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FINTECH BRIEF

E-MONEY REGULATION IN BRAZIL

NO. 17

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April 2024

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The editor of the IADI Fintech Brief series is Bert Van Roosebeke (IADI).

This publication is available on the IADI website (www.iadi.org).

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Executive Summary

Effectively regulating e-money issuers (EMIs) demands a balancing act between allowing for innovation and fostering competition, while balancing for the potential costs in terms of risks to the system. In Brazil, the evolution of EMIs' legal regime and regulatory framework over the last 10 years followed the Central Bank of Brazil's strategy of kindling a nascent EMI industry by first defining simple, and yet effective regulatory requirements that were latter upgraded as EMIs grew in size and complexity. Currently, due mainly to the way consumer funds are managed, e-money accounts are not covered by the two Brazilian DIS, Fundo Garantidor de Créditos (FGC) and Fundo Garantidor do Cooperativismo de Crédito (FGCoop). Nevertheless, it is important to notice that resolution mechanisms have yet to be tested in real life, as there has never been an actual EMI failure in Brazil.

Today EMIs play an important role in providing payment services to a significant portion of the Brazilian population, especially low-income households, thus helping to promote financial inclusion. Moreover, EMIs fostered competition and innovation, lowering transaction costs, and giving rise to new products and services. The fact that these days virtually all Brazilian retail banks offer e-money accounts and services, demonstrates the relevance of this technology.

1. Introduction

The adoption of digital technologies in the financial system has led to a rapid increase in the use of e-money, especially in developing countries. This rapid increase has given rise to relevant concerns as to the safety of this form of value-storing. Such concerns led to intense debates on the efficacy and applicability of traditional financial safety net schemes, such as the deposit insurance system (DIS), to nonbank e-money issuers (EMIs). The objective of this Brief is to share insights from the Brazilian experience in fostering a burgeoning EMI environment whilst keeping the fine balance between, on one side, innovation, efficiency, and competition, and, on the other side, customer protection, risk management, and proportional regulation. The implications for the Brazilian DIS responsible for banks and credit institutions, Fundo Garantidor de Créditos (FGC), are also discussed.

IADI defines "e-money" as an electronic store of monetary value on a technical device that may be widely used for making payments to entities other than the e-money issuer. The device acts as a prepaid bearer instrument that does not necessarily involve bank accounts in transactions.

2. E-Money in Brazil – An Overview

The digital revolution made access to financial services and products easier, cheaper, and more widespread. It is not a coincidence that today cell phones are the most employed access channel for using financial services in Brazil (see chart 2.1), while the number of bank branches has decreased by 8.56% between 2019 and 2022 (see chart 2.2). In that regard, e-money and EMIs play a fundamental role in increasing the share of the population with access to basic financial services. In Brazil, e-money accounts are used mainly for making small-value payments and transferring funds, so average balances tend to be small. Average transaction values also reflect this characteristic: 37.00 Brazilian reals (BRL) or approximately USD 7.55 in the 1st quarter of 2023 (see chart 2.3). The Brazilian regulation does not impose any limits in terms of balance amounts, number of transactions and total active accounts, both at the level of individual EMIs and at the level of the system as a whole. Therefore, EMIs have considerable flexibility in defining the operational parameters that are more adequate to their business models (for instance, no transaction fees for the first 5 transactions in any given date).

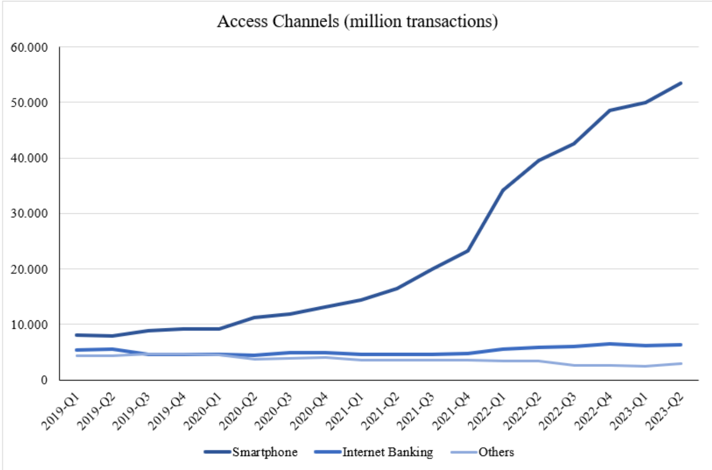

Chart 2.1 - Number of transactions per access channel
Source: BCB (2024)(1)

