Foreword

During the last decades, assuring the normal, safe and efficient functioning of payments systems has become a central role of central banks. The main objective embedded in this role consists in assuring that money circulates, by means of payment instruments, in a safe and efficient manner.

In order to achieve such objectives, the Banco Central do Brasil (BCB), the central bank of Brazil, is responsible for the regulation, supervision, and oversight of clearing systems, payments schemes and payment institutions operating in Brazil.

The financial crisis that occurred in 2008 has led monetary authorities worldwide to enhance their methods of monitoring financial markets risks. In this context, improving the norms and principles underlying the functioning of financial market infrastructures is of utter importance. Amongst the main measures adopted, it is worth noting: a review of the international guidelines applied to market infrastructures and, as a result, more strict standards have been adopted; encouraging the use of electronic platforms in financial transactions, especially those involving derivatives; encouraging the use of central counterparties in the clearing of a greater number of securities; the requirement to centrally record financial transactions through trade repositories, thus facilitating the process of monitoring the stability of financial systems; and recognizing the importance attributed to the monitoring of the global risks that financial institutions, and their branches, incur while participating in infrastructures in various jurisdictions.

Furthermore, agreements signed by G20 countries along with the international demand for uniform treatment of infrastructures in different jurisdictions, aiming to mitigate regulatory arbitrage, has led to growing requirements in terms of transparency in the rules, policies and procedures adopted as well as adherence to international principles.

In line with the context mentioned previously, this report aims to provide greater transparency to Banco Central do Brasil’s oversight practices concerning the various elements of the Brazilian Payments System (SPB). Furthermore, it serves as a tool to all of SPB’s actual and potential participants, in terms of perceiving Banco Central do Brasil’s oversight role and eventually contributing to oversight improvement. It may also be of great use to the international community interested in evaluating investment opportunities in Brazil as well as International and Multilateral Organizations involved in regulation, thus facilitating international cooperation in the field.

It is in this context that Banco Central do Brasil hereby publishes the 2013 Brazilian Payments System Oversight Report.
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Executive Summary

The Brazilian Payments System is made up of all the entities, systems and procedures related to the clearing and settlement of funds transfer, foreign currency operations, financial assets, and securities transactions. These entities are known, collectively, as financial market infrastructures - FMI. After October 2013, when Law 12,865/2013\(^1\) was enacted, payment schemes and payment institutions also became part of the Brazilian Payments System.

Considering the regulatory framework in place, oversight in Brazil comprises (i) authorizing the functioning of FMIs and payment schemes; (ii) monitoring the FMI’s activities, either indirectly, by means of data collected regularly, or directly through on–site inspections; (iii) and evaluating the infrastructures procedures and comparing them to the best practices worldwide.

As of the year of 2013, Banco Central do Brasil’s oversight on the FMI, by means of authorizing, monitoring and continuously evaluating their functioning, did not identify any imminent risk capable of disrupting FMI’s activities.

This Oversight Report points out the main changes that occurred in 2013 regarding the market infrastructures that compose the Brazilian Payments System, as follows:

i. changes in the Funds Transfer System’s (Sitraf) timetable, with special emphasis to the earlier opening hour to 4 a.m., when participant’s messages can be received;

ii. the maximum value of individual transfer orders that are cleared through the Deferred Settlement System for Interbank Credit Orders, operated by the Interbank Payments Clearinghouse (CIP-Siloc), was raised from R$ 5,000 to R$ 250,000 in June, 2013;

iii. two changes regarding the process of registering contracts in CIP-C3. The first one consisted in introducing a function that validates the contracts registered. The other one involved an improvement in the function that locks and restricts the sale of collateral securities;

iv. a proposal by the Brazilian Securities, Commodities and Futures Exchange - BM&FBOVESPA to improve its additional safeguard mechanisms in order to obtain a Qualifying CCP status;

v. a request on behalf of the Brazilian Securities, Commodities and Futures Exchange - BM&FBOVESPA, for approval of a new over-the-counter transactions recording system, called iBalcão;

vi. BM&FBOVESPA’s project aimed to integrate the post trade infrastructure in one single system. Currently, their transactions operate separately through four distinct systems;

vii. Changes in the handbooks of some of the OTC Clearinghouse’s (Cetip) products. Such

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\(^1\) English version available at BCB webpage: [http://www.bcb.gov.br/Pom/Spb/Ing/InstitucionalAspects/Law12865.pdf](http://www.bcb.gov.br/Pom/Spb/Ing/InstitucionalAspects/Law12865.pdf)
changes are aimed to enhance the transparency and provide greater clarity to the system’s rules regarding trade negotiation, recording and clearing of securities.

Banco Central do Brasil monitors the changes proposed to make sure they contribute to enhance the security and the efficiency of Brazilian Payments System.

At the end, this Report presents the oversight policies that Banco Central do Brasil will pursue to promote the security and the efficiency of the Brazilian Payments System so as to provide Brazilians with access to financial services that suit their needs. Amongst these measures, it is worth noting:

i. enhancing access to payment services, as a form of promoting financial inclusion;

ii. pursuing solutions that reduce the costs and provide greater convenience in the use of electronic payment methods, reducing the use of cash;

iii. greater efficiency and users’ convenience, and reduced costs, as a result of increased competition between payment schemes based on credit, debit and pre-paid cards and between these traditional payment schemes and the more innovative ones;

iv. expanding mobile payment services given its great potential in promoting financial inclusion;

v. obtaining low cost solutions that support retail payments in real time, enabling the funds transferred to be available to the receiver immediately;

vi. promoting interoperability within ATMs, with the potential of reducing bank costs and enhancing users’ convenience;

vii. enacting new regulation pursuant to the activities of central securities depositories and trade repositories as set forth by Law 12,810/2013;2

viii. the adoption of internationally used communication methods as a form of facilitating interoperability and reducing entry costs;

ix. defining standards that adequately measure the general risk faced by the entities that operate financial market infrastructures;

x. improving the recovery and resolution regime of financial market infrastructures

Banco Central do Brasil understands that although market driven innovative solutions are, in general, efficient in terms of resource allocation, BCB has an important role in inducing such solutions. However, whenever necessary, BCB will use its regulatory power to obtain solutions capable of aligning market forces with the public interest.

