



# BRAZILIAN PAYMENTS SYSTEM OVERSIGHT REPORT 2015



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## FOREWORD

This is the third edition of the Brazilian Payments System Oversight Report, which is a yearly publication that aims to provide greater transparency to Banco Central do Brasil's (BCB) oversight practices concerning various elements of the Brazilian Payments System (SPB). Oversight intends to foster soundness, efficiency and improvement of SPB, taking into account its importance to the soundness and normal functioning of the National Financial System. In this context, the Report serves as a tool to stakeholders, in terms of perceiving BCB'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.

This Report is composed of four chapters. The first describes the institutions that are overseen by BCB: entities collectively known as Financial Market Infrastructures (FMI)<sup>1</sup>, payment schemes<sup>2</sup> and payment institutions.

The second chapter describes the evolution of SPB in 2015 and presents the volume of transactions and the major regulatory changes that affected FMI, payment schemes and payment institutions.

The third chapter presents the effective oversight practices, which comprise, among others, the monitoring of FMIs' systemic, operational and financial risks and on-site inspections. It also describes the oversight practices on payment schemes, which became part of SPB after Law 12,865, enacted on October 9, 2013.

The fourth chapter presents the oversight policies that will guide BCB's actions in promoting SPB's efficiency and soundness and in the search for an effective access, by the population, of financial services suited to their needs.

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1 Further information about the Financial Market Infrastructures operating in SPB can be found at: <http://www.bcb.gov.br/?FMISYSTEMS>.

2 Information regarding the payment schemes that comprise SPB can be found at: <http://www.bcb.gov.br/?PAYMENTSCHMES>.

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## EXECUTIVE SUMMARY

The third edition of the Oversight Report points out that the main changes regarding FMIs' business models took place after the publication of Circular 3,743, of January 8, 2015, which regulated centralized deposit activities and registration of securities and financial assets. Entities operating FMI that provide those services needed to adjust their systems to the new regulation. As stated in the 2014 Oversight Report, FMI's rules were submitted to BCB within the time limits and are currently under consideration.

The Report also specifies two important regulatory changes that took place in 2015:

- i. Circular 3,765, of September 25, 2015, amending Circular 3,682, of November 4, 2013, which regulates the provision of payments services by the payment schemes participating in SPB. Circular 3,765 defines limits for three-party schemes

and seeks to improve payment schemes' safety and efficiency; and

- ii. Circular 3,722, of December 1<sup>st</sup>, 2015, which regulates the recognition of a foreign central counterparty (CCP) as qualifying by the BCB. The Circular establishes the requirements for foreign CCPs, once recognized by BCB's Board, to provide services to Brazilian clearing and settlement systems that settle OTC operations.

The Report also sets forth the oversight policies (split into payments schemes' policies and FMI's policies) that guide BCB's actions in promoting efficiency and soundness of SPB. The disclosure policy, which began in the 2013 Oversight Report, aims to stimulate solutions aligning market forces with public interest.

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# 1 THE ROLES AND SCOPE OF BRAZILIAN PAYMENTS SYSTEM OVERSIGHT

One of the roles of BCB is to assure the normal, safe and efficient functioning of SPB. In order to achieve this objective, BCB is responsible for the oversight of FMIs and payment schemes participating in SPB based on the following legislation:

- i. Law 10,214, of March 27, 2001<sup>3</sup>, which defines the terms for the operation of the clearinghouses within the scope of the SPB, among other provisions;
- ii. Resolution 2,882, of August 30, 2001, which establishes that it is BCB's responsibility to regulate and authorize the functioning of clearinghouses and other clearing and settlement providers;
- iii. Circular 3,057, of August 31, 2001, which sets forth the oversight of the clearinghouses and other clearing and settlement systems by BCB;
- iv. Law 12,810, of May 15, 2013, which defines the activities of centralized deposit and registration of financial assets and securities, and establishes BCB's and CVM's (Brazilian Securities and Exchange Commission) competency, in accordance with their powers, to authorize, supervise and establish conditions for carrying out these activities;
- v. Law 12,865, of October 9, 2013, which regulates payment schemes and payment institutions;
- vi. Resolution 4,282, of November 4, 2013, which establishes the guidelines for regulation, oversight and supervision of payment institutions and payment schemes participating in SPB;
- vii. Circular 3,682, of November 4, 2013, which approves the regulation regarding the provision of payment services by the payment schemes participating in SPB;
- viii. Policy Statement 25,097, of January 10, 2014, which communicates the adoption, by the Department of Banking Operations and Payments System (Deban) of the Principles for Financial Market Infrastructures (PFMI)<sup>4</sup> in monitoring and evaluating the SPB;
- ix. Circular 3,743, of January 8, 2015, which regulates the activities of centralized deposit and registration of financial assets and securities;
- x. Circular 3,765, of September 25, 2015, which addresses, regarding the payments schemes participating in SPB, interoperability and the clearing and settlement of electronic debit and credit orders;
- xi. Circular 3,722, of December 1<sup>st</sup>, 2015, which regulates the recognition of foreign CCPs as qualifying by the BCB; and
- xii. Policy Statement 29,078, of February 4, 2016, which discloses the systems operating in SPB.