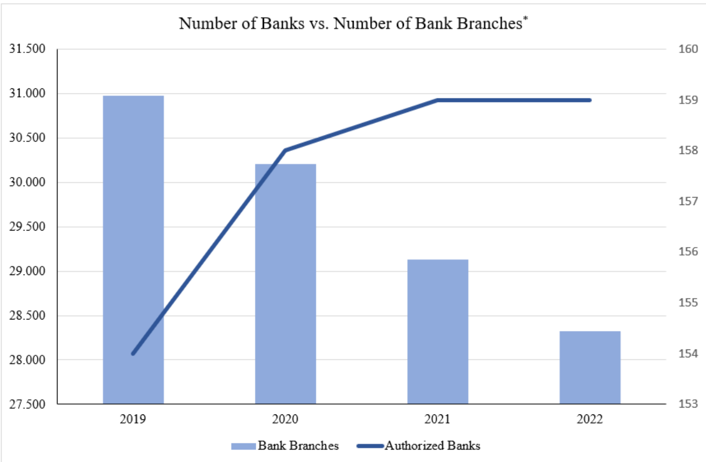

Chart 2.2 - Number of banks vs. number of bank branches*
Source: BCB (2023)(2)
* Include banking services outposts

E-money accounts are attractive for various reasons, and it is important to bear in mind that those reasons have changed as the environment evolved and incumbents adapted their own strategies. For instance, EMIs usually keep maintenance and transaction fees as low as possible, as opposed to traditional banks that historically sustained comparatively inelastic maintenance and transaction fees.[1]

EMIs also embodied the fintech spirit from the beginning: customer-centrism, attention to the user experience (UX), accessible language, affordable services, and use of multiple communication channels, including social media. More recently, banks recognised the necessity to invest more in digital channels for customer acquisition and servicing, including offering e-money accounts.

[1] The average monthly fee in December 2023 for standard service packages I, II, III and IV was, respectively, USD 5.34, USD 4.50, USD 6.82 and USD 8.67. Source: STAR system (Febraban, Brazilian Banks Federation), December 2023. Standard services packages are defined by the Central Bank of Brazil so customers can easily compare maintenance costs (Resolution CMN Nº 3,919, November 25th, 2010.). It is important to notice that banks are free to offer different service packages. High net worth customers, for instance, usually benefit from a zero-fee policy.

According to a recent poll caried out by Serasa Experian[2], a credit bureau, 51% of e-money users in Brazil have accounts in more than one EMI, and of those, 33% have 2 accounts and 67% have than 3 accounts.

Serasa Experian 2021 Poll

- 84% of e-money users also have traditional bank accounts.
- 90% of e-money users have one or more credit cards.
- Top 5 bills paid using e-money: (53%) pre-paid cell phones; (53%) credit cards; (38%) pre-paid transportation tickets; (36%) utilities and; (36%) telecom services.
- Gender: 49% women, 51% men.
- Age: 40% between 18 and 29, 47% between 30 and 49 and, 13% above 50.
- Monthly income: 25% A-B classes (above BRL 5,225/USD 1,067), 39% C class (between BRL 5,225/USD 1,067 and BRL 2,091/USD 427), 36% D-E classes (below BRL 2,091/USD 427)