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2 Articles 22 to 29, no English version available at BCB webpage.
1. The roles and scope of Brazilian Payments System oversight

The Brazilian Payments System comprises all the entities, systems and procedures related to the clearing and settlement of funds transfer, foreign currency operations, financial assets, and securities transactions. The Brazilian Payments System comprises check clearing services, the clearing and settlement of electronic credit and debit orders, the transfer of funds and other financial assets, the clearing and settlement of transactions in securities, commodities and futures exchange along with other entities that are collectively known as financial market infrastructures (FMI).

Financial market infrastructures play an essential role to the financial system and the economy in general. It is very important that financial markets can rely on the services provided by FMIs. Their adequate functioning is essential to assure financial stability and as a channel for monetary policy.

The objectives of Banco Central do Brasil’s oversight consist in assuring the soundness and efficiency of the Brazilian Payments System. Thus, oversight aims to mitigate risk, especially systemic risk, and to promote efficiency in the use of payment instruments and in the services provided by the financial market infrastructures involved.

Banco Central do Brasil is responsible for assuring that the Brazilian Payments System functions appropriately as well as for its continuous improvement. Thus, BCB’s oversight role aims to make sure that the Brazilian financial market infrastructures and payment schemes operate in line with public interest and work to preserve financial stability and reduce systemic risk.

Furthermore, it is also Banco Central do Brasil’s role to regulate the Brazilian Payments System, in conjunction with the Brazilian Securities and Exchange Commission, and in line with the guidelines established by the National Monetary Council. The process entails converting set policies into rules and procedures applicable to the financial market infrastructures, with regard to international standards and recommendations such as those proposed by the Committee on Payments and Market Infrastructures (CPMI) and the International Organization of Securities Commissions Technical Committee (IOSCO/TC).

Oversight of Brazilian financial market infrastructures and payment schemes is based on specific legislation.

Law 10,214/2001 outlines the Brazilian Payments System, its clearinghouses and other clearing and settlement providers.

Resolution 2,882/2001 establishes that it is Banco Central do Brasil’s responsibility to regulate and authorize the functioning of clearinghouses and other clearing and settlement providers.

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3 Systemic risk consists in the risk of occurring a domino effect due to a payment system malfunctioning or a failure of one of its participants to honor his/her obligations. In other words, the risk that such event may cause other participants to fail to honor their own obligations, creating a contagion effect or a general breakdown in the payment system.


Circular 3,057/2001 sets forth the provisions to be followed by Banco Central do Brasil when supervising the clearinghouses and other clearing and settlement systems that integrate the Brazilian Payments System.

Law 12,865/2013⁶, Resolution 4,282/2013 and Circular 3,682/2013 regulate the oversight of payment schemes participating in the Brazilian Payments System.

The Department of Banking Operations and Payments System – Deban, while fulfilling its statutory duties, complies with the standards and principles set forth in the Principles for Financial Market Infrastructures – PFMI, published by the Committee on Payments and Market Infrastructures (CPMI) and the International Organization of Securities Commissions Technical Committee (IOSCO/TC).

As set forth by Circular 3,682/2013, the payment schemes are now required to obtain authorization from Banco Central do Brasil and will also be subject to BCB’s oversight procedures similar to those already applicable to the existing FMIs.

International standards recommend uniform treatment of market infrastructures located in different jurisdictions, providing greater transparency in the rules, policies and procedures adopted worldwide. It’s also worth noting that the strong interconnection that exists in financial markets demand international cooperation and uniform requirements concerning the functioning of market infrastructures.

Considering the regulatory framework in place, oversight in Brazil, includes the following activities:

(i) authorizing the functioning of FMIs and payment schemes and any alterations proposed;

(ii) monitoring the FMI’s activities, be it indirectly, by means of data collected regularly, or directly through on-site inspections; and

(iii) evaluating the procedures adopted by the infrastructures and comparing them to international standards and best practices worldwide.

The following table presents the market infrastructures that comprise the Brazilian Payments System and, as such, are subject to Banco Central do Brasil’s oversight.

<table>
<thead>
<tr>
<th>Financial Market Infrastructures - Brazilian Payments Systems</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Type</strong></td>
</tr>
<tr>
<td>-----------------</td>
</tr>
<tr>
<td>STR - Sistema de Transferência de Reservas</td>
</tr>
<tr>
<td>CIP-Sitraf</td>
</tr>
<tr>
<td>CIP-Siloc</td>
</tr>
<tr>
<td>Compe</td>
</tr>
<tr>
<td>Cielo</td>
</tr>
<tr>
<td>Rede</td>
</tr>
<tr>
<td>Selic</td>
</tr>
<tr>
<td>BM&amp;FBovespa - Derivativos</td>
</tr>
<tr>
<td>BM&amp;FBovespa - Câmbio</td>
</tr>
<tr>
<td>BM&amp;FBovespa - Ativos</td>
</tr>
<tr>
<td>BM&amp;FBovespa - Ações</td>
</tr>
<tr>
<td>Cetip</td>
</tr>
<tr>
<td>CIP-C3</td>
</tr>
</tbody>
</table>

Policy Statement 25,164/2014\(^7\) lists the clearing and settlement systems, central securities depositories and trade repositories that compose the Brazilian Payments System.

In Brazil, the market infrastructures are subject to prior authorization by Banco Central do Brasil before starting operation. During the authorization process, various aspects are analyzed. Among them, it is worth noting: operational requirements depending on the systems used; supporting machinery and equipment; terms and conditions that govern access to the system; evidence of the clearinghouse’s or service provider’s capability of meeting corporate objectives, considering technical, operational, administrative and financial aspects and proper risk assessment. Minimum capital requirement is also taken into account, as established by Circular 3,057/2001.

Brazilian market infrastructures are also required to provide information that allows regulators to verify their proper functioning, soundness and risk management processes. Oversight may also require demanding information covering the various stages of the payment cycle. Such information may include: value and number of transactions, data on costs and prices; capacity utilization, delays or settlement fails, size of message queues, liquidity problems along with other operational and technical issues. The Department of Banking Operations and Payments System receives such information regularly and complements them with on-site inspection.

\(^7\) English version available at BCB webpage: http://www.bcb.gov.br/pom/spb/ing/comunicadoingles.pdf
The infrastructures that comprise the Brazilian Payments System are subject to on-site inspections annually. The inspections typically focus on evaluating whether the market infrastructures are operating in conformity with the general rules and guidelines that govern the Brazilian Payments System. Information technology infrastructure, business continuity plan, corporate governance, risk management and internal controls are aspects generally addressed during these inspections.

