

Key Points

- Inadequate collateral, inability to verify creditworthiness, and high transaction costs make lending to micro, small, and medium-sized enterprises (MSMEs) unattractive.
- The G20 prioritizes improving MSME access to finance through innovative methods, particularly in low-income and developing countries.
- Digital public infrastructure for data exchange, such as India's Account Aggregator network, is an important example of open banking, allowing third-party access to financial data via application programming interfaces with individual consent.
- Open banking systems can significantly impact MSMEs' access to credit and services, leading to lower fees, better interest rates, and more customized financial solutions.
- The G20 under Brazil should encourage knowledge sharing on digital public infrastructure and their transformative impact on improving MSME access to finance. The G20 countries should also explore global open banking systems to ease cross-border financial access for trade finance.

Open Banking Systems for Enhancing Financial Access for Micro, Small, and Medium-Sized Enterprises: The Case of India

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1. Introduction

Micro, small, and medium-sized enterprises (MSMEs) are a vital component of most economies.¹ They account for 60% of employment and nearly 95% of all companies worldwide (WTO 2019). Estimates suggest that there are approximately 332.99 million small and medium-sized enterprises (SMEs) worldwide (Statista 2023). According to the International Finance Corporation (2017), there are close to 162 million formal MSMEs in developing countries alone, of which 141 million are microenterprises and 21 million are SMEs. Importantly, MSMEs represent almost 35% of gross domestic product in developing countries and around 50% in developed countries (WTO 2019). Despite their significant contribution to economies worldwide, the MSME sector faces several challenges.

Multiple studies have highlighted that MSMEs face significant credit constraints compared to large firms. Analysis conducted by IFC (2017) in 128 developing economies, 65 million MSMEs (about 40% of all enterprises) are credit-constrained. In the same group of economies, there is an estimated finance gap of \$5.2 trillion, which is nearly 19% of the gross domestic product of these economies. The potential demand for finance among MSMEs is about \$8.9 trillion, against a credit supply of \$3.7 trillion. Additionally, from the informal sector enterprises in developing economies, the potential demand is about \$2.9 trillion, which is equivalent to 10% of their gross domestic product (IFC 2017).

The difficulties MSMEs face in accessing finance are a consequence of multiple factors. The inadequacy of collateral, the inability to verify the creditworthiness of enterprises, and the high transaction costs of making small ticket size loans to MSMEs tend to

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¹ There is no universal definition of MSMEs in the literature. Existing definitions vary widely and depend on the business culture in the country or region in question, mostly influenced by the size of the population and industry and the level of its international economic integration.

make lending to this sector unattractive (IFC 2017; ADB 2022).² Further, smaller enterprises often do not have bankable business plans. In the absence of such plans, the demand and need for quality collateral becomes more significant. Another key challenge pertains to the lack of information infrastructure for SMEs, which exacerbates the information asymmetry between the suppliers and demanders of funds (ADB 2022). Unlike big enterprises, SMEs have little or no connection with capital markets and financial institutions cannot continuously observe borrowers of small loans without incurring significant costs. Therefore, MSMEs are perceived as being riskier from the point of view of lenders. Importantly, the challenges of information asymmetry, high default risk, and lack of collateral also result in a higher cost of credit for SMEs compared to larger firms (Figure 1). Consequently, SMEs experience a significant financing gap and are compelled to rely on personal savings and borrowings from friends and relatives.