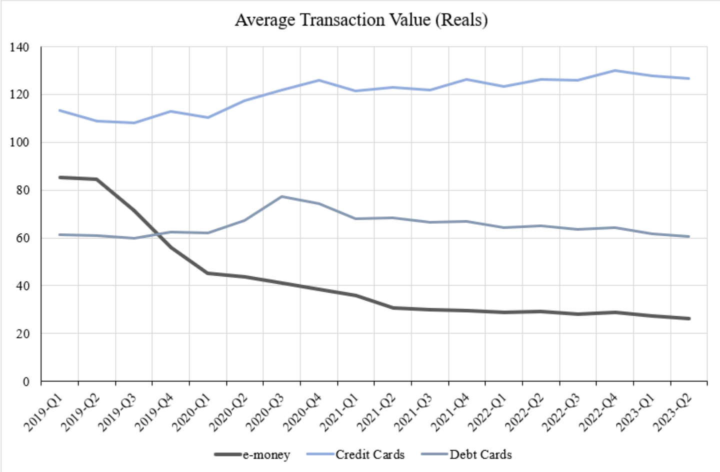

Chart 2.3 -Average transaction value
Source: BCB (2024)(1)

As mentioned, opening e-money accounts is simple[3] and virtually free of charge, so customers continuously look for additional EMIs offerings going after better commercial conditions and other advantages (lower rates for using ATMs, small transaction fees, mileage programs, contactless and international cards etc.). This is particularly true in the case of young, digitally savvy, customers.

E-money accounts can be loaded either via electronic transfers from other accounts (e-money or not) or via bank slips, the latter being the most popular method with the low-income population. One of the main reasons is that, besides banks, lottery houses can accept payments via bank slips to load e-money accounts (i.e. cash in). Caixa Econômica Federal (Federal Savings Bank) is the sole franchisor of lottery houses and provider of the payment services offered, including receiving payments via bank slips. Their number (around 13,000, although not all of them provide this type of service) and presence in places that would not justify the costs of setting up and maintaining a bank branch, provide additional market penetration[4].

The number of e-money transactions in Brazil has been growing consistently over the last 5 years, reflecting the increasing number of EMIs and the popularity of e-money (see chart 2.4). It is worth noticing that, as they grow bigger, some EMIs take the next step, either by applying for banking licenses or buying/merging with pre-existing banks, thus providing new products and services to their customer base. At the same time, incumbent banks are engaging with new technologies to protect their market share.

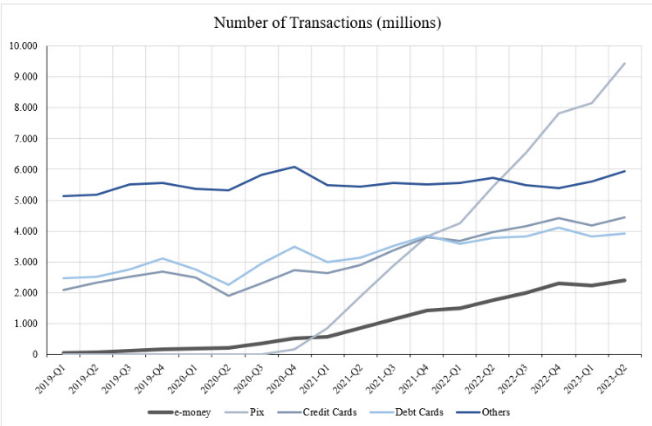

Chart 2.4 -Number of transactions
Source: BCB (2024)(1)

[2] Serasa Experian and Opinion Box (2021).
[3] In Brazil it is mandatory to present a valid ID document to open an account. In the case of mobile applications, the document is scanned using the cell phone's camera. Backend applications such as OCRs (Optical Character Recognition), face match algorithms and access to private and public databases are used to validate the document's authenticity. For this reason, accounts cannot be opened directly via a call center.
[4] As a matter of fact, lottery houses have become full stop shops for services such as paying bills and taxes, buying credits for pre-paid cell phones, verifying account balances, receiving benefits related to government assistance programs, etc.