The following table shows the infrastructures operating in SPB under BCB's oversight:

<sup>3</sup> Law 10,214, Resolution 2,882, Circular 3,057, Circular 3,100 and Law 12,865 have their English version available at BCB's webpage. Policy statements are also available in English.

<sup>4</sup> The PFMI were published by the Committee on Payment and Settlement Systems of the Bank for International Settlements (CPSS/BIS) and the Technical Committee of the International Organization of Securities Commissions (TC/IOSCO).

**Table 1 – Classification of the Brazilian Payments System financial market infrastructures**

Name	Classified as <sup>1/</sup>	Activity <sup>2/</sup>
STR – Reserves Transfer System ( <i>Sistema de Transferência de Reservas</i> )	PS	Real-time settlement of Selic and other clearinghouses' operations, Eletronic Funds Transfers (TED), and other critical payments <sup>3/</sup> directly from participants' accounts held in BCB.
Sitraf – Funds Transfer System ( <i>Sistema de Transferência de Fundos</i> ), by the Interbank Payments Clearinghouse ( <i>Câmara Interbancária de Pagamentos – CIP</i> )	PS	Settlement of Client-to-client Electronic Funds Transfers (TED) below R\$1 million.
Siloc – Deferred Settlement System for Interbank Credit Orders ( <i>Sistema de Liquidação Diferida das Transferências Interbancárias de Ordens de Crédito</i> ), by the Interbank Payments Clearinghouse ( <i>Câmara Interbancária de Pagamentos – CIP</i> )	PS	Clearing and settlement of electronic bills up to R\$250 thousand, card transactions, and credit transfer documents (DOC).
Compe – Checks Clearinghouse ( <i>Centralizadora da Compensação de Cheques</i> )	PS	Clearing and settlement of checks up to R\$250 thousand.
Cielo – Multicard Clearing System ( <i>Sistema de Liquidação Financeira Multibandeiras</i> )	PS	Clearing and settlement of Visa card transactions and other card schemes' transactions in which Cielo is the acquirer.
Rede – Domestic Clearing System ( <i>Sistema de Liquidação Doméstica</i> )	PS	Clearing and settlement of card transactions in which Rede is the acquirer.
Selic – Special System for Settlement and Custody ( <i>Sistema Especial de Liquidação e de Custódia</i> )	CSD, SSS	Clearing and settlement of government security transactions.
BM&FBOVESPA Clearinghouse ( <i>Câmara BM&amp;FBovespa</i> )	CCP, SSS, TR	Registration, clearing, and settlement of financial derivatives and commodities market operations.
BM&FBovespa Foreign Exchange Clearinghouse ( <i>BM&amp;FBovespa – Câmbio</i> )	CCP, PS	Clearing and settlement of interbank foreign exchange transactions.
BM&FBovespa – Securities Clearinghouse ( <i>BM&amp;FBovespa – Ativos</i> )	CCP, SSS	Clearing and settlement of government security transactions.
BM&FBovespa – Equities Clearinghouse ( <i>BM&amp;FBovespa – Ações</i> )	CCP, CSD, SSS, TR	Clearing, and settlement of equity and corporate bonds transactions.
BM&FBovespa – Registration System ( <i>BM&amp;FBovespa – Registro</i> )	TR	Registration of securities and over-the-counter market operations. <sup>4/</sup>
Cetip – Organized Over-the-Counter Market for Securities and Derivatives, by <i>Cetip S.A. Mercados Organizados</i>	CSD, SSS, TR	Registration, clearing and settlement of transactions involving corporate, state and municipal bonds, derivatives and others.
C3 – Credit Assignment Central ( <i>Central de Cessão de Crédito</i> ), by the Interbank Payments Clearinghouse ( <i>Câmara Interbancária de Pagamentos – CIP</i> )	SSS, TR	Recording of all information regarding credit assignment transactions.