Banco Central do Brasil also evaluates the Brazilian Payments System in terms of its adherence to international guidelines and standards such as those set forth in the *Principles for Financial Market Infrastructures – PFMI*. These assessments generally follow the methodology published by international organisms, granting comparability between Brazilian market infrastructures and those abroad.
2. Developments in the Brazilian financial market infrastructures

2.1 Volumes

The figures below represent the average daily aggregate values of the transactions executed through Brazilian FMIs, i.e., those carried out by SPB clearinghouses and other clearing and settlement providers. It is worth noting that part of those values are also included in the Reserves Transfer System’s (STR’s) figure, given that the final settlement of all the clearinghouses, ultimately flows through the STR.

<table>
<thead>
<tr>
<th>Type</th>
<th>Market Infrastructure</th>
<th>2012</th>
<th>2013</th>
</tr>
</thead>
<tbody>
<tr>
<td>STR - Sistema de Transferência de Reservas</td>
<td>Reserves Transfer System</td>
<td>672,549</td>
<td>934,408</td>
</tr>
<tr>
<td>CIP-Sitraf</td>
<td>Interbank Payments Clearinghouse - Funds Transfer System</td>
<td>12,108</td>
<td>13,797</td>
</tr>
<tr>
<td>CIP-Siloc</td>
<td>Interbank Payments Clearinghouse - Deferred Settlement System for Interbank Credit Orders</td>
<td>5,953</td>
<td>9,432</td>
</tr>
<tr>
<td>Compe</td>
<td>Checks Clearinghouse</td>
<td>4,089</td>
<td>4,054</td>
</tr>
<tr>
<td>Cielo</td>
<td>Multicard clearing system</td>
<td>1,323</td>
<td>1,520</td>
</tr>
<tr>
<td>Rede</td>
<td>Redecard’s Domestic Clearing System</td>
<td>971</td>
<td>1,152</td>
</tr>
<tr>
<td>Selic</td>
<td>Special System for Settlement and Custody</td>
<td>463,851</td>
<td>652,499</td>
</tr>
<tr>
<td>BM&amp;Bovespa - Derivativos</td>
<td>BM&amp;FBOVESPA - Derivatives Clearinghouse</td>
<td>1,377</td>
<td>2,276</td>
</tr>
<tr>
<td>BM&amp;Bovespa - Câmbio</td>
<td>BM&amp;FBOVESPA - Foreign Exchange Clearinghouse</td>
<td>4,133</td>
<td>4,696</td>
</tr>
<tr>
<td>BM&amp;Bovespa - Ativos</td>
<td>BM&amp;FBOVESPA - Securities Settlement System</td>
<td>310</td>
<td>28</td>
</tr>
<tr>
<td>BM&amp;Bovespa - Ações</td>
<td>BM&amp;FBOVESPA - Equities Clearinghouse</td>
<td>7,578</td>
<td>7,757</td>
</tr>
<tr>
<td>Cetip</td>
<td>Cetip - OTC Clearinghouse</td>
<td>34,207</td>
<td>35,251</td>
</tr>
<tr>
<td>CIP-C3</td>
<td>Interbank Payments Clearinghouse - Credit Transfer System</td>
<td>134</td>
<td>192</td>
</tr>
</tbody>
</table>

It is worth noting that the significant increase in the volume operated by the Reserves Transfer System (STR) in 2013 can be attributed to the strong growth in the number of transactions involving federal government bonds. Such transactions include open market operations carried out by Banco Central do Brasil as well as primary issuances. Such growth is reflected in the volume operated by the Special System for Settlement and Custody (SELIC) which acts as the central depository and settlement system for the securities issued by the Brazilian National Treasury.

In general, the other Funds Transfer Systems also experienced growth in the average daily aggregate values in 2013. An exception to this upward trend was found in the Checks Clearinghouse (Compe). Such reduction is due to the fact that the use of checks, as a retail payment instrument, is being gradually substituted by credit and debit cards, Electronic Funds Transfers (TED) and Credit Transfers (DOC).

The growth in the volumes transacted through the Interbank Payments Clearinghouse - Deferred Settlement System for Interbank Credit Orders (CIP-Siloc) was mainly due to an
increase in the upper value of the electronic bills cleared there. The limit was raised from R$ 5 thousand to R$ 250 thousand, doubling the volume of transactions from June 2013 on.

The BM&FBOVESPA Equities Clearinghouse was relatively stable in terms of transactions volumes over the two year period. Volume peaked in May due to a public stock offering by Banco do Brasil Security (BB Seguridade) which totaled R$ 11.5 billion.

The BM&FBOVESPA - Foreign Exchange Clearinghouse displayed a steady decrease in the volume of transactions executed between May and August, 2013. During that period, the annual level was reduced from R$ 6.2 billion to R$ 3.6 billion and finished the year relatively stable at the latter level.

The volume of transactions executed through the Interbank Payments Clearinghouse - Credit Transfer System (CIP-C3) peaked in March and December but was relatively stable during the rest of the year. It is worth noting that CIP-C3 started operating in 2011 with the purpose of centrally recording transactions in which credits are assigned from one creditor to others. The creation of CIP-C3 enhanced the controls over such operations, preventing the ownership of credit contracts being assigned in duplicity. CIP-C3 currently allows the transfer of ownership of two types of contracts: car loans and payday loans. The latter refers to loans to individuals in which the installments are deducted directly from their payrolls, known locally as crédito consignado. The volume of transactions recorded by CIP-C3 is expected to continue its growth path considering the expansion of credit operations (personal loans) underway.

Cielo and Rede provide clearing and settlement services for card transactions (credit, debit and prepaid). They also establish contracts with merchants acquiring to accept cards.

2.2 Main changes to the market infrastructures

In 2013, some changes were implemented in the Interbank Payments Clearinghouse - Funds Transfer System’s (CIP-Sitraf’s). Its timetable was then brought forward to 4 a.m.. Although the messages sent between 4 a.m. and 6:35 a.m. are placed in queues to be processed afterwards, this change allows the participants to enhance the usage of their computer infrastructure during a time period of lower demand.