3. Deposit Insurance and E-Money in Brazil

There are two private deposit insurers (DIS) in Brazil, Fundo Garantidor de Créditos (FGC) and Fundo Garantidor do Cooperativismo de Crédito (FGCoop). Their main difference concerns their members – FGC is the DIS for banks and credit institutions, whereas FGCoop is the DIS for cooperatives. FGC and FGCoop are both *ex-ante* funded, privately administered and have no backstop from the Brazilian government.[5] Besides being responsible for the reimbursement of insured deposits, FGC and FGCoop can engage in liquidity provision transactions with their members, as well as provide financial support in resolution situations. As such, both FGC and FGCoop mandates are that of a Pay-box Plus DIS. In accordance with local regulations, DIS coverage in Brazil is restricted to bank deposits and certain types of funding instruments[6], so e-money issued by EMIs and banks are currently not covered by Brazilian DIS. The rationale behind this decision is discussed in Section 6.2.

4. EMI's Legal Regime and Regulatory Framework in Brazil

4.1. The First Years

Until 2013, only payment services offered by banks[7] were supervised by the Central Bank of Brazil (BCB) because of the roles and responsibilities defined in Law No. 4,595 of December 31st, 1964[8] and subsequent laws and regulations. For example, non-bank entities providing payment services were not contemplated by Law No. 10,214 of March 27th, 2001, that created the Brazilian Payments System (Sistema de Pagamentos Brasileiro – SPB)[9]. Consequently, payment systems not engaging in financial intermediation – which already existed in the form of pre-paid cards, private label schemes[10] and even e-money – were generally not regulated by BCB. However, with the modernisation of the payment industry and the exponential growth of electronic payment systems since the late 1990s[11], the BCB and Brazilian antitrust government agencies produced a series of studies and reports concerning the Brazilian retail payments market, which led to the development of a specific legal framework for this sector in 2013. Although the Brazilian legal framework for payments services shares several characteristics with the banking laws already in place, it is a separate and independent regime.[12] Nonetheless, the new 2013 regulatory framework defined that non-bank payment service providers should be regulated and supervised by the BCB. However, payment services and financial intermediation activities remained subject to different requirements and licenses from banks. For instance, while payment institutions were prohibited from providing credit services, financial institutions carrying out financial intermediation activities (e.g., banks) could only provide the payment services expressly determined by the BCB. The BCB also defined specific regulations for payment service providers (named "payment institutions" from then on).[13,14]

Currently, e-money is defined by law as "resources in national currency stored in a device or electronic system that allows end users to carry out payment transactions"[15]. Therefore, it encompasses both hardware and software-based products. Non-deposit-taking issuers of e-money are regulated as EMIs.

In the first years of this new framework, payment institutions, generally faced few regulatory entry barriers. For example, smaller institutions were not required to obtain BCB licenses, certain types of payment schemes were not subject to direct supervision, etc. These low barriers to entry led to a rapid proliferation of EMIs and closed-loop payment schemes, especially those that were exempt from direct supervision.[16]

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[5] A new congressional bill (PLP 281/2019) addressing this matter is to be considered by the Brazilian Congress in the near future. This bill defines a new resolution framework for all entities supervised by the Central Bank of Brazil, financial markets infrastructures, exchanges, and insurance companies, among others.
[6] The full list can be found at https://www.fgc.org.br/garantia-fgc/sobre-a-garantia-fgc and https://www.fgcoop.coop.br/garantias.
[7] BCB (2005, pp. 126).
[8] Law No. 4,595 set the foundations of the present-day Brazilian financial system.
[9] It's worth mentioning that this was done on purpose, as retail payments would be addressed in a subsequent phase, commonly known as SPB2.
[10] Credit cards only accepted by the issuer establishment, such as large retailers.
See https://www.bcb.gov.br/en/financialstability/paymentschemes
[11] BCB (2007, pp. 1).
[12] Law No. 12,865, of October 9th, 2013.
[13] Resolution BCB No. 3,682, November 4th, 2013.
[14] Unless otherwise indicated, for readers' benefit we'll use EMI as a synonym of "payment services providers" and "payment institutions".
[15] Law No. 12,865, of October 9th, 2013, Article 6th, Item VI.
[16] https://www.bcb.gov.br/estabilidadefinanceira/estatisticaspix

4.2. Evolution

As payment institutions became more popular and their transaction's share in Brazil grew, the BCB decided to update the regulatory framework concerning EMIs.[17] The major changes are listed below.