1/ Central Counterparty (CCP), Central Securities Depository (CSD), Payments System (PS), Securities Settlement System (SSS), Trade repository (TR) according to the classification of Policy Statement 29,078, of 2016, based on the PFMI.

2/ Further information about each FMI can be seen at BCB's web page: <http://www.bcb.gov.br/en/#/n/FMISYSTEMS>.

3/ Including bilateral settlement of checks and bar-coded electronic bills (BPs) above R\$250 thousands.

4/ Time Deposits (CDB), Structured Transactions Certificates (COE), Real Estate Credit Bills (LCI) and Agribusiness Credit Bills (LCA).

## 2 EVOLUTION OF THE BRAZILIAN PAYMENTS SYSTEM IN 2015

### 2.1 VOLUMES TRANSACTED THROUGH THE FINANCIAL MARKET INFRASTRUCTURES

The figures below show the average daily gross values transacted through the FMIs. It is worth noting that, as part of these values has final settlement in STR, some of them are double-counted.

**Table 2 – Average Daily Transactions (R\$ million)**

	System	2014	2015
Funds Transfer Systems	STR	1,054,284	1,115,737
	CIP-Sitraf	15,391	16,528
	CIP-Siloc	13,058	13,792
	Compe <sup>1/</sup>	4,366	4,165
	Cielo	1,757	1,881
	Rede	1,272	1,426
Systems responsible for providing clearing, settlement, repository, and depository services	Selic <sup>2/</sup>	1,858,932	2,088,398
	BM&FBOVESPA Clearinghouse	4,864	12,677
	BM&FBovespa – FX <sup>3/</sup>	3,427	4,450
	BM&FBovespa – Securities	0	-
	BM&FBovespa – Equities	7,504	7,234
	BM&FBovespa – Registration <sup>4/</sup>	304	336
	Cetip <sup>5/</sup>	84,741	110,407
	CIP-C3	194	150

1/ Total value of checks, including refunds and adjustments.

2/ Disclosed values now include repo and intrabanking transactions.

3/ Revised values for 2014.

4/ Including LCI, CDB and COE. Values starting in March/2014.

5/ Disclosed values now include intrabanking transactions.

Additional statistics, including data from previous years, can be obtained on the website: <http://www.bcb.gov.br/?PAYSYSDATA>.

All funds transfer systems presented an increase in average daily values. The only exception was Compe, which presented a decrease of approximately 5%, as a result of the continuing decline in the use of checks.

### 2.2 SIGNIFICANT CHANGES IN THE MARKET INFRASTRUCTURES THAT INTEGRATE THE BRAZILIAN PAYMENTS SYSTEM

#### ADJUSTMENTS REQUIRED BY CIRCULAR 3,743

Entities operating FMIs that carry out registration and centralized deposit of financial assets and securities needed to adjust their systems' rules to the provisions of Circular 3,743. Thus, these FMIs' business models now have to contemplate procedures of operations conciliation, traceability and control of non-standard operations, among others

procedures described in the regulation. As reported in the 2014 Oversight Report, in April 2015, the above-mentioned entities submitted their statutes and rules to BCB on time. BCB has been analyzing if these rules are in compliance with Circular 3,743.

### 2.3 PAYMENT SCHEMES

In 2015, there were turnovers of R\$ 678 billion from credit cards and R\$ 390 billion from debit cards, which represented increases of 9% and 12%, respectively, in relation to the previous year. There were 5.7 billion transactions with credit cards and 6.5 billion transactions with debit cards issued in the country, an increase of 3% and 15%, respectively, compared to 2014. Taking into account what happened in the last few years, one could expect that the trend towards the use of debit cards will even accelerate.

The amount of active credit and debit cards remained stable compared to 2014, but there was a small reduction of cards labelled “basic” and an increase of 26% in the category “premium”.

The table below shows the distribution of active cards according to each category in the fourth quarter of 2008 and 2015, as well as the relative participations in terms of volume and value of transactions. In this period, there were a reduction in the portfolio, volume and value of the “basic” category and an increase in the portfolios, volumes and values of cards categorized as “premium” and “intermediate”.