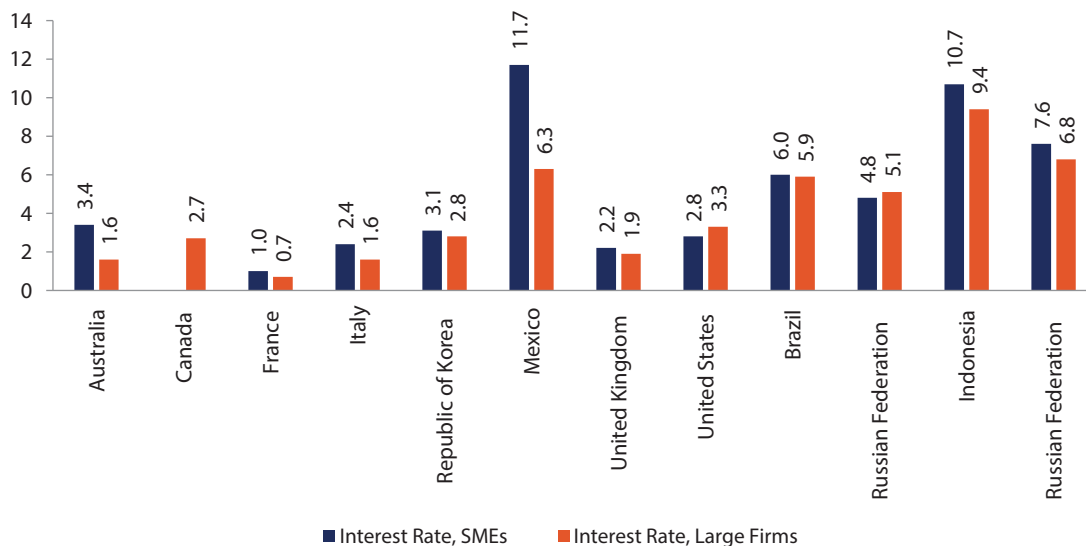
It is important to highlight here that regulatory norms, which tighten banking regulations, often lead to stringent lending practices particularly toward the

MSME sector because it is considered a riskier lending category. Studies have shown that the implementation of regulatory norms under the Basel III guidelines have incentivized banks to shift their portfolio away from the SME sector and limited financing options for the sector (Fisera, Horváth, and Melecký 2019; Padgett 2013).³ Recent analysis from OECD (2022) also shows that in the post-pandemic period, the share of new SME lending in total new lending was low, at approximately 30% of the total. The average for G20 countries is lower at about 26% (OECD 2022).

2. G20’s Role in Addressing Financing Challenges Faced by MSMEs

Successive G20 presidencies have prioritized the issue of improving access to finance for MSMEs. Under Türkiye (2015), the Antalya Action Plan recommended supporting long-term financial access for SMEs. The G20, in partnership with the Organisation for Economic

Figure 1: Interest Rates for Small and Medium-Sized Enterprises and Large Firms in Select G20 Countries, 2020 (%)



SMEs = small and medium-sized enterprises.

Source: Compiled from OECD (2022).

² Data from the World Bank Enterprise Surveys indicate that in most regions of the world around 79% of loans require a collateral backup. Many SMEs can only offer movable collateral (such as vehicles or inventory), which is often not well supported by credit registries and enforcement mechanisms in developing countries.

³ Basel III is an internationally agreed set of measures developed by the Basel Committee on Banking Supervision in response to the financial crisis of 2007–09. The measures pertain to minimum capital requirements, liquidity frameworks, and the leverage ratio, designed to strengthen the regulation, supervision and risk management of banks.

Co-operation and Development (OECD), released the High-Level Principles on SME Financing (2015), which suggested that SMEs should be able to access finance through nontraditional instruments and channels. The document also highlighted that financial markets for SMEs need to be more transparent, which would require overcoming information asymmetries in financial markets. This would also be instrumental in reducing the cost of finance and encouraging investors to participate in SME financing. Under the G20 presidencies of Germany (2017) and Argentina (2018), a guidance note was released on the use of alternate data to enhance credit (GPMI, 2018). Under India (2023), the Global Partnership for Financial Inclusion (GPMI) was mandated to advance the agenda on financial inclusion of MSMEs. Consequently, the GPMI carried forward the work on advancing digital financial inclusion and enhancing financial access for MSMEs with organizations such as the SME Finance Forum, the OECD, and the World Bank. One priority area for the GPMI was to improve access to finance for MSMEs, particularly in low-income and developing countries, through innovative methods (including digital infrastructure) for enhancing growth and resilience and reducing informality. Two important proposed action areas were (i) encouraging responsible, scalable, and affordable technology and innovations for advancing the financial inclusion of individuals and MSMEs; and (ii) promoting open, interoperable, reliable, inclusive, and secure digital infrastructure to rapidly advance the provision of digital financial services for individuals and MSMEs (GPMI 2023). -

Against this backdrop, this policy brief examines how digital public infrastructure (DPI) can be leveraged to bridge the credit gap that MSMEs face. Specifically, we examine how data exchange DPIs such as open banking systems are useful for improving access to finance. We study this through the Indian experience with the Account Aggregator (AA) framework. This system is a central bank-regulated entity that allows individuals to share their financial information digitally, in a secure manner from one financial institution (financial information providers) to any other regulated financial institution that operates within the AA network. The AA ecosystem has opened many new avenues for MSMEs by enabling them to access financial services and information.

