and expectations for open finance. Some of these building blocks may be implemented simultaneously with or as part of open finance—for instance, third-party payment initiation, which allows consumers to make payments using an FSP other than the one that holds their funds, can leverage open finance infrastructure. If open finance is not reaching lower-income segments even as the regime matures, policy makers should inquire about the underlying issue and evaluate whether it is a weakness in underlying building blocks rather than the open finance design itself.

The building blocks are described below, using the examples of Brazil and India to show how they contribute to an open finance ecosystem.

Building block 1: Digital accounts

Broad access to digital accounts serves multiple purposes. First, it is an entry point into the formal financial sector where, once onboarded, customers can start accessing other services. Second, simple digital accounts build customer confidence, trust, and capability to use formal (digital) financial services. Third, the repeated use of digital accounts enriches customers' digital data trails with transactional data, which is invaluable for the design and delivery of other financial services through open finance. A key policy intervention for establishing and enhancing this layer is the implementation of basic regulatory enablers (Staschen and Meagher 2018).

To participate in open finance, having an account from which data can be shared is a necessity. Therefore, widespread digital account ownership is essential to achieving the inclusive impact of open finance. Where a substantial portion of consumers have already been onboarded to a digital account, the addressable market is expanded, as these customers can now more easily switch providers or shop for new services through open finance. They can also be onboarded at a lower cost.

Brazil was one of the earliest and most committed adopters of the agent banking models that later expanded globally in the 2000s. In March 2016, Brazil's National Monetary Council approved Resolution 4480, which allowed financial institutions to open accounts with digitized documents, making it easier for a broader range of customer segments to open accounts remotely. This created a low-cost, far-reaching set of access points, and helped increase financial inclusion to the point where 84 percent of the adult (15 and older) population had a bank account in 2021 (Demirgüç-Kunt et al. 2022). CGAP's 2023 survey of open finance participants shows an even higher penetration, with 96 percent of the adult population (18 and older) having a bank account (Fernandez Vidal, Jeník, and Salman 2023a).

The government of India, in 2014, launched the Pradhan Mantri Jan Dhan Yojana accounts to increase access to basic savings accounts. These accounts could be opened at bank branches or business correspondent (for example, bank agent) outlets, and were designed to serve the unbanked population through features such as no minimum balance and linking the accounts to government benefit programs. To date, more than 500 million accounts have been opened under this program.[5]

Building block 2: Fast digital payments

Fast digital payments drive the usage of digital accounts and expand customers' data trails. Implementing fast payments often requires an overhaul of the national payments system, key policy interventions to support this include strong oversight of the payments system (BIS 2005), payments interoperability (CGAP 2016) and G2P payments (Baur-Yazbeck, Chen, and Roest 2019). Having interoperable, fast payments in place is important for consumer experience and product development in open finance. Once digital payments become instant, and low-cost, digital payments transactions begin to mimic key features of cash that many people value. For providers, launching new open finance-enabled products, including the ability to move funds in and out of customers' accounts regardless of where such accounts are held, reduces cost, simplifies product development, and allows them to serve customers across all institutions participating in open finance.

The larger the number of consumers using digital payments and the greater the intensity of usage, the richer the data available to providers for innovation. Customer data is the backbone of financial innovation that allows providers to experiment with new credit scoring models, financial advice, insurance, savings, etc. However, that data is often held in siloes and underutilized by the data holders (large financial institutions) that have limited incentives to use that data to grow their business into new segments. Breaking the siloes and granting access to competitors opens avenues for providers to go down the market. In emerging markets, this may require including data on digital payments accounts held by non-banks that capture a meaningful portion of customer economic activity.

In Brazil, the introduction of PIX (an interoperable fast payment system) in 2020 led to exponential growth in the use of digital payments, with more than 450 million accounts registered on PIX as of September 2023. CGAP's 2023 survey of Brazilian financial consumers found that 92 percent of adults (18 and older) with a bank account, representing 88 percent of the total adult population, used PIX. This created a large potential user base for open finance at its inception.