(i) Regulatory licenses for new entrants became mandatory, but pre-existing EMIs were granted a grace period of 9 months to two years to obtain a license, depending on their transaction volumes and e-money balances (small EMIs had more time to comply). Because transactions based on interoperability agreements with larger payment systems were also considered, some - previously considered - small payments systems had a grace period similar to payment systems already deemed as large systems.[18]

(ii) EMIs, including pre-existing unlicensed institutions, were required to comply with minimum regulatory standards concerning how they presented themselves to the public (naming criteria, so the public would be able to distinguish them from the traditional banks), corporate governance, fee structure, risk management, internal controls and, most notably, the need to comply with the same rules concerning the allocation of clients' assets (i.e. client funds must be held in Central Bank money or in high quality liquid assets).

(iii) All participants[19] of the BCB's instant payments scheme (Pix) were obliged to comply with minimum regulatory standards related to Anti-Money Laundering and Combating the Financing of Terrorism, cyber security, liquidity risk management and operational risk controls. These minimum regulatory standards were applicable even in the case of EMIs that had not obtained a license from BCB.

In March 2022, the BCB enacted another new regulation[20] aiming at enhancing EMIs' prudential requirements. The previous efforts to incentivise new entrants by relaxing regulatory license requirements now shifted toward more structural initiatives to increase competition between current market participants. Such initiatives include, *inter alia*, allowing other types of non-banking financial institutions to act as EMIs, promoting open banking, stimulating the use of Pix transfers and establishing trade repositories for credit card receivables.

The recently launched Pix system (2020) and open banking are helping the development of a friendlier environment for smaller and innovative EMIs in Brazil, since they stimulate open infrastructures and easier data sharing. Current research shows that one of the main consequences of open banking worldwide has been increasing innovation related to payment and account services.[21] Accordingly, in January 2021 the BCB announced the Regulatory Sandbox – 1st Cycle[22], defining the requisites for creating a controlled testing environment. The main objective of this sandbox is to foster the development of innovative financial and payment solutions, including new open banking and Pix applications. Such initiatives have created an environment of intense competition in the payment services industry, helping new entrants to acquire a relevant part of incumbents' market share and expanding electronic payments.

A good measure of these initiatives' successfulness is the growing number of EMIs that, after achieving a relevant position, apply for a banking license. Considering the large customer base amassed by these EMIs, it is natural to pursue new revenue sources from more traditional banking products, a trend that has attracted growing interest from investors willing to provide the necessary capital in exchange for equity. Therefore, sometimes creating an EMI is not the end goal *per se*, but a step towards a much bigger structure in order to play the bigger game. In this sense, there is a very well-known case in the Brazilian market of an EMI with a sizeable customer base that in 2019 successfully managed to transfer 6 million e-money accounts to a new entity authorised to provide financial services (i.e. a bank). Besides being consistent with the BCB's efforts to foster more competition between banks by adding new players to

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[17] Circular No. 3,885, of March 26th, 2018, and BCB Resolution No. 80, of March 25th, 2021,

[18] Resolution CMN Nº 3,682 (2013) did not consider transactions based on interoperability agreements for calculating the limits for mandatory license application. It was thus possible for EMIs with large transaction volumes to operate without a BCB license, an exemption supposed to benefit small, low risk, EMIs. BCB Circular No 3,885 (2018) corrected this problem by incorporating transactions based on interoperability agreements into the definition of transaction volumes and making the necessary adjustments. BCB Resolution No 80 (2021) used the same criteria for defining the license application schedule.

[19] Banks and EMIs with more than 500,000 active accounts are obliged to offer Pix transactions to their clients (BCB Resolution No. 1, of August 12th, 2020). Providing Pix transactions is optional below this limit, but due to its popularity, not offering Pix transactions is not an option for the vast majority of business models.

[20] BCB Resolution Nº. 198 of March 11, 2022.