Circular 3,598/2012, and its subsequent amendments, raised the value of the electronic bills that are cleared through the Deferred Settlement System for Interbank Credit Orders, operated by the Interbank Payments Clearinghouse (CIP-Siloc), from R$ 5 thousand to R$ 250 thousand in June, 2013. This modification doubled the volume cleared through CIP-Siloc and, given its multilateral clearing mechanism, reduced liquidity requirements without impairing risk management.

With respect to the Interbank Payments Clearinghouse - Credit Transfer System (CIP-C3) two important changes enhanced security in the process of recording contracts. The first one consisted in introducing a function that validates the contracts registered, be it with Brazil’s Social Security Institute (INSS), in the case of payday loans for pension beneficiaries, or with Brazil’s National Liens System (SNG), which was developed to register liens on motor vehicles.
In this context, the validation implies the reconciliation of the information registered in CIP-C3 with the two institutions mentioned previously, known as the Validating Agents.

The second change reflects an improvement in the function that locks and restricts the sale of collateral securities. This functionality is particularly important when a registered security is offered as collateral in a given transaction. Before its implementation, the beneficiary of the locked or “restricted for sale” security could only avoid its cession to a third party. With the new improvement in place, the beneficiary can claim security ownership, facilitating collateral execution. This improvement is especially useful in the case of the securities offered as collateral to the Credit Guarantee Fund (FGC), a non-profit organization aimed to protect creditors and account holders against intervention and extrajudicial liquidation of member financial institutions.

All the systems within the Brazilian Securities, Commodities and Futures Exchange (BM&FBOVESPA) are central counterparties. As a result, these systems have safeguards and other mechanisms assuring the proper clearing and settlement of the transactions executed within their systems.

In 2013, BM&FBOVESPA requested approval of additional safeguards to the operation of Derivatives, Equities and Foreign Exchange clearinghouses.

These amendments are embedded in the context of Basel III, which establishes specific capital requirements to be adopted by financial institutions when operating with clearinghouses that act as central counterparties. The capital requirements under the new accord vary, depending on the qualifying status of the CCP that the financial institutions operate with, and aim to counterbalance the risk they are exposed to in such transactions.

Thus, the amendments proposed by BM&FBOVESPA aim to bring its additional safeguards in line with international standards. Furthermore, BM&FBOVESPA seeks to become a qualifying central counterparty, as defined by the Bank of International Settlements (BIS), and continue to be competitive relative to clearinghouses abroad.

Banco Central do Brasil (BCB) and the Brazilian Securities and Exchange Commission (CVM) received from BM&FBOVESPA in 2013 a request for approval of a trade repository called iBalcão. Expected to start operating in 2014, the new instrument will register Structured

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8 Law 10214/2001, in Article 4, establishes that in the clearing systems where the operations' volume and nature, at Banco Central do Brasil’s discretion, may put at risk the soundness and smooth operation of the financial system, the clearinghouses and clearing service providers shall, without prejudice to any obligations arising out of any law, regulation or contract, in relation to each participant, take position as a central counterparty, for the settlement of the respective obligations carried out through such clearinghouse or clearing service provider.

9 The first layer of protection usually consists of individual guarantees that the participants surrender to the CCP to cover their own sole risk. Additional safeguards are formed by the clearinghouse’s and its direct participants' own funds. This second layer of protection takes the form of collateral pools that aim to address the residual risk not covered by the first layer.

10 iBalcão registers over the counter transactions. Such transactions are negotiated directly between financial institutions and thus are not executed through an exchange.
Transactions Certificates (COE), Time Deposits (CDB) and Real Estate Credit Bills (LCI).

Although such transactions are not executed through BM&FBOVESPA, all the events related to them (e.g. transfer of ownership, restrictions to sale, availability for sale) should be recorded in BM&FBOVESPA’s systems.

BM&FBOVESPA also submitted a project to Banco Central do Brasil, currently in analysis, aimed to integrate its post-negotiation infrastructure. Currently, BM&FBOVESPA has four different systems and plans to unite them in one single structure, reducing costs and operational risk. In this context, the rules and regulations should be simplified and procedures fine-tuned. The project also establishes a single net multilateral position per clearing member. As a result, the participants’ liquidity and collateral requirements should be reduced along with the clearinghouse’s net exposure.

In order to enhance transparency and provide greater process clarity, the OTC Clearinghouse (Cetip) promoted some changes in its procedures related to negotiation, registry and settlement of securities. Such changes were reflected in the handbooks of agribusiness, real estate, OTC derivatives and fixed income products. Likewise, the handbooks containing the terms and conditions that govern participants access to Cetip, along with the manual that addresses the electronic platform, were also amended. Such amendments enabled the manager that did not have access to Cetip’s registry system to access its electronic platform. Furthermore, with respect to the electronic platform’s terms and conditions, some changes were made to Cetip’s trading platform, making the securities pricing more effective and transparent.

It is also worth mentioning that Cetip is currently developing a project that will qualify the clearinghouse as central counterparty in the derivatives and securities lending markets, contributing to enhance security and efficiency in those markets.
3. Oversight activities

For the operating infrastructures the oversight duty requires that BCB assesses any changes to FMIs rules and procedures. In addition, oversight is based on data and information received, which enables monitoring FMI’s functioning and risk management practices, along with on-site inspections.

3.1 Systemic risk

In a funds transfer or clearing and settlement system, systemic risk refers to the possibility that the failure of a financial institution to honor its obligations, may lead others default.

In that context, a market infrastructure is considered systemically important if the effects of a default, by one of its participants, is capable of disrupting the normal and solid functioning of the financial system as a whole.

Given the nature of their operations, all the systems responsible for providing clearing, settlement, repository and depository services are considered systemically important. On the other hand, the funds transfer systems are considered systemically important in two circumstances, that being when the daily aggregate value of their transactions represents at least 4% of the Funds Transfer System’s (STR’s) corresponding value or when the risk of contagion is above a predetermined level.

Based on the criteria mentioned previously, the following funds transfer systems are considered not systemically important: Interbank Payments Clearinghouse - Funds Transfer System (CIP-Sitraf), Interbank Payments Clearinghouse - Deferred Settlement System for Interbank Credit Orders (CIP-Siloc), Checks Clearinghouse (Compe), Cielo’s Multicard Clearing System (Cielo) and Redecard’s Domestic Clearing System (Rede).