**Table 3 – Distribution of active cards by category (fourth quarter)**

Category	Amount of active cards (%)		Amount of transactions (%)		Value of transactions (%)	
	2008	2015	2008	2015	2008	2015
Premium/Intermediate	13.6	26.1	28.3	43.4	35.4	49.3
Basic	82.9	67.8	69.0	52.4	58.2	42.9
Corporative	1.6	5.1	2.2	3.6	5.6	7.0
Others	1.9	1.0	0.5	0.6	0.8	0.8

Moreover, this change in the composition of credit card portfolios has contributed to the increase in the average interchange fee (percentage of the purchase that the acquirers pass on to issuers), which represented 46% of the merchant discount rate in the fourth quarter of 2008 and raised to 59% of that rate at the end of 2015 (an increase of 28% in the period). Installment operations<sup>5</sup>, a factor that could have contributed to the increase of the interchange fee, remained broadly stable. In the period, the interchange fee of debit cards increased from 50% to 54% (an increase of 8%).

The decrease in the number of checks in 2015 was higher than in previous years, with reductions of 12% in volume and 9% in value compared to 2014. The amount of cash withdrawals remained stable. However, the value of withdrawals fell 4.5%, indicating a decrease in the average value of these transactions. These data indicate the continuity of the process of replacement of paper-based instruments by electronic payments.

In the acquiring market, the concentration ratio of the two largest acquirers had a slight decrease, from 88.7% in 2014 to 86.1% in 2015, considering the turnovers from credit and debit cards<sup>6</sup>. Regarding only Visa’s and MasterCard’s acquiring market<sup>7</sup>, the concentration ratio of the two largest acquirers decreased from 90.8% to 88.7%.

5 Translator’s note: in Brazil credit card purchases can be negotiated in several installments directly with the merchant (so-called “parcelado lojista”, i.e. merchant credit). Credit card operations are settled to merchants in 30 days and debit cards in 2 days, on average.

6 Transactions from the acquirer BRB/Globalpayments are not included. Transactions from Bancoob/First Data begin in the first quarter of 2015.

7 Transactions with these firms represent 90% of the payment card total turnover.

Since the opening of the acquiring market in 2010, the average merchant discount rate for purchases with credit cards and debit cards fell from 2.95% to 2.75% and from 1.58% to 1.51%, respectively. However, the cost of connectivity and POS rentals increased 65%<sup>8</sup>, reaching 18% of the average cost to merchants when accepting card payments and thus reducing partially the benefits stemmed from the decrease in the merchant discount rate.

Automated Teller Machine (ATM) infrastructure started to show the effects of terminal sharing via Banco24Horas network, due to the replacement of proprietary terminals of financial institutions by shared terminals of TecBan. The result was an increase of 12.7% in the average number of transactions on shared terminals and a decrease of 6.8% in the average number of transactions in proprietary terminals.

Regarding access channels' use<sup>9</sup>, about 60% of transactions were carried out in remote channels. The number of transactions using mobile phones more than doubled compared to 2014, increasing to 20% of the total amount of customer transactions, the same percentage of use of ATM. The more traditional physical accesses keep declining, representing only 22% of transactions in 2015. In physical channels, about 70% of transactions involve financial transactions such as bill payments, deposits, transfers and withdrawals. For banking correspondents (agents) in particular, bill payments and withdrawals represent 81.2% of transactions. On the other hand, in remote channels, 70% of operations do not involve financial transactions (account balance checks and other non-financial transactions, for instance).

Complete statistics, including data from previous years, are available on the website: <http://www.bcb.gov.br/?SPBADENDOS> (Portuguese only).

## 2.4 REGULATORY CHANGES

Circular 3,772, of December 1<sup>st</sup>, 2015, regulates the recognition of foreign CCPs as qualifying by the BCB. The regulation allows foreign CCPs, once recognized by the BCB as qualifying, to provide services to Brazilian clearing and settlement systems and their clearing members. A foreign CCP should be in compliance with the regulatory provisions of its jurisdiction in order to be eligible

for that recognition. Those provisions must be in accordance with minimum requirements established in the Circular 3,772, such as: the existence of authorization and supervision processes equivalent to the processes that Brazilian CCPs are subject to; the compliance with principles equivalent to the principles of efficiency, security, integrity and reliability that underpin SPB, as well as the compliance with the recommendations and principles formulated by the Payments and Market Infrastructure Committee (CPMI) and the International Organization of Securities Commissions (IOSCO); and the existence of procedures for preventing money laundering. In addition, an agreement between BCB and the equivalent foreign authority, defining the mechanisms of information exchange and of reporting relevant events on the foreign CCP activities in its home jurisdiction, is necessary.