5 https://www.pmjdy.gov.in/scheme

In India, in 2016, the government launched the Unified Payments Interface, India's fast, interoperable payment system for banks and e-money issuers. As of September 2023, it is used by nearly 500 participating banks, and processes more than 10 billion payments per month.[6]

Building block 3: Diversity of providers

The diversity of providers in digital financial services enables a qualitative change often described as the modularization of financial service value chains (Mitha, Biegon, and Zetterli 2022). Modularization refers to the reorganization of the financial sector along distinct roles—distribution, customer relationship, financial product or service, and balance sheet. In such a modularized environment, financial services become less tied to a single provider-customer relationship, competition intensifies to the benefit of customers, while previously under- and unserved customer segments receive more, and better-suited, services. Importantly, diversity of providers creates conditions for better use of data sharing by increasing the number of innovative firms seeking to find novel uses for data to improve upon current products offered in the market.

At a minimum, several types of digital financial service providers should be able to participate in the market through clear and proportionate regulatory frameworks, to promote diversification of segment focus and product offering. A market with low barriers to entry, where fintechs, digital banks, and relevant nonfinancial actors (such as platforms or large customer aggregators) can participate in the production of financial services, the distribution, or the financing of credit portfolios targeting underserved segments, creates conditions for a competitive and innovative marketplace. In the absence of such an environment, open finance can only incrementally improve services for existing customers in the banking system.

A key policy measure supporting the provider diversity layer of inclusive data ecosystems is the implementation of a regulatory approach that is agile, innovation-friendly, and allows regulators to respond to innovation in a timely manner. Such an approach would often include initiatives such as bespoke (for example, crowdfunding, crypto exchanges) and proportional licensing regimes, third-party payments initiation, and innovation facilitators (for example, regulatory sandbox).

In Brazil, for example, there are more than 1,500 fintech startups (the most in Latin America), with innovations across all types of financial services (Finnovating 2023). In credit alone, fintech lending portfolios have grown to over $10 billion in the last five years (Fintech Nexus 2023). Part of this success stems from proactive reforms by the central bank to facilitate the licensing and entry of new players into the system.

In India, improvements in the digital ID and payments systems have provided the runway for a rapid expansion of fintech providers, with India receiving the second most fintech investments globally in 2022.

Diversification of financial service providers increases partnerships between traditional financial service providers and fintechs. Such partnerships often lead to models where the fintech provides services via the traditional provider's channels to their existing customers. Open finance expands opportunities for a more open, diverse suite of partnerships by providing common API standards, interoperability, and the ability of fintechs to connect with and serve customers without the need for bilaterally negotiated agreements.

6 https://www.npci.org.in/what-we-do/upi/product-statistics

Assessing Market Readiness for Open Finance

NOT ALL MARKETS SEEKING TO EXPAND financial inclusion are ready to fully capture the benefits of open finance. Many markets will first need to strengthen the building blocks of an enabling ecosystem. Such strengthening may be part of their open finance implementation roadmap that may include basic policy reforms in competition and data protection.

Even where the building blocks are in place, there are several other market context considerations that influence the roadmap for open finance. To show how these may play out differently, we have highlighted a few of the key opportunities and challenges for open finance implementation in three leading digital financial services markets: Bangladesh, Kenya, and the Philippines.

CGAP has published the Open Finance Self-Assessment Tool to help policy makers gauge their country's readiness for open finance-driven financial inclusion.[7] The tool provides a comprehensive framework which policy makers can use to identify the supporting and limiting factors for open finance in their market, and the policy gaps which need to be addressed in the development of their version of open finance. The tool complements this working paper as it focuses on other dimensions (customer data footprints, regulatory ecosystem, and provider ecosystem) that expand on the three building blocks presented in this paper and that are critical to open finance success.

7 https://www.cgap.org/research/publication/open-finance-self-assessment-tool-and-development-roadmap