[21] Instituto Propague (2021).

[22] BCB Resolution Nº. 50 of December 16, 2020.

this market, this process also brings large (former) EMIs to an environment where regulation is stricter and capital requirements more substantial, thus mitigating the negative impacts of their possible failures[23].

5. Payment Accounts and Bank Deposits

According to the Brazilian regulation, e-money accounts managed by EMIs are defined as “prepaid payment accounts”. These accounts are denominated in BRL and can be used only to perform payment transactions based on funds transferred beforehand. From a legal standpoint, prepaid payment accounts and checking accounts in Brazil are both deemed as “deposit contracts”[24]. However, bank deposits and prepaid payment accounts are subject to specific contractual and regulatory settings that distinguish them from each other.

Although under the Brazilian law both instruments constitute customer claims against the depository institution, and not property rights over deposited funds, the rules defining how these funds can be used by the depositary institution differ significantly in each case. Bank deposits are, in essence, fundraising instruments for financial intermediaries that are allowed, within certain limits, to invest these funds in the form of credit and other investments. In Brazil, prepaid payment accounts, on the other hand, consist of money storing and transferring devices, and their providers (EMIs) are not allowed to invest clients’ funds in any way other than the few cases allowed by the regulation and cannot create loans with these funds. These fundamental differences give rise to two immediate effects:

Prepaid payment accounts do not follow the traditional fractional reserve system and all e-money must be backed by EMI’s reserves on a 1:1 proportion.

EMIs’ revenues come primarily from fees charged for payment services provided, and not from interest rate spreads.

Despite the differences in relation to bank deposits, prepaid payment accounts are quickly gaining popularity among Brazilian consumers. According to Apptopia website[25], the top five most downloaded finance applications in the first half of 2022 related to EMIs. Moreover, Fintech Magazine[26] also reported that 6 out of the top 10 most downloaded banking applications in 2022 were from Brazilian companies, with NuBank app holding the overall top position. The main reason is that, from the customer’s perspective, there are no significant differences between most EMIs and banks, apart from credit services provided exclusively by banks. In fact, payment accounts and bank deposits have similar structures and can be used to store value and to make and receive payments[27] using virtually the same payment services (card transactions, Pix, initiation through third party platforms, electronic transfers etc.).[28] Prepaid payment accounts, however, benefit from the fact that clients can receive non-interest rewards based on the volume of funds transferred[29], which is strictly forbidden in the case of bank deposits.

6. Prudential Regulation

As mentioned earlier, e-money accounts are not covered by the Brazilian DIS. However, Brazilian regulators have put in place a comprehensive regulatory framework for EMIs to mitigate risks and protect consumers.

6.1. Regulatory Licenses

Today, EMIs are required to obtain a regulatory license from the BCB prior to the commencement of their operations. In some cases, already licensed financial institutions are exempt from pursuing a specific EMI license but are still subject to the same regulations regarding e-money practices. Licensing requirements comprise BCB approvals with

[23] A potential scenario is going to be described in Section 6.
[24] According to the Brazilian law, a deposit contract is one where a party (depositary) receives movable objects from another party (depositor) to keep them until they are reclaimed.
[25] https://blog.apptopia.com/top-10-finance-banking-apps-h1-2022
[26] https://fintechmagazine.com/articles/top-10-mobile-banking-apps-of-2022-by-number-of-downloads
[27] Ehrentraud, J., et al. (2021, pp. 6).
[28] Bossone, B. (2017).
[29] In a way similar to mileage and fidelity programs in other industries.

respect to business model feasibility, economic, technical, and operational capabilities, governance structures, controlling and relevant shareholders and directors' background and technical knowledge.