The Circular restricts the provision of services by foreign CCPs only to clearinghouses and providers of clearing and settlement services that settle exclusively OTC markets.

This regulation is in line with international recommendations adopted after the 2008 crisis, that pointed out the need for improving risk assessments of globally active financial institutions and, in particular, for expanding the scope of FMIs, especially CCPs, with the objective of improving financial risks management.

In that sense the PFMI created a favorable environment for more consistent and harmonic assessment of FMIs across jurisdictions. Thus, those institutions' member countries have pledged to adopt the principles and responsibilities contained in the PFMI. The jurisdictions that comprise the Financial Stability Board (FSB) and the participants of CPMI-IOSCO have been monitored for the implementation of the PFMI, which also led to the necessity for Circular 3,772.

It is worth mentioning, among other important regulatory developments in 2015<sup>10</sup>, the Circular 3,765, of September 25, 2015, which aimed to improve the safety and efficiency of payment schemes.

Among the improvements proposed by that Circular one can highlight the centralization of the clearing and settlement of obligations arising under a payment scheme in a neutral agent; the centralization of the default risk management in payment

<sup>8</sup> Deflated data.

<sup>9</sup> Retail access channels include physical accesses (ATM, bank branches and banking correspondents) and remote accesses (internet, mobile phones and call centers).

<sup>10</sup> Circular 3,743, of January 8, 2015, which regulates the activities of registration and centralized deposit of financial assets and the establishment of charges on deposited financial assets, was examined in the 2014 Oversight Report and will not be discussed here.

schemes; the restrictions on the existence of three-party payment schemes (except for those who offer prepaid payment accounts); and the details about the concept of interoperability in the context of a single scheme and among schemes.

Regarding the centralization of clearing and settlement of obligations arising under a payment scheme in a neutral agent, BCB believes that the existence of multiple providers of clearing and settlement services brings about inefficiencies, such as the need for participants to develop and maintain multiple systems and connections with each of the service providers. Another inefficiency is that the potential of multilateral netting is not fully met. This understanding was first voiced in the Report on the Brazilian Retail Payment System, in May 2005, which concluded that there was excessive fragmentation of the clearing and settlement infrastructures of retail transactions in Brazil. Later on, in 2010, the Report on the Payment Card Industry emphasized the importance of neutrality in the provision of clearing and settlement services for participants.

Concerning the centralization of the management of financial risks in guaranteed payment schemes<sup>11</sup>, the goals were to eliminate inefficiencies coming from bilateral guarantees management between participants, to mitigate any discriminatory treatment among participants, so to improve the safety and efficiency of such schemes.

On the interoperability issue, Circular 3,765 provides guidance about interoperability between payment schemes, taking into account interactions with the industry, in particular during authorization procedures. In this respect, the regulation states that interoperability should aim to allow a user to pay to or receive payments from a single account (no matter if a deposit or a payment account). The regulation also clarifies that the requirement for participation should not be imposed as the only interoperability way between payment schemes.

About interoperability among participants in a same scheme, it is necessary that the rules and procedures describe all the relationships involving the different types of participation in the payment scheme, which also includes interoperability between acquirers and providers of network services. This issue is addressed with more details at the end of this chapter in a specific Box.

11 Translator's note: guaranteed payment schemes are defined as the schemes that guarantee the settlement of their transactions. This means that irrespective of a given fail in any part of the payment chain, the scheme guarantees that the merchant's financial institution will receive the total amount of the transactions that have been authorized.

The regulatory changes brought by Circular 3,765 imposed to payment schemes the submission of changes in their rules in order to adapt them to the new requirements. The regulation set a deadline of 180 days for that submission.

Another important feature of Circular 3,765 is that it also established limits for three-party schemes. In this regard, the 2014 Oversight Report had warned that:

*The competitive impacts of closed-loop payment schemes have limited range in principle. [...] Thus, certain closed-loop payment schemes cause, at first, low impact in terms of competition, since they are relatively small. It is clear, however, that this assumption should be evaluated in each case, in light of actual facts, in order to ensure that BCB's role is in line with the principles of competition and interoperability between payment schemes established by the aforementioned law [Law 12,865, of 2013].*

Circular 3,765 limited the size of three-party schemes to the aggregate turnover amount, in twelve months, of R\$ 20 billion for two main reasons: a) payment schemes (except for those who offer prepaid payment accounts) already have a well-established business model and therefore are less innovative; and b) the concentration in the domestic banking market enable the existence of large three-party schemes with potential to harm competition.