TABLE 1. **Opportunities and challenges for open finance in selected countries**

	Key opportunities	Key challenges
Bangladesh	• Wide reach of digital payments including lower-income populations and large microfinance sector. • Existing oversight of the majority of relevant actors through central bank and microfinance authority. • Fifty-eight percent of government payments are made digitally as of 2022 (Massally, Kurshed, and Tellez-Merchan 2022).	• Heavy concentration of mobile money accounts with two financial service providers. • Restrictive policies regarding the provision of some digital financial services by non-banks. • Interoperable digital transaction platform still in development.
Kenya	• Expansive fintech sector leveraging high mobile money and digital banking usage. • Strong appetite for digital solutions in key sectors such as micro, small, and medium enterprises that have been underserved by traditional finance. • Digital KYC and national ID allow for easy remote onboarding.	• Dominant mobile money provider with exclusive partnerships with select commercial banks. • Lack of regulatory coverage of some actors, including some types of lenders. • Limited market conduct mandate and supervisory infrastructure.
Philippines	• Open Finance Framework Circular released in 2021 by Bangko Sentral ng Pilipinas. • Expansive financial consumer protection, competition, and data protection laws. • Over 150 financial institutions participating in interoperable payments network.[a] • High use of digital financial services and growing fintech sector.	• National ID in process of rollout, with 36 million physical and 39 million digital ID cards issued as of August 2023 (Padillo 2023). • Coverage gaps may persist in some areas and population segments. • High degree of regulatory coordination required due to complementary mandates and some lenders not being under Bangko Sentral ng Pilipinas's jurisdiction.

a https://www.philpayments.org.ph/_files/ugd/98af26_53312931a7934d17bedb8db1218b4089.pdf?index=true

Source: Authors.

Conclusion

IN THE PAST 15 YEARS, EMERGING MARKETS have achieved historic growth in access to formal financial services—much of this has been led by digital financial services such as mobile money, which on its own has created 1.6 billion new digital accounts globally (GSMA 2023). Open finance could be the next frontier for inclusive financial services, helping drive down costs for consumers, increase choice and competition, and bring better-suited products to financially excluded and underserved population segments.

Ensuring that open finance reaches lower-income segments of the population requires intentional design for inclusivity. Even in a leading open finance market like Brazil, CGAP research (Fernandez Vidal, Jeník, and Salman 2023a) has found that while the low-income segments (segments "D" and "E") have a high use of digital bank accounts, they are half as likely to be among the early adopters of open finance To ensure a positive impact on financial inclusion and avoid exacerbating existing gaps, the outreach and use cases for open finance must cater to underserved and excluded populations, especially women and lower-income segments (Fernandez Vidal, Jeník, and Salman 2023b).

Designing for inclusivity begins with the three building blocks of digital accounts, digital fast payments, and a diversity of providers. Without these building blocks, it is unlikely that open finance will have a meaningful impact on financial inclusion in the near term. Policy makers should, therefore, ensure that their open finance strategies include assessment of the state of these building blocks and, where necessary, include further policy and regulatory reforms into open finance implementation roadmap.

Policy makers will also need to set clear inclusion targets and metrics for what inclusive open finance should mean for the cost of and access to financial services, their product fit, and customer experience, especially for low-income populations. Despite all its potential, the cost, complexity, and political commitment needed to achieve success in open finance is significant, which means countries will need to carefully consider their willingness and capacity to embark on this journey. Markets that meet the criteria described in this paper could consider open finance as the next key policy innovation to drive inclusive data ecosystems that foster more financial sectors that better serve the needs of all citizens in emerging markets, including those that are more vulnerable.

CGAP's past research on basic regulatory enablers for digital financial services, inclusive payments systems, and digital public infrastructure can help policy makers learn from the experiences of other markets that have implemented these building blocks. This working paper and CGAP's emerging set of country engagements and analysis will provide a similar set of lessons for the implementation of open finance as part of an inclusive data ecosystem strategy. The experience from Brazil, and the growing number of emerging markets enacting open finance policies, shows that open finance is one of the most important current policy innovations for financial inclusion and innovation, and a key connector of digital financial services to the broader digital economy.