6.2. Management of Consumer Funds

EMIs not licensed as financial institutions are prohibited from engaging in any type of financial intermediation activity and cannot invest funds from prepaid payment accounts in any other way than the two alternatives defined in the regulation. These prohibitions mean that an EMI is not allowed to provide credit lines even on an intraday basis, preventing customers from executing underfunded payment transactions. This limited scope is, in fact, the flip side of EMIs being subject to a simpler, less demanding prudential regulation, so depositor protection and risk management concerns must be addressed by other means. All EMIs – whether licensed financial institutions or not – must keep depositor funds in a special reserves account in the BCB (CBL Model[30]) named E-Money Account (*Conta Correspondente a Moeda Eletrônica* – CCME) or invest in government bonds (HQLA Model[31])[32]. In both cases, rigorous regulatory requirements and a robust operational environment ensure that depositors' funds are safe and readily available. The CCME can only be used as a reserves account and has no direct link to any clearing and settlement services, while government bonds purchased for backing e-money accounts must be issued by the Brazilian Federal Government and cannot be linked to foreign currencies. Also, the BCB may take interest-bearing deposits from EMIs. EMIs must ensure that at the end of each business day all issued e-money is adequately (i.e., on a 1:1 basis) covered by funds or government bonds, depending on the model adopted. In the event of a shortfall the EMI is obliged to cover the gap using its own funds to increase its CCME balance, buy more government bonds or both. Failure to comply would lead to regulatory sanctions, including liquidation.

This system ensures that all e-money issued by EMIs is backed by safe, liquid assets on a 1:1 basis, providing transparency on EMI management of its depositors' funds. In addition, depositors' funds held by EMIs, as well as in-transit funds, are legally segregated from the EMI's balance sheets, so they cannot be encumbered or accessed by third-party creditors in any case. This segregation also minimises potential internal fraud and mismanagement events[33], which increases consumer confidence in the system[34]. From a systemic risk standpoint, the Brazilian approach to e-money preserves healthy EMIs by not exposing them to the failure of unsound entities (whether other EMIs or banks), as well as from risks arising from maturity mismatches in their books, increasing resilience to runs.

As mentioned previously, the Brazilian regulatory framework establishes that e-money should not be covered by deposit insurance. This decision reflects the fact that the risks posed by Brazilian EMIs are substantially smaller than the risks posed by banks. EMIs cannot leverage their portfolios (1:1 ratio), are exposed to sovereign credit risk only (government bonds and Central Bank reserves), have small exposures to liquidity and market risks (see adjacent box) and must

Credit, Market and liquidity Risks in HQLA

The assets that back e-money issued by an EMI in the HQLA model are subject to price changes that reflect shifting market conditions. Hence, adverse market conditions can lead to relevant losses in the HQLA portfolio, so the EMI would violate the 1:1 priciple. The Brazilian regulation requires that HQLA portfolios must consist of government bonds issued by the National Treasury only, so the portfolio is exposed to sovereign credit risk alone. Moreover, government bonds have to be denominated in BRL and their maturity cannot exceed 540 days (1.5 years), thus limiting market risk. A deep, liquid, repo market backed by government bonds (BRL 6.2 trillion/USD 1.27 trillion per day on average in 2022) ensures that government bonds can be easily converted into funds that are readily available via real time gross settlement (RTGS). The government bond of choice is the one-day interest rate Treasury Bill. This bond accrues, on a daily basis, the 1 day interest rate, being equivalent to a bond with a maturity of 1 day that is continualy reinvested. In the absence of credit risk frictions, this bond will always yield a positive return, as long as the one-day interest rate remains positive. Because e-money accounts do not pay interest, EMIs make a profit notwithstanding current market conditions. One-day interest rate Treasury Bills correspond to 43% of the National Treasury's outstanding debt (July 2023). That amounts to 2.5 trillion BRL/ 510 billion USD.

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30 Central Bank Liability Model. See Bank of England (2021).
31 High Quality Liquid Assets Model. See Bank of England (2021).
32 Brazilian EMIs often use a combination of CBL and HQLA, as they are not mutually exclusive.
33 Licensing requirements include a good standing assessment of the controlling shareholder and main executives. This also minimises the risk of malpractices.
34 For instance, the distrust crisis triggered by Tether's reserves management, Wirecard's fraud scandal, and TerraUSD's algorithm failure to maintain USD parity, to name a few.

comply with a sound regulatory framework that limits their activities. It is important to keep in mind that deposit insurance mechanisms impose costs to the society, so extending coverage to a new product must be carefully evaluated in terms of costs vs. benefits.