The regulation seeks to bring a better balance between the desirable principles of innovation, competition and interoperability. This new provision does not apply to payment schemes based in prepaid payment accounts and to those in which the settlement of transactions is carried out exclusively on the books of the issuer of the payment instrument.

In order to promote a better understanding of the regulation by stakeholders, BCB held several events such as the II Seminar on Payment Schemes and Payment Institutions<sup>12</sup> and a technical meeting that explained the effects of Circular 3,765.

12 This seminar, whose attendance included government agencies, international guests, market participants and other stakeholders aimed to promote debate with national and international experts in order to exchange knowledge on payment schemes and payment institutions and deepen discussions.

### **NETWORK SERVICE PROVIDER – INTRA-SCHEME INTEROPERABILITY**

The network service provider (PSR) is the entity that captures and routes payment transactions under a certain payment scheme using a network of electronic communication. It differs from the acquirer, which licenses merchants and participates in the settlement process of payment transactions.

According to Circular 3,682, of November 4, 2013 (art. 11), network service providers as well as payment institutions (acquirers for instance) are participants in payment schemes. The same regulation establishes (art. 12) that the criteria for participation in payment schemes must be public, objective and non-discriminatory. The exception to open participation applies only to three-party schemes and exclusively for activities involving account management, issuance and acquirement, not encompassing the provision of network services. Thus, participation rules must enable a broad participation of PSRs in both four-party and three-party schemes.

The adoption by payment schemes of business models that implies a mandatory link of two activities is forbidden (art. 14 of Circular 3,682). Accordingly, the rules of payment schemes concerning the acquirement and the provision of network services (even if provided by the same entity) cannot impose a vertical model.

Finally, the regulation requires that the rules and procedures governing the interoperability within the same payment scheme address all relationships between the different types of participation (art. 29, III, of Circular 3,682). Thus, under the same payment scheme, there should be interoperability between the activities of acquirement and network service provision.

In short, in three-party payment schemes, acquirement is exclusive, but network service provision must be open. In the case of four-party payment schemes, both activities must be open and payment schemes rules and procedures must ensure interoperability between them.

It is BCB's standpoint that the separation of the two activities and the interoperability between them, under the same payment scheme, allow diversity of business models, including the existence of independent network service providers and acquirers, thus promoting a competitive environment in this market, in line with legal requirements.

## **2.5 SPB FORUM**

The thematic forums related to SPB were formally established on June 23, 2015. The main purpose of the forums is to structure a direct and permanent channel of communication between BCB and the entities involved in SPB. The thematic forums comprise a forum for topics related to FMI (FMI Forum) and one for payment schemes and payment institutions issues (AIP Forum). Working groups with specific purposes are also part of the thematic forums. These groups are set for specific periods and their efforts do not necessarily coincide with the meetings of the thematic forums, and this reinforces the intention of permanent liaison between BCB and the industry.

In the forums, BCB expects to collect proposals for improvements in both areas. They are also a place where stakeholders' actions

can be coordinated. In addition, discussions and studies conducted in the forums can be useful to the permanent reviews and development of policies and regulation.

Conclusions drawn in the forums neither override the regulation in force, nor the policies established by the BCB. Suggestions made in the forums are not binding. Nevertheless, active engagement of market entities participating in the forums is essential to deepen discussions and to the achievement of the forums' objectives.

The FMI Forum is composed of entities operating FMIs and associations representing FMIs participants. The AIP Forum consists of entities operating FMIs that settle transactions within

payment schemes, representative associations of payment institutions and end users of payment schemes. In both forums, other government entities, public regulators or private stakeholders may be allowed to debate specific subjects.

Overall forum coordination is carried out by BCB, who sets how the work shall be conducted, defines the creation of specific scope working groups, and coordinates activities of entities involved in implementing solutions approved at the thematic forums.

It is worth noting that even before the formalization of both forums, BCB had already been meeting with market participants and discussing relevant issues, such as the possibility of extending the STR operation beyond 23:59 and access rules in payment schemes.

Since the formal establishment of the thematic forums, a specific meeting of the FMI Forum was held on December 14, 2015. The following issues were addressed: the creation of the STR Unavailability Working Group, clarifications on the authorization of the registration activity in compliance with Resolution 4,088, of 24 May, 2012, general exposition on the registration and centralized deposit activity (Circular 3,743), and explanations about provisions introduced by Circulars 3,772, 3,773 and 3,774.