3. The Indian Experience

Estimates suggest that the Indian MSME sector's credit deficit stands at ₹20 trillion–₹25 trillion (\$240 billion–\$303 billion), at the current exchange rate (Reserve Bank of India, UK Sinha Committee 2019).⁴ MSMEs are often compelled to rely either on their own savings or on unsecured loans from informal sources at higher interest rates. A recent survey of over 2,000 registered MSMEs in India found that their own capital, which is the capital contributed by the owner of a business, is the primary source of finance for approximately 70% of surveyed MSMEs (ICRIER 2023). Only a fifth of the surveyed MSMEs report using bank loans as the major source of finance for their business. Significantly, the ability to access bank loans appears to be correlated to firm size. About 33% of small enterprises and 29% of medium-sized firms use bank loans as a source of finance, compared to 15.7% of microenterprises. A relatively higher percentage of micro firms rely on their own capital (75.1%) compared to small (60.6%) and medium-sized firms (63.4%).

To bridge the credit gap faced by the MSME sector, India is actively seeking to leverage its DPI to improve access to finance. Rapid and continuous innovations in India Stack are contributing to enhancing financial inclusion by providing digital platforms for financial services, including banking and payment services. India Stack is a set of digital infrastructure components that collectively enable interactions and allow various entities (including governments, businesses, and individuals) to conduct transactions electronically. With India's unique identity number, known as Aadhaar, as its foundational layer, India Stack has combined electronic know-your-customer or digital identity and the Aadhaar-enabled payments system or unified payments interface. An important recent addition to the India Stack architecture is the AA network mentioned earlier.

The AA network, unveiled in 2021, is of particular importance from the lens of improving access to finance for MSMEs. As discussed in the preceding paragraphs, the AA is a financial data and information sharing system that aims to improve credit access for customers, essentially by filling the information gap. Following the

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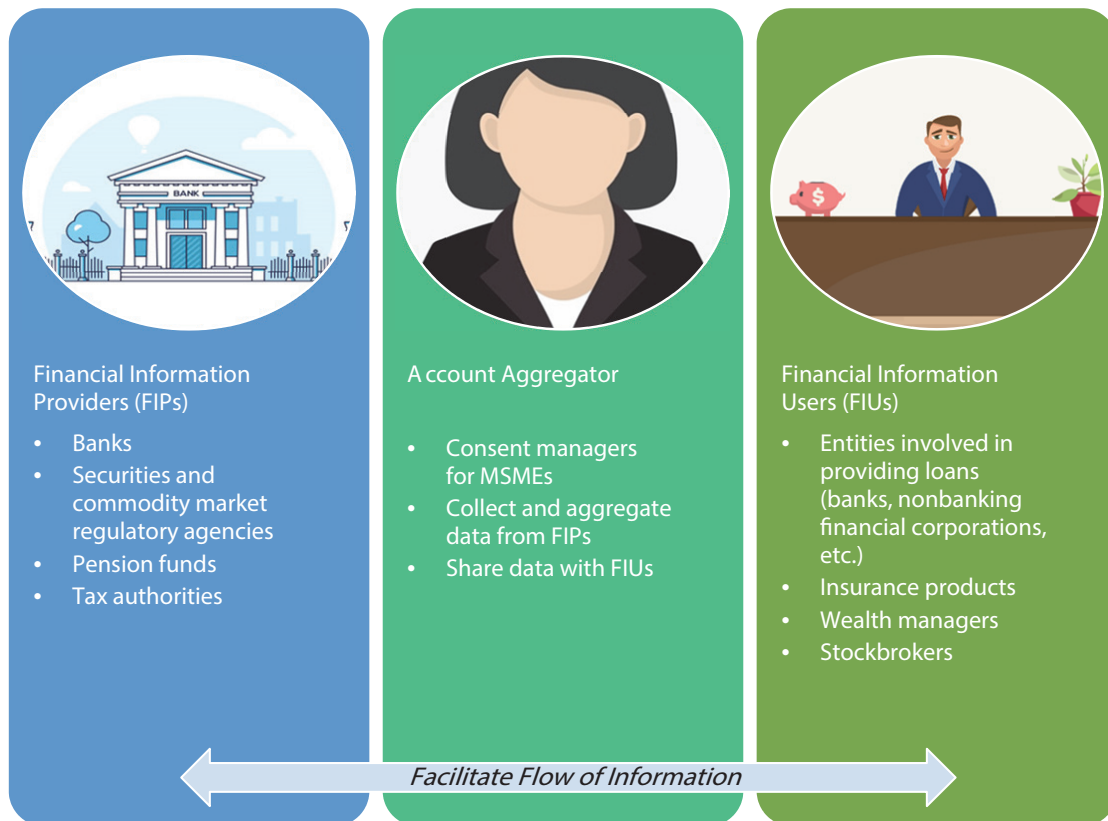
⁴ As of the exchange rate in May 2024.