3.2 Operational risk indicators

Operational risk consists in the risk of incurring in a loss due to human errors, deficiencies in IT systems, failures in internal processes or interruptions caused by external events. Some examples of operational failures include errors, delays and interruptions in the infrastructure’s processes and systems, insufficient processing capacity, fraud, and information leakage. Thus, operational risk may arise due to internal or external factors.

Oversight of the Brazilian Payments System, with respect to monitoring operational risk, includes a monthly assessment of availability, capacity utilization and the failures occurred in the systems that provide clearing and settlement services in real time.

Availability of the systems considered systemically important, as defined by norm, should be greater or equal to 99.8%. This indicator takes into account the number of hours in which the system was in proper operation relative to the number of hours it should have been operating, considering a 12 month period.

In 2013, all but one system met the availability requirement of at least 99.8%. The only
exception was the Interbank Payments Clearinghouse - Credit Transfer System (CIP-C3) whose availability index was 99.72%. Due to this occurrence, the Interbank Payments Clearinghouse announced a plan containing measures to improve CIP-C3’s availability index. BCB’s oversight is currently monitoring the results of those measures to assess their effectiveness.

Capacity utilization is another risk indicator that BCB oversight monitors, especially in the systems that provide clearing and settlement services in real time. In such systems, capacity utilization is a critical indicator and it is measured for the Interbank Payments Clearinghouse - Funds Transfer System (CIP-Sitraf11) and the Reserves Transfer System (STR). The indicator is calculated considering the greatest number of daily transactions processed in a given period and the maximum processing capacity verified.

STR and CIP-Sitraf presented maximum daily capacity utilization of 30% and 80%, respectively. Although the results indicate that both systems are fully capable of processing all payment transactions directed to them, some improvements were made to CIP-Sitraf in 2013 to mitigate that risk. Among them, it is worth mentioning the changes to the timetable as explained before. With this now longer processing period, CIP-Sitraf’s processing capacity should be revaluated during the subsequent period.

All incidents that affect these systems are monitored regularly. The effectiveness of the measures adopted by the operators of the Brazilian FMIs are evaluated aiming to avoid recurrences.

### 3.3 Monitoring financial risks in central counterparties

The clearing houses that act as central counterparties are subject to liquidity and credit risks, understood as the risk that a participant may not fulfill its obligations in due time, or not fulfill at all. To mitigate these risks, a CCP uses individual guarantees deposited by the participants or additional safeguards, generally in the form of collateral pools. Principal risk is mitigated by means of delivery vs. payment (DvP), or payment vs. payment (PvP), which assures that the payment of corresponding obligations are mutually conditioned. Market risk should be managed through individual guarantees, additional safeguards, such as collateral pools, and should also be addressed by the CCP’s risk management practices.

To assess the quality of a CCP’s risk management practices, Banco Central do Brasil performs tests to evaluate whether the guarantees and safeguards required from the participants are capable of covering an event of default by one or two participants.

The test involving just one participant is set by Resolution 2,882/2001 while the scenario with two defaulting participants is more restrictive and complies with PFMI guidelines. The results obtained suggest that the clearing houses’ risk management practices in 2013 were adequate.

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11 CIP-Sitraf incorporates two settlement mechanisms: real-time gross settlement (RTGS), utilized most of the time, and continuous transactions clearing, performed every five minutes. Since it uses these two mechanisms, CIP-Sitraf is a considered a hybrid settlement system.
The tests undergone in BM&FBOVESPA’s Securities, Derivatives and Exchange Rate Clearinghouses in 2013 indicated that the volume of collateral pools that each clearinghouse possessed was sufficient to cover their liquidity and credit risk exposures.

Further information regarding the methodology of these risk assessment tests is addressed by Banco Central do Brasil’s Financial Stability Report, more specifically, on the chapter relative to the Brazilian Payments System. This report is available at the following link: http://www.bcb.gov.br/?FINANCSTAB.

3.4 Brazilian FMIs on-site inspections

BCB’s on-site inspections consist in technical visits to the operators of Brazilian FMIs. During these visits, certain aspects of the market infrastructures’ functioning pertaining to security, efficiency and integrity are assessed based on the information collected. More specifically, the on-site inspections typically focus on four aspects: information technology infrastructure, business continuity plan, internal controls, and corporate governance.

A market infrastructure’s business continuity plan should assure that the soundness of its processes is not disturbed by any adverse condition. The plan should, in certain circumstances, provide for an alternative processing center when the original one is malfunctioning. Given the risk embedded in the processes associated with clearing and settlement services, it is crucial that, in the case of malfunctioning, they be restored in the minimum timeframe possible.

In 2013, on-site inspections were held in all three of the Brazilian Interbank Payment Clearinghouses: Funds Transfer System (Sitraf), Deferred Settlement System for Interbank Credit Orders (Siloc) and Credit Transfer System (C3).

The on-site inspection report highlighted as positive the Brazilian Interbank Payment Clearinghouse’s self-assessment, the adjustments made to bring its infrastructures in conformity with the principles for financial market infrastructures, the use of COBIT\(^\text{12}\) to assess the maturity of its processes and a reduction in its critical processes recovery time to less than two hours.

Opportunities for improvement in CIP’s internal control processes and corporate governance practices were identified and their implementation is being monitored.

The on-site inspection of Cetip - OTC Clearinghouse in 2013 concluded that the clearinghouse obtained progress with respect to its corporate governance practices and its information

\(^{12}\) COBIT stands for Control Objectives for Information and related Technology. It consists in a framework of best practices in Information Technology management and governance.
technology (IT) infrastructure. Nonetheless, further measures, regarding corporate governance and IT infrastructure were requested. Since then, progress in these two areas is being monitored. It is also worth noting that Cetip’s project, to act as a central counterparty in transactions involving securities lending and OTC derivatives, will demand the implementation of additional credit and liquidity risk management mechanisms.

On-site inspection of BM&FBOVESPA observed the implementation of positive measures such as the creation of a corporate risk, compliance and internal controls division, following BCB’s previous on-site inspection recommendation. BCB also reassured the need to test processing capacity and resilience of the new systems that will result from the integration of all four BM&FBOVESPA’s post trade infrastructure. Such tests must include BM&FBOVESPA’s business continuity plan and will be required to obtain BCB’s approval.