The aforesaid actions aim to consolidate the forums as permanent interaction channels with the industry. Some of forums' intended objectives are the achievement of better policies and enhanced coordination of actions taken by the entities involved in issues related to FMIs, payment schemes and payment institutions.

## 3 OVERSIGHT ACTIVITIES

In 2015 BCB proceeded with the assessment of entities operating FMI regarding their observance of the PFMI.

In general and in line with what was presented on the 2014 Oversight Report, the FMIs assessed in 2015 were considered broadly compliant with the PFMI.

The following sections present the results of the analysis of data that are regularly collected from the various FMIs that comprise the SPB. Such data enables BCB to monitor the FMIs and their risk management.

Oversight activities are complemented by on-site inspections and assessments of systems in relation to best practices and international standards.

The way in which FMIs deal with past failures is regularly monitored as a means of reducing the probability of recurrence.

### 3.1 MONITORING PROCESS

#### 3.1.1 CLASSIFICATION OF FMIs ACCORDING TO SYSTEMIC RISK

Circular 3,057, of August 31<sup>st</sup>, 2001, set out criteria for qualifying a system as systemically important. Considering the criteria applicable specifically to funds transfer systems, Sitraf, Siloc, Compe, Cielo, and Rede were not systemically important in 2015. The Circular classifies every system that clears and settles securities as systemically important.

#### 3.1.2 MONITORING OPERATIONAL RISK INDICATORS

The monitoring of operational risk in payment systems comprises the monitoring of the availability index, the amount of failures and the capacity utilization in real time settlement systems.

The availability index in systemically important systems should be at least 99.8%, as defined in Circular 3,057.

In 2015, all assessed systems achieved higher indexes than the minimum set out by regulation, with the exception of Cetip.

Nevertheless, Cetip has already taken the necessary measures to recover its availability index, and BCB has been monitoring these measures.

Capacity utilization<sup>13</sup> is particularly relevant in systems that settle in real time. Regarding the systems evaluated in 2015, STR presented maximum daily capacity utilization of 26.48%<sup>14</sup>, while Sitraf presented 94.69%.

In 2014, Sitraf presented maximum daily capacity utilization of 88%. At the time, BCB announced that it would monitor the FMI's efforts to upgrade the system's processing capacity. In 2015, CIP developed analysis methodologies for its three infrastructures (Sitraf, Siloc and C3), with the purpose of forecasting volumes of transactions and predicting processing peaks. Taking into account that the maximum daily utilization of Sitraf has risen in 2015 and considering the recent implementation of new models, BCB will continue to monitor CIP's efforts to adjust its processing capacity.

#### 3.1.3 MONITORING FINANCIAL RISK INDICATORS

BCB performs tests with the infrastructures that act as central counterparties (see Table 1) to verify whether the guarantees and safeguards required from the participants, calculated by the CCP's risk system<sup>15</sup>, are capable to cope with an event of default by participants.

The tests performed in 2015 indicated that the safeguards of each infrastructure would be sufficient to cover the credit and liquidity risk exposures.

13 Capacity utilization is calculated as the ratio between the number of transactions processed on the busiest day at a given time period and the daily processing capacity proven in tests.

14 This percentage refers to the amount of 264,800 messages settled on a record dating to the 1<sup>st</sup> semester of 2015, when the proven capacity processing of STR was of 1,000,000 messages, according to tests. For the 2<sup>nd</sup> semester, with the new processing capacity of 1,250,000 messages, the peak recorded was approximately 300,000 messages, corresponding to 23.99% of its processing capacity.

15 Clearinghouses that act as CCPs are subject to liquidity and credit risks. To protect themselves from these risks, CCPs use individual guarantees deposited by participants, their own equity, additional safeguards, usually in the form of collateral pools, and credit facilities with liquidity providers. The principal risk is mitigated through the delivery versus payment (DvP) or payment versus payment (PvP) mechanism, which ensures that corresponding obligations are mutually conditioned.

Further information about the methodology is available in BCB's Financial Stability Report on the SPB chapter, at: <http://www.bcb.gov.br/?relestab> (available only in Portuguese).

### 3.2 INSPECTION

Inspection in Selic was carried out from March 2 to March 6, 2015. It revealed Selic's adequate capacity of processing its systems for prolonged periods on the main site as well as on the contingency site. Therefore, this twofold capacity assures a lower risk to the infrastructure, should the contingency processing need to be triggered (a positive aspect considering its business continuity plan, change management and its processing capacity management).

The inspection on Compe, held from March 16 to March 27, 2015, concluded that there is room for improvement in internal controls and internal audit.