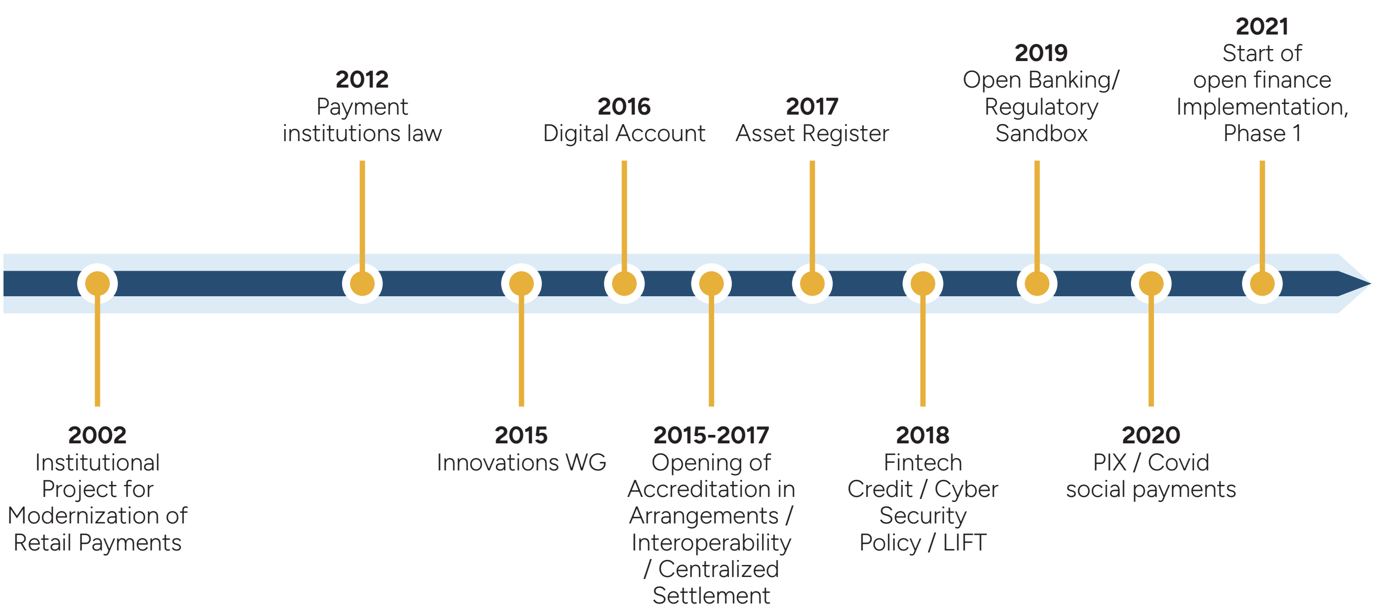
APPENDIX A

Open Finance in Brazil

BRAZIL'S SUCCESS IN OPEN FINANCE IS the result of a series of reforms that build on each other. For more than a decade, the Central Bank of Brazil and the Brazilian government have worked to develop and implement the building blocks of the digital financial ecosystem that are proving important enablers for open finance to success (Figure A1).

Open Finance: Brazil's open finance ecosystem has achieved growth at a pace unlike any other in the world thus far. As of September 2023, there were more than 27 million customers with 41 million accounts linked through open finance, and more than 800 registered entities offering a diverse range of deposit, payments, credit and investment products.

FIGURE A1. **Enablers of open finance success in Brazil**



Source: Vidal, Maria Fernandez, Ivo Jeník, and Arisha Salman 2023a.

FIGURE A2. **Key building blocks in the development of Brazil's inclusive data ecosystem and open finance**

Indicative policy measures	Building blocks	Indicative success metrics
Establishment of open banking regime (2020) and expansion into open finance (2022)	Open Finance	41M accounts in open finance and 800+ financial service providers
Reforms to ease licensing and market entry of new financial service providers, including fintech	Diversity of providers	1,500+ fintech startups—most in the region; $10B+ fintech lending portfolio
Launch of Pix by Central Bank of Brazil (2020)	Fast digital payments	453M accounts registered on PIX as of September, 2023
Early adoption of agent banking models and proportional payments regulation	Digital accounts	77% of the adult population has reported making or receiving a digital payment (FinDex 2021)

Source: Authors.