At the end of 2012, Banco do Brasil’s IT systems and its operational environment, which support the Checks Clearinghouse’s (Compe’s) activities, were also subject to BCB’s on-site inspection.

Although the on-site inspection identified items that should be continuously monitored by Banco Central do Brasil, Compe’s data processing services, which are operated by Banco do Brasil, received a positive evaluation.

The importance of developing a Checks Clearinghouse – Compe web page was also mentioned. The creation of that website, containing the clearinghouse’s main information, should contribute to enhance transparency in its processes and, as a result, improve its corporate governance practices.

In general, Banco Central do Brasil acknowledges the efforts made by all the Brazilian financial market infrastructures to enhance their internal controls and continuously improve their processes, as well as to bring their practices in line with the Principles for Financial Market Infrastructures – PFMI.

Oversight activities in 2013, through the continuous monitoring and evaluation of Brazilian FMIs activities, did not identify any imminent risk capable of disrupting their normal and sound functioning.

3.5 Brazilian retail payment system oversight

Retail payment systems and payment instruments play an important role in promoting efficiency along with social and economic welfare. They are particularly useful in enhancing the population’s confidence in the currency and also facilitate the interactions between economic agents.

Banco Central do Brasil, while overseen the Brazilian retail payment system, constantly monitors the evolution of the payments industry. Oversight include monitoring aspects related to the retail payment systems’ efficiency and security, the existence of competition in the services provided and the intensity of cooperation among market infrastructures. Innovation in the development of new products that suit end users’ needs is also taken into
account.

With this objective in mind, Banco Central do Brasil collects information and data pertaining to the use of payment cards (credit, debit and prepaid) along with the other payment instruments employed in the industry. Access channels usage, e.g., ATMs, internet, home and office banking, call centers, mobile phones, call centers and correspondent banking are also monitored, as well as, the pricing policy, supporting FMIs, levels of cooperation and interoperability among market infrastructures.

Provided the new legal framework on payment schemes and payment institutions, Brazilian retail payment systems will also be subject to BCB oversight. The new role will include monitoring the payments schemes’ technical capacity and risk management practices along with on-site inspections. The results obtained will also integrate subsequent editions of Banco Central do Brasil’s Oversight Report.

It is also worth mentioning that Banco Central do Brasil publishes annual statistics regarding the retail payment industry and the use of payment cards (credit, debit and prepaid) in Brazil. Such statistics represent an annual update of the Report on the Brazilian Retail Payment System which was first published by Banco Central do Brasil in 2005. The mentioned Report, along with its statistical updates, is available in English and in Portuguese at the following links, respectively:

http://www.bcb.gov.br/?BRPAYSYSTEM

http://www.bcb.gov.br/?SPBADENDOS
4. Oversight Policies

This section presents Banco Central do Brasil’s oversight policies aimed to promote the efficiency and safety of the Brazilian Payments System and contribute to the widespread use of financial services that suit the population’s needs. Some of the topics represent principles that should be pursued by the market, such as, financial inclusion, enhanced competition between payment instruments and the development of payment schemes based on mobile phone technology.

Banco Central do Brasil acknowledges its important role in inducing, by mere persuasion, market driven solutions such as the interoperability between ATMs and the implementation of a real time retail payment system. BCB also recognizes, however, that in some cases only the regulatory power will lead to solutions capable of aligning market forces with the public interest.

Finally, an agenda of potential regulatory measures, in line with the state-of-the-art in the field, is presented.

4.1 Payment schemes

In light of the new competences granted by Law 12,865/2013, the Brazilian National Monetary Council, along with Banco Central do Brasil, enacted new legislation governing payment schemes and payment institutions. The new legislation represents the first steps in regulating payment schemes and payment institutions in Brazil and will support Banco Central do Brasil in its role to provide authorization, oversight and supervision.

The new regulatory framework aims to establish a minimum set of standards to assure safety in payment services, encourage new entrants and promote competition and efficiency in the market, and create an environment that favors financial inclusion and innovations in retail payments.

The Brazilian National Monetary Council established the guidelines to be observed by Banco Central do Brasil when exercising its regulatory, supervisory, and oversight powers pertaining to payment schemes, and guided Banco Central do Brasil’s actions to promote competition, financial inclusion, innovation, interoperability, nondiscriminatory access to payments services and market infrastructures, and the creation of solutions that meet the end users’ needs.

The new legal framework established a period of 180 days, following the date in which it was enacted, for the payment schemes and payment institutions already operating in Brazil to perform the necessary adaptations in their systems and procedures to bring them in line with the new regulation in place.

Previous reports, such as the Report on the Brazilian Retail Payment System mentioned earlier, had already indicated the existence of inefficiencies in the Brazilian retail payments industry. The new legal framework grants Banco Central do Brasil new competencies, including the regulatory power to minimize such inefficiencies. Nonetheless, BCB recognizes that the market itself is often capable of providing more efficient solutions than those that would be...
achieved by the introduction of new regulation.

4.1.1 Payment services as a means of financial inclusion

Banco Central do Brasil has actively participated in debates and international forums addressing the role of payment services as a means of financial inclusion. Within the G20 forum, Brazil is committed to implement policies that enhance competition and facilitate market provision of a wide variety of banking services. BCB is also committed to promoting technological and institutional innovations that amplify the overall use and access to the financial system and induce improvements in the infrastructures available.

BCB currently participates in the task force on Payment Aspects of Financial Inclusion coordinated by CPMI/BIS and the World Bank. The group is expected to produce a report by 2015 with recommendations to increase access to payment services and the instruments through which these services can effectively broaden financial inclusion.

Thus, Banco Central do Brasil, while providing oversight of Brazilian payment schemes and FMIs, is committed to continually induce solutions aligned with the objectives set forth both domestically and internationally.

4.1.2 Convenience in the use of electronic payment instruments

Despite the widespread use of electronic payment methods in low value transactions, especially payment cards, checks are still widely used in higher value transactions. The choice between using checks or payment cards is influenced by the pricing mechanisms embedded in each instrument. While payment cards establish a percentage cost (ad valorem) over total value, the costs of using checks are fixed, regardless of the amount involved. Thus, the use of checks is favored in high value transactions. At the same time, Electronic Funds Transfers (TED), Credit Transfers (DOC) and electronic billing (boletos) have not proved themselves sufficiently convenient in face-to-face transactions involving high values, such as those involving housing and vehicle purchases. Thus, due to the lack of alternatives, checks are still relentlessly used in such transactions.