Findings from inspection on Cetip, conducted from May 4 to May 15, 2015, depicted a need for continuity in the evolution on its governance structure and general risks management.

In the inspection carried out at BM&FBOVESPA, from August 3 to August 28, 2015, BCB endorsed the international benchmarking work conducted by the entity on aspects relating to governance. During the inspection, BCB gathered information for the authorization process of the post-trading infrastructures integration.

Inspection on CIP, conducted from November 9 to November 20, 2015, emphasized the structuring of the area responsible for risk management, compliance and internal audit, eliminating potential conflicts arising from the former organization. Regarding operational risk, despite actions taken there are still opportunities for improvements.

On-site inspections resulted in action plans, under the responsibility of the FMIs, for addressing identified gaps. These plans have schedules that are being monitored by BCB.

### 3.3 PAYMENT SCHEMES OVERSIGHT

The authorization process is the first BCB's oversight activity for payment schemes participating in SPB. Applications for authorization of 51 payment schemes established by 35 payment scheme owners are currently under analysis.

Authorizations are not required from payment schemes that do not represent risk to the normal functioning of retail payments, according to Resolution 4,282, of November 4, 2013 (art. 6). Payment institutions participating exclusively in payment schemes that are not part of SPB do not need to be authorized as well, according to BCB's evaluation.

After the payment scheme authorization process, oversight activities defined in art. 23 of the regulation annexed to Circular 3,682, of November 4, 2015 will be taken, including indirect monitoring and on-site inspections.

## 4 OVERSIGHT POLICIES

This chapter presents BCB's oversight policies aiming to promote the efficiency and soundness of SPB. The topics are divided into policies for payment schemes and policies for financial market infrastructures.

Some general principles guide these policies, such as: efficiency, safety, integrity, and reliability of payment systems; soundness and efficiency of payment schemes and payment institutions; innovation and diversity of business models; interoperability between payment schemes, infrastructures, payment instruments, and access channels; non-discriminatory access to payment schemes and infrastructures; meeting the end users' needs; reliability, quality, and security of payment services; financial inclusion; regulation adjusted to the risks involved; preservation of the value and liquidity of assets held in payment accounts.

The disclosure of these policies aims to stimulate solutions aligning market forces with public interest. These solutions may derive from regulation or from the market itself.

### 4.1 POLICIES FOR PAYMENT SCHEMES

Since the enacting of Law 12,865, of October 9, 2013, BCB has strengthened contact with associations and market participants to clarify important points of the regulation, to increase the transparency of its actions and policies and to deepen the knowledge about retail payments in order to improve its performance as regulator.

As stipulated in Resolution 4,282 of November 4, 2013, BCB must pursue the principles and objectives designated in Law 12,865. BCB's actions are carried out mainly through policies and regulations. In this sense, BCB has been using this report as a means of communicating to the stakeholders and to the society the policies aiming to promote the implementation of those principles and to achieve objectives.

BCB considers important that clear policy communication is a way to guide the conduct of stakeholders and market agents, and an opportunity for debating implementation of such policies and, if necessary, for improving them. An example of this approach is the Forum AIP.

The provision of payment services demands a great deal of collective effort and coordinated decision making process for achieving public objectives. One can only succeed if there is a broad dialogue between regulators and stakeholders and if stakeholders themselves seek those objectives, also by means of self-regulation.

Still, if dialogue proves insufficient for the implementation of desired policies, BCB can always resort to its normative power, e.g. when Circular 3,765 was enacted.

#### 4.1.1 PAYMENT SERVICES AS A MEANS OF FINANCIAL INCLUSION AND MOBILE PAYMENTS

BCB took part in a task force with BIS/CPMI, the World Bank and other central banks in order to analyze payment aspects of financial inclusion. This activity is part of BCB's effort to enter into agreements with domestic and foreign partners to foster payment services.

A draft version of the report "Payment Aspects of Financial Inclusion" was released in 2015<sup>16</sup>. The report highlights the role of payment services as an entry-door to financial services (savings, insurance, credit, investment). The report also presents the elements that hinder a broader access to payment services and their regular use. The main elements comprise direct and indirect costs, low income of part of the population, informality of part of the labor force, inattention to cultural and religious aspects, low information, imbalance between the provision of services and end users' real needs, and lack of confidence in the safety of those services.

The above-mentioned report set forth recommendations aiming to underpin leading actions towards a broader financial inclusion. The recommendations, stated below, are already in process of implementation and are part