principles of open banking, the AA allows customers in India to digitally access and share their financial data in a secure and efficient manner, across various institutions (Ministry of Finance 2021). Moreover, it gives customers agency over their data. Data cannot be shared without the consent of the individual, and only when the customer gives consent can an aggregator collect their digital financial data from one or more accounts and deliver the information to the financial institution providing the desired services such as loans or insurance (Figure 2). The AA ecosystem has eased MSMEs’ access to credit by facilitating secure and consent-based data sharing of financial information between providers and users. Account aggregators are data blind—i.e., the consent managers do not see user data. They only serve as a conduit or a medium for facilitating the flow of data in an encrypted format. These intermediary aggregators cannot access, store, or sell the data, only collect and transfer it. The user can revoke consent or change the access period, among other things.

The first phase of the AA rollout (April 2022–January 2023) in India has resulted in early positive benefits to the MSME sector. Out of the total loans disbursed during the period, about 38% of the unsecured business loans were disbursed to MSMEs. The AA network has lowered the cost of doing business, reduced paperwork, and enabled a quick turnaround with loans being available in 3–5 clicks in a completely digital process.

As of December 2023, a total of 1.94 billion cumulative accounts were enabled for data sharing through the AA system with customer consent. The cumulative number of consents raised through Account Aggregators reached 148.50 million in December 2023 (starting from August 2021). Of this total, 40.08 million requests were successfully fulfilled. The average monthly growth rate of successful fulfillments between January and December 2023 stood at 23.24%. The number of new successful fulfillments in December was 5.13 million (which translates to 165,483 per day). As of 31 December 2023,

Figure 2: Account Aggregator Framework



Source: Recreated by authors using information from Sahamati. What Are Account Aggregators. <https://sahamati.org.in/what-is-account-aggregator/>.

the total number of entities that were live on the AA network was 419 (89 as both financial information users and providers, 274 as financial information users, and 56 as financial information providers).⁵ Fourteen account aggregators have nonbanking financial company licenses from the Reserve Bank of India (RBI).⁶

It is worth mentioning here that financial information aggregation is not a novel concept. Both the United States and Europe have account aggregation networks that bring together information from different financial accounts to one place, using direct connections, screen scraping, and a data application programming interface (API). However, there are regulatory and implementational challenges. For instance, the implementation of OpenAPI frameworks has limitations both regarding the nature of data that can be shared as well as the framework for user consent management. In the case of MSMEs, the type of data that can be shared makes a significant difference, especially data pertaining to cash flow, among other things. In fact, Brazil, which holds the current G20 presidency, also has an open banking mechanism, which has similarities with the Indian AA network (Box).