BCB encourages the payment industry to seek solutions that reduce the use of paper based instruments, as they are costly to society in general, especially in high-value transactions.

4.1.3 Efficiency in the provision of payment services

The new regulatory framework in place has the potential of enhancing competition in the payment industry as it creates a more secure and safe environment for the provision of payment services by non-financial institutions. Increased competition is expected, especially within payment schemes based on credit, debit, and pre-paid cards and between incumbents and the more innovative entrants.

Banco Central do Brasil understands that increased competition is a catalyst for gains in efficiency and convenience in payment services. Competition also encourages risk mitigation and better risk management processes in the retail payments system. Through increased
competition, positive effects are expected such as price reduction and shortened settlement periods\textsuperscript{13}, closer to the international average, thus reducing the need for direct regulatory intervention.

The Report on the Brazilian Payment Card Industry published by the Central Bank of Brazil, the Secretariat for Economic Monitoring – Ministry of Finance and the Secretariat of Economic Law – Ministry of Justice in 2010 highlighted that even if that period is reduced from the current 28 days to around 2, following international standards\textsuperscript{14}, issuance activity would still be profitable. The report also mentions that acquirers are also capable of absorbing increases in the interchange fee, without needing to pass it on to merchants.

Circular 3,682/2013, which regulates the provision of payment services in Brazil, empowers Banco Central do Brasil to interfere in the pricing and settlements periods practiced in the Brazilian payments industry, if competition itself does not deliver the benefits and results desired.

4.1.4 Spreading mobile payment services

Mobile payments, which are those carried out by consumers’ mobile phones, for example, have great potential in promoting financial inclusion.

However, the widespread use of payment services by the unbanked population, and the resulting economies of scale and scope, will only occur if cost-benefit is favorable relative to cash.

Banco Central do Brasil considers that the mobile payments models should be innovative, and not just limited to the use of mobile phones as access to the existing models, as is the case of mobile banking. Such an innovative model would produce additional benefits to society in terms of convenience, security, and quality of the service provided.

Furthermore, the models to be implemented in Brazil should pursue interoperability, with an efficient cost structure, in line with the financial inclusion policy.

Law 12,865/2013 establishes that Banco Central do Brasil, the Brazilian National Monetary Council, the Ministry of Communications, and the Brazilian National Telecommunication Agency should adopt measures to promote payment schemes that incorporate individual telecommunication devices, such as mobile phones and tablets, as a means of financial inclusion.

\textsuperscript{13} In Brazil, card issuers pay acquirers 28 days after purchase.
\textsuperscript{14} In which case issuers bear an opportunity cost as they advance resources to acquirers before being paid by cardholders.
4.1.5 Real-time retail payments

In line with standards sought internationally, Banco Central do Brasil encourages the implementation of retail payment models in which end users, such as merchants, receive their payments in real-time, or within seconds of purchase. Likewise, in a peer-to-peer transactions, payments are also transferred to the individuals’ accounts in real-time. Such payment services, to be effective, need to function uninterruptedly, 24 hours a day, 7 days a week, throughout the year.

Some factors have propelled the worldwide drive for the so-called “instant payments”: the development of electronic payments, especially those that incorporate mobile devices, which are real-time in essence, and the growth in retail transactions, along with the payment of bills and taxes, outside regular business hours.

Although payment cards are widely used in retail purchases, the actual receipt of payment depends on the settlement periods of each type of payment card (credit, debit and prepaid). Real-time payment systems have various advantages. Among them, it is worth noting: greater assurance of payment receipt (end users’ are less exposed to the settlement cycle and payments are irrevocable), possibility of peer-to-peer transfers and acceptance by merchants regardless of prior acquiring, and the immediate availability of funds at a low cost.

Banco Central do Brasil follows closely international initiatives in the field, such as UK’s Faster Payments Service, Singapore’s G3 Immediate Payments, South Africa’s Real-Time Clearing, Sweden’s Immediate Payments Scheme, along with recent developments in Australia.

In summary, Banco Central do Brasil encourages the payments industry to assess the creation of a payment scheme that incorporates a great number of financial and payment institutions, bearing any kind of transactional accounts, conducive to continuous and real-time retail payment transfers.

4.1.6 ATM interoperability

Although a reasonable amount of ATMs are available to the public in Brazil, relative to total population, ATMS are underutilized in Brazil, in terms of number of transactions per machine, when compared internationally. This is a result of the low ATM interoperability. Market players have discussed that issue and interoperability is expected to be achieved shortly.

BCB understands that the competition within Brazilian ATM systems, which consists in offering a greater number of bank services per machine, leads to underutilization of ATMs and a reduction in users’ convenience, whose interests lies on simple transactions such as cash withdrawal and balance checking.

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15 Information on the recent developments in Australia is available in the Payments System Board Annual Report 2013 published by the Reserve Bank of Australia
Banco Central do Brasil will intensify its efforts to encourage ATM providers to enhance cooperation and reduce such inefficiencies.

4.2 Financial market infrastructures

Agreements signed by G20 countries along with the international demand for uniform treatment of infrastructures in different jurisdictions, aiming to mitigate regulatory arbitrage, has led to growing requirements in terms of transparency in the rules, policies and procedures adopted as well as adherence to international principles. In this sense, the Brazilian Payments System (SPB) has been constantly evaluated by international organisms such as the Financial Sector Assessment Program (FSAP) and CPMI/BIS. A CPMI/IOSCO survey, which assessed the implementation of international standards by member countries, indicated that Brazil is in line with the principles for financial market infrastructures recently issued.\(^1\)

Supervisory bodies from other jurisdictions have also assessed the Brazilian Payments System’s stability and adherence to the PFMIs. This assessment is due to the capital requirements that financial institutions on these jurisdictions are subject when operating in Brazilian central counterparties.

In this context, Banco Central do Brasil made public, through Policy Statement 25,097/2014\(^2\), the use of the PFMIs as reference for overseen, monitoring and assessing the security, safety, efficiency, integrity and reliability of the clearing and settlement providers and the trade repositories that are part of the Brazilian Payments System. Policy Statement 25,164/2014\(^3\) lists the Brazilian clearing and settlement systems and specific Principles that apply to each one of them.