Open finance in Brazil evolved quickly through a series of policy reforms, including:

1. May 2020: Joint Resolution No. 1,[8] and the related Circular No. 4015,[9] establish the scope of open banking.
2. June 2020: Circular No. 4032 sets forth a representative governance structure,[10] along with the issuance of a list of institutions required to participate in open finance.[11]
3. March 2022: Agreements across regulators and the National Monetary Council expand open banking to open finance, adding insurance, pensions, accreditation, foreign exchange, and investment products to the open finance roadmap.
4. May 2022: Establishment of open finance interoperability across banking and insurance sectors.[12]

These reforms established rules and timelines for the expansion from open banking into open finance through a series of implementation phases (Figure A3). This began with the sharing of information between financial institutions—a lower-risk first test of information sharing. Then, Phase 2 began the sharing of consumer financial data, which was enhanced in Phase 3 by linking this sharing function with payment initiation services. Finally, in Phase 4, the scope of data consumers can share is expanded to new products and sectors. Each of these phases expands the participants, products and services, data types, or functionality of first open banking, and now open finance. Adoption has been growing steadily, reaching 27 million participants in September 2023, which represents 16 percent of the adult population. To learn more about open finance in Brazil (see Fernandez Vidal and Salman 2023a).

8 www.bcb.gov.br/content/config/Documents/Open_Banking_Regulation_Joint%20Resolution_No_1_Updated.pdf

9 www.bcb.gov.br/content/config/Documents/Open_Banking_BCB_Circular_4015_2020.pdf

10 www.in.gov.br/web/dou/-/circular-n-4.032-de-23-de-junho-de-2020-263186825

11 www.bcb.gov.br/estabilidadefinanceira/exibenormativo?tipo=Comunicado&numero=36480

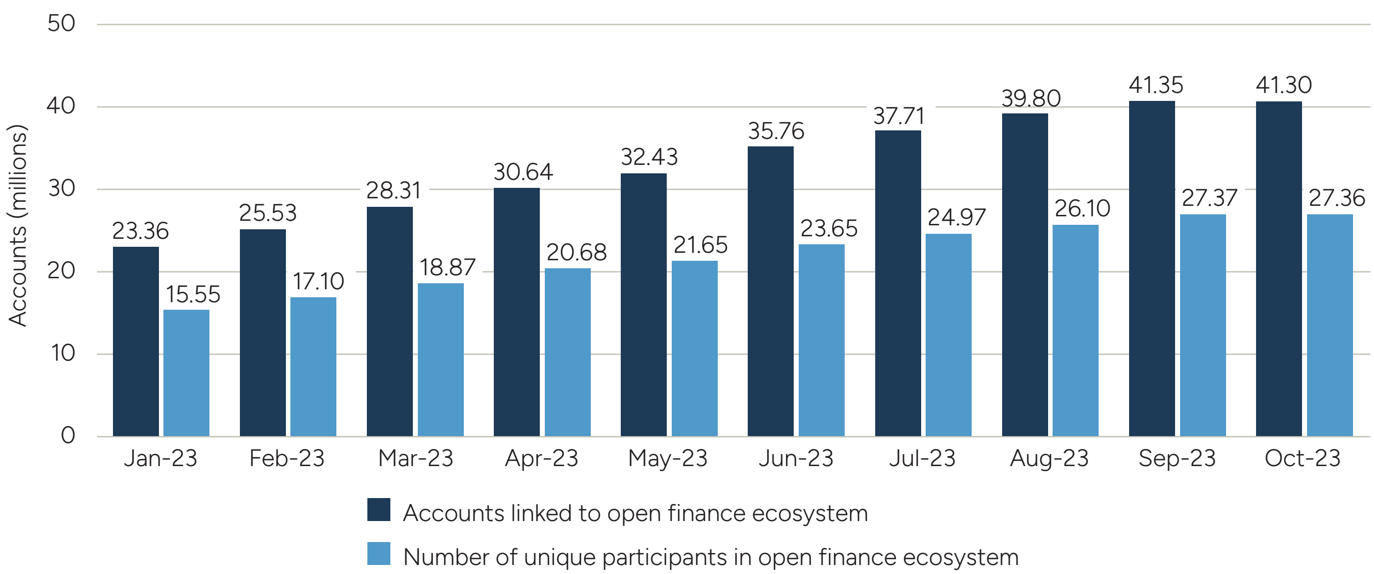
12 www.legisweb.com.br/legislacao/?id=431871

FIGURE A3. **Implementation phases for expansion of open banking into open finance**

Phase	Description	Timing
Phase 1	Standardized **sharing of information by financial institutions** about products and services	Early 2021
Phase 2	**Sharing of** registration, transactional, credit card, and credit operation **data by users between** their **financial institutions**	Mid 2021
Phase 3	Standardized **sharing of information by financial institutions** about products and services	Late 2021 – Early 2023 (phased launch)
Phase 4	Standardized **sharing of information by financial institutions** about products and services	2023+

Source: CGAP internal research (2023).