Through the AA network, Indian regulators have tried to broaden the scope of financial data that can be shared, while also making it user-friendly. The network combines DPI and market-led innovations to create efficient solutions for information exchange. Data

sharing takes place between regulated entities. The RBI's Master Direction – Non-Banking Financial Company – Account Aggregator (Reserve Bank) Directions, 2016 set out the regulatory framework to allow a new kind of non-banking financial companies to act as data fiduciaries. The enabling architecture for the AA ecosystem was set up by ReBIT, a wholly-owned subsidiary of RBI. In 2019, ReBIT put in place the OpenAPI specifications that the AA ecosystem follows. India's AA framework is centered on the Data Empowerment and Protection Architecture (DEPA), which follows a system of data portability and gives users agency of their data. Specifically, DEPA “empowers people to seamlessly and securely access their data and share it with third-party institutions through consent managers” (NITI Aayog 2020). This is supported by India's Digital Personal Data Protection Act, 2023, which governs the processing of digital personal data in India. The act mandates the establishment of a data protection board and the consent managers have to be registered with the board.

The success of such networks lies in both the quality and magnitude of data that can be shared through them. To boost the adoption of the AA network, RBI in November 2022 added the Goods and Services Tax Network (GSTN) to the AA network as a financial information provider. As an integrated interface for indirect taxation, for the government and taxpayer, the GSTN becomes a robust and valuable source for cash flow including monthly

Open Banking in Brazil

Like India, the enterprise landscape in Brazil is also dominated by small enterprises, and access to finance remains a challenge for these businesses. With the view to enhancing access to finance, the Central Bank of Brazil and the National Monetary Council set out principles for open banking. As in the case of India, the principles allow sharing of data and services in a standardized format between institutions licensed by the Central Bank of Brazil, including financial institutions.

In terms of the framework, Brazil follows a decentralized architecture for data sharing, which takes place through standardized application programming interfaces covering three steps: consent, authentication, and confirmation. As in India, Brazil also follows “consent-based” sharing of information. This is in alignment with the principle that the ownership of personal data lies with consumers themselves and, therefore, their use should benefit them. Consumers are therefore “data owners.” Consent given at any point in time is valid for 12 months, and consumers have the right to revoke their consent. Each consent is tied to a specific purpose. Authentication of data is the legal responsibility of the financial institutions as “data providers.” Financial institutions are also legally responsible to ensure that data recipients access only that information and capability for which the data owners have provided consent.

In practice, three types of products and services are offered through the open finance framework: data on product and services, customer data including financial information related to credit and their deposit accounts, and payment services. While the private sector coordinates the ecosystem, the Central Bank of Brazil establishes the rules and compliance. The entire ecosystem is supported by a centralized platform, which also includes a dispute resolution module.

Source: Bank for International Settlements. 2022. *API Standards for Data-Sharing (Account Aggregator)*. <https://www.bis.org/publ/othp56.pdf>.

⁵ Data provided by the Sahamati (<https://sahamati.org.in/>) team.

⁶ RBI is India's central bank. The AA network builds on the RBI's Non-Banking Financial Company - Account Aggregator (Reserve Bank) Directions, 2016. Updates to the directions are accessible at https://www.rbi.org.in/Scripts/BS_ViewMasDirections.aspx?id=10598.

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sales, turnover, and profit, and thereby assessing the creditworthiness of small businesses.

Apart from enabling a simple and secure consent mechanism for credit-seeking MSMEs, the AA network is also likely to enhance competitiveness among regulated lenders. For instance, the framework levels the playing field between banks and nonbanking financial companies. Since banks host current accounts of businesses, as a source of day-to-day cash flow information, they thus have an edge over nonbanking financial companies. With the GSTN data access through the AA network, lenders obtain vital insights into an enterprise's cash flows. Such additional information can be useful to evaluate the credit of MSMEs, create a risk profile, and make a customized loan offering following risk-based pricing. It is worth noting that loans as small as ₹160 (\$1.80) are being disbursed on the Open Credit Enablement Network in which the account aggregators function as enablers.

4. Policy Recommendations and Conclusions

In this policy brief, we highlight how data exchange DPIs can bring efficiency and reduce costs by seamlessly sharing financial information to address the credit gap faced by MSMEs. Data exchange DPIs such as India's AA network are a step toward open banking, a banking practice that connects financial information users with financial information providers by providing access to the financial data of customers through an API. They act as consent managers for these customers. Several other G20 countries such as the United Kingdom have also undertaken open banking initiatives. Significantly, Brazil, which holds the current G20 presidency, also launched

an open finance system in 2021, which is similar to India's consent-based data-sharing system. Open banking is an important system, especially for MSMEs, as it replaces physical collateral with information collateral.