As an initial measure to bring Brazilian market infrastructures in line with the PFMIs, Banco Central do Brasil established a deadline for the FMIs’ operators to complete their self-assessment aimed to evaluate the degree of adherence to the Principles.

4.2.1 Central securities depositories and trade repositories

With the objective of enhancing safety and efficiency, Law 12,810/2013 defined the activities exercised by central securities depositories and trade repositories.

A central securities depository is responsible for maintaining securities accounts and providing central safekeeping services relative to these securities. Trade repositories centrally collect and maintain the records pertaining to financial transactions and give publicity to such information. These two activities play an important role in contributing to the stability of the National Financial System; improve information flow in a standardized manner and help in monitoring the stability and soundness of financial institutions.

In order to provide greater transparency to the services provided by FMIs, BCB will soon issue a new regulation on the field.

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\(^1\)The complete assessment report is available at the following link: [http://www.bis.org/publ/cpss117.pdf](http://www.bis.org/publ/cpss117.pdf)


4.2.2 Communication procedures and standards

In conformity with principle 22 of the PFMIs, Banco Central do Brasil considers that the FMIs that are part of the Brazilian Payments System should adopt communication procedures and standards set internationally or, at least, those compatible with them. In case the standards and procedures adopted in Brazil and abroad differ, they should be readily convertible into one another.

The implementation of communication procedures and standards set internationally, such as those established by the International Organization for Standardization (ISO), enhances efficiency in the services provided by the Brazilian Payments System by facilitating interoperability among infrastructures and between them and their participants, including those participants that operate in various jurisdictions, as well as new entrants, reducing entry costs.

Banco Central do Brasil is undergoing studies aimed to adapt its systems to international standards. Concurrently, BCB supports such initiatives by Brazilian FMIs. BCB, along with the entities that operate Brazilian FMIs, participate in ABNT CEE-112, which is a Brazilian financial services committee parallel to the ISO/TC68.

4.2.4 General business risk

Principle 15 of the PFMIs states that market infrastructures should identify, monitor, and manage its general business risk and hold sufficient liquid net assets funded by equity to cover potential general business losses so that it can continue operations and services as a going concern if those losses materialize. Thus, the entities should be able to recover in any scenario or, at least, be able to exit the market in an orderly manner.

The PFMIs consider that an FMI’s inability to identify, manage and mitigate business risks may not only jeopardize its own continuity, but also have systemic implications towards its participants and the financial markets as a whole.

In line with its policy to implement the PFMIs, Banco Central do Brasil is currently working on new legislation which will define more specific criteria to ensure adequate risk coverage by the entities that operate Brazilian market infrastructures.

4.2.5 Recovery and resolution

Given the importance FMIs play in financial markets, ensuring their business continuity deserves special attention. Even amidst sound risk management policies and Banco Central do Brasil’s constant oversight, the risks they are subject may, in extreme circumstances, prevent them from providing key services.

Typical FMI activities are subject to a wide range of risks, including those related to settlement (credit and liquidity risks) and general business risk (risks related to market strategies, operational risk, legal risk, among others).
In this context, alongside imposing rigorous capital requirements and risk management procedures, regulators worldwide are working on adopting FMI recovery and resolution regimes in their respective jurisdictions. The objective of this global initiative consists in providing alternatives that ensure continuous FMI operations without the need of government bail-out.

Recovery is a state in which an entity faces relevant risk, usually accompanied by significant financial losses, but is still capable of restoring, by itself, its financial and operational wellness.

Resolution, on the other hand, is a special regime enacted by a public authority when the entity that operates an FMI is no longer capable of surviving or maintaining proper functioning on its own. In these circumstances, the special regime ensures that the critical services provided by FMIs are not disrupted. The objectives here are clearly public in nature and consist in ensuring financial stability and preserving user confidence in financial assets and payment instruments. Such objectives are generally not addressed in ordinary bankruptcy procedure.

_Banco Central do Brasil_, in line with international regulation and standards, will strive for continuous improvement in the regulatory framework.
## Acronyms and Abbreviations

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<tr>
<th>Acronym</th>
<th>Description</th>
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<tr>
<td>Banco Central do Brasil - BCB</td>
<td>Central Bank of Brazil</td>
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<tr>
<td>BIS</td>
<td>Bank for International Settlements</td>
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<td>CCP</td>
<td>Central counterparty</td>
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<td>Cetip</td>
<td>OTC Clearinghouse</td>
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<td>CIP-C3</td>
<td>Interbank Payments Clearinghouse - Credit Transfer System</td>
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<td>CIP-Siloc</td>
<td>Interbank Payments Clearinghouse - Deferred Settlement System for Interbank Credit Orders</td>
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<td>Compe</td>
<td>Checks Clearinghouse</td>
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<tr>
<td>CPSS/BIS</td>
<td>Committee on Payment and Settlement Systems/Bank for International Settlements</td>
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<td>CVM</td>
<td>Brazilian Securities and Exchange Commission</td>
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<td>Deban</td>
<td>Department of Banking Operations and Payments System</td>
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<td>Demab</td>
<td>Open Market Operations Department</td>
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<td>DvP</td>
<td>Delivery versus payment</td>
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<td>FGC</td>
<td>Credit Guarantee Fund</td>
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<td>FMI</td>
<td>Financial Market Infrastructure</td>
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<td>FSAP</td>
<td>Financial Sector Assessment Program</td>
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<td>G20</td>
<td>Group of Twenty</td>
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<td>IMF</td>
<td>International Monetary Fund</td>
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<td>INSS</td>
<td>Brazilian Social Security Institute</td>
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<td>PFMI</td>
<td>Principles for Financial Market Infrastructures</td>
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<td>QCCC</td>
<td>Qualifying CCP</td>
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<td>Selic</td>
<td>Special System for Settlement and Custody</td>
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<td>Sitraf</td>
<td>Interbank Payments Clearinghouse - Funds Transfer System</td>
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<td>SPB</td>
<td>Brazilian Payments System</td>
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<td>STR</td>
<td>Reserves Transfer System</td>
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<tr>
<td>TC/IOSCO</td>
<td>Technical Committee of the International Organization of Securities Commissions</td>
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<tr>
<td>TED</td>
<td>Electronic Funds Transfer</td>
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<td>IT</td>
<td>Information Technology</td>
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