FIGURE A4. **Number of accounts and participants connected to the Brazilian open finance ecosystem**



Source: Central Bank of Brazil.

APPENDIX B

Open Finance in India

INDIA'S DEVELOPMENT OF AN INCLUSIVE data ecosystem is a process more than a decade in the making. Over this period, India has made several complementary infrastructure investments and policy reforms contributing to a current ecosystem that may be on the cusp of accelerated growth in open finance use cases. Some of the most important developments of the past decade include:

- Rollout of the Aadhar ID system, creating a digital ID system for all Indians.
- Reforms that allowed for non-bank financial companies to conduct more activities, such as payments and deposit-taking.
- Opening of deposit and digital payments accounts.
- Launch of the interoperable Unified Payments Interface.

The various building blocks (Figure B1) together have combined to create great potential for open finance, which in 2023 has begun to show promising growth in usage.

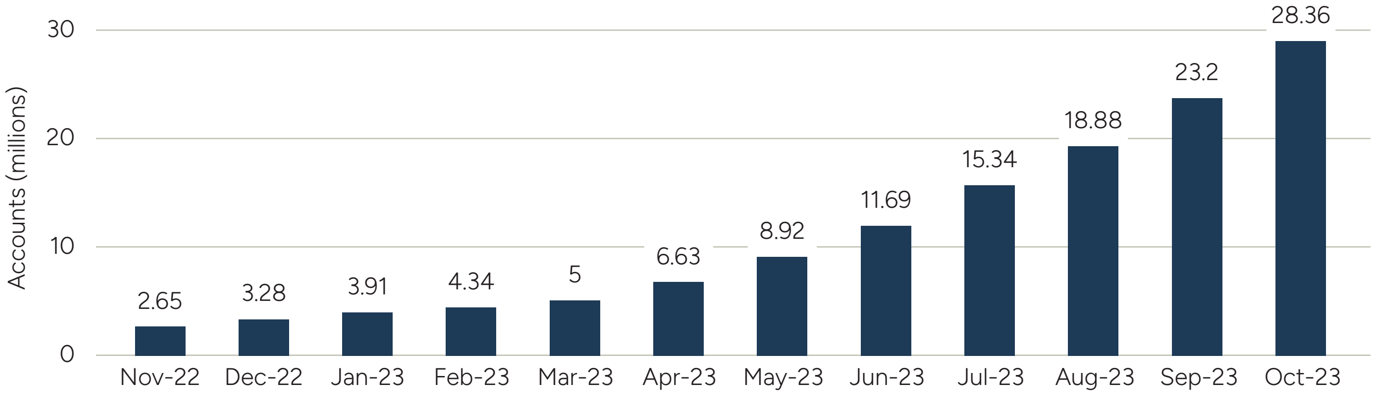
While the AA ecosystem had been initially slow to take off (Khanna, Mehta, and RM 2023), 2023 saw considerable growth in the number of accounts linked through AAs (Figure B2).

FIGURE B1. **Key building blocks in the development of India's inclusive data ecosystem and open finance**

Indicative policy measures	Building blocks	Indicative success metrics
Account Aggregators Master Directives (2015) and AA Ecosystem Standards (2021)	Open Finance	28M accounts linked to AA and 500+ FIPs and FIUs
Reserve Bank Innovation Hub established to facilitate fintech innovation (2022)	Diversity of providers	Second most fintech funding received globally in 2022
Establishment of Unified Payments Interface (2016)	Fast digital payments	10.5B monthly transactions as of September, 2023
PMJDY basic banking accounts (2014)	Digital accounts	Nearly 300 million Indians have digital bank accounts (Statista 2023)

Source: Authors.

FIGURE B2. **Number of accounts linked to AA ecosystem, as of november 8, 2023**



Source: https://sahamati.org.in/aa-dashboard/

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Banque Africaine de Développement / African Development Bank — African Development Fund / Fonds Africain de Développement

AFD

Bill & Melinda Gates foundation

British International Investment

Udenrigsministeriet — Ministry of Foreign Affairs of Denmark

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