Through data democratization and digital investments, open banking systems can have significant and far-reaching impacts on the ability of MSMEs to access credit and financial products and services from a variety of providers. This increased competition can result in lower fees, better interest rates, and more customized financial solutions for SMEs.

Against this backdrop, the G20 under the Brazilian presidency should seek to encourage and foster knowledge sharing on open banking systems, including their design, development, and operations, as well as their impact on improving access to finance for MSMEs. This will help motivate and accelerate the adoption of such systems globally, particularly in developing economies to help address the financial information gap faced by MSMEs. The following recommendations may be discussed under the Brazilian presidency.

Standardizing templates for facilitating cross-border financial access. There is a need for standardized templates for data sharing, especially for easier cross-border financial access. In the long run, the ambition of open finance systems should be to enhance cross-border financial access. The G20 countries could also examine how open banking systems can be developed globally to ease cross-border financial access, especially for trade finance. Open banking is based on interoperability and networking between banking information and service providers, creating a smooth user experience while networking users' accounts. APIs are a critical part of open finance. To enable the secure exchange of information

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between different parties across countries, the G20 could consider establishing a certain level of standardization for data sharing and possibly agreements on the technical models that enable data to be shared.

Expanding financial information sources by integrating e-commerce transactions data. To make open finance beneficial for MSMEs, there is a need to expand and enhance the scope of data sources. The success of open finance will lie in the comprehensiveness of the network and its ability to expand and enhance data sources on MSMEs. Globally, as MSMEs expand their digital footprint through e-commerce platforms, the G20 countries need to deliberate how information compiled through the platforms (public and private) on their transactions, sales, revenues, and other such variables can be leveraged in a secure manner through data exchange DPIs. For instance, a recent MSME survey of firms selling through e-commerce platforms in India found that firms were able to access loans from fintech companies without collateral by linking their earnings on e-commerce platforms as guarantees for a loan. This also highlights a shift from loans based on physical collateral to information collateral. By aggregating cash flow and transactions data on MSMEs, e-commerce platforms have the potential to become critical digital financial service intermediates. This enables creditors to gain insights into the cash flow and risk profiles of MSMEs, based on which financial products and pricing can be customized. Therefore, it is important to examine how large e-commerce platforms can be integrated into the open banking network, especially by tying up with the consent managers. Private companies such as e-commerce platforms can be backed by self-regulatory organizations or network-level entities.

Developing underwriting rules based on the quality of data. As the scope of sources expands, it is important to determine underwriting rules taking into account the quality of data. When information

collateral replaces physical collateral to obtain a loan, the credibility of information becomes an important factor in determining the success of the system. An important aspect of this process is the weight given to the information from different platforms. Financial information users can decide underwriting rules of loan contracts to MSMEs, including interest rates and payment terms, depending on the information received. Therefore, the G20 also needs to deliberate on what such a weighting strategy could be, particularly when information flows take place across a variety of sources in different countries.

Enhancing digital and financial literacy and education. Finally, for open banking systems to be effective, MSMEs should have sufficient digital and financial literacy. The above discussion highlights that open banking systems can expand the reach of financial services to vulnerable segments, particularly MSMEs. However, the success of such networks lies in widespread and seamless usage. To enable their adoption and use, MSMEs—and individuals—must be adequately empowered by educating them about the use of such systems. An OECD-INFE report (2021) revealed that MSME owners in many countries lack adequate financial literacy. It found that in the G20 countries, only 27% of MSME owners with up to 9 employees and 41% of those with 10–49 employees demonstrated high levels of financial literacy. Due to their lack of financial literacy, MSMEs may have trouble obtaining financing and other financial services. Investors, for instance, may be reluctant to invest in MSMEs that lack a strong grasp of financial management capabilities, which could make it difficult for such enterprises to secure favorable lending conditions. Additionally, such MSMEs may not be aware of available financial products and services such as grants and loan schemes, among others, and may miss out on opportunities to grow their business further. Thus, the G20 must reaffirm its commitment to advancing digital and financial literacy across countries.

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