6.3. Capital Requirements

As mentioned earlier, the BCB established a new regulatory framework for EMIs in March 2022 aimed at increasing prudential requirements and reducing regulatory asymmetries between market participants. In the specific case of capital requirements, the new regulation stipulates that EMIs must keep 2% of the average value of monthly payment transactions executed over the last twelve months as own capital. This requirement, however, is not applicable to financial conglomerates led by financial institutions, whose capital requirements are calculated in accordance with the standard prudential regulation that also encompasses payment services.

This new approach reflects the Brazilian regulators' decision that EMIs should hold more financial resources to cope with potential risks arising from their activities, including losses in their HQLA portfolios with negative impacts on the 1:1 ratio and losses related to operational risks - human error, systems failures, fraud, cyberattacks, etc.

6.4. Consumer Protection

As mentioned before, from the client's perspective, prepaid payment accounts and checking accounts are very similar. Therefore, consumers might find it difficult to figure out if a given provider is an EMI or a bank. Without proper distinction, wrongdoings committed by EMIs could negatively impact the public's trust in the whole financial system. In order to highlight the differences between EMIs and banks, Brazilian EMIs are expressly prohibited from using the word "banco[35]" in their names and are required to state clearly in their communications and websites their status of payment institutions[36]. Moreover, Brazilian consumer protection laws hold EMIs liable for losses related to frauds perpetrated against their clients and connected to prepaid payment accounts' misuse. Claims must be filed directly with the EMI using dedicated communication channels. Customers can also appeal to the EMI's independent ombudsman, the consumer protection authorities and the BCB[37].

7. EMI Resolution/Liquidation

Generally speaking, EMI resolution or liquidation follows the same principles that guide other non-bank financial institutions' resolution processes. Because judicial bankruptcy procedures are not triggered immediately, all resolution tools and investigative powers are first granted to a liquidator designated by the BCB. The BCB may intervene should an EMI face financial difficulties or in case of repeated violations of regulatory requirements. If the BCB considers that an EMI is no longer viable and/or that the regulatory violations are too severe, the EMI might be liquidated. During management takeover, the liquidator appointed by the BCB has broad powers to negotiate the EMI's assets to pay out all creditors, including e-money holders, whose assets remain ringfenced during this period. That being said, it is important to notice that these mechanisms have yet to be tested in real life, as there has never been an actual EMI failure in Brazil. This raises questions concerning some specific scenarios, such as coverage of EMI client losses due to fraud.

8. Conclusion

The experience shows that effectively regulating EMIs demands a balancing act between allowing for innovation and fostering competition, while balancing for the potential costs in terms of risks to the system. In that direction, recent adjustments to the prudential regime of EMIs and other payment institutions in Brazil focused on strengthening consumer protection and reducing regulatory asymmetries between market participants (a movement towards the principle: "same activity, same risk, same regulation"), albeit at the cost of raising capital requirements (and, thus, barriers to entry), which could have consequences for competition in the Brazilian banking sector.

The Brazilian authorities are aware that when designing prudential regulation and protection measures, it is essential to consider the particularities of any given context[38], especially in the current development stage of the Brazilian

[35] "Banco" is the Portuguese word for bank. Interestingly enough, EMIs are not barred from using the English word "bank" in their names.
[36] BCB Resolution No. 80, March 25, 2021.
[37] The BCB publishes on its website a ranking of the financial institutions with most complaints (www.bcb.gov.br/meubc).
[38] World Bank Group (2021, pp. 140).

market, where a highly competitive EMI market is undergoing structural changes. Many Brazilian EMIs have not yet fully defined their business models, and some strategies and products have yet to prove profitable. In this sense, excessive or incompatible regulatory costs may harm the industry's transformative potential for economic efficiency and financial inclusion, while producing few gains related to consumer protection and risk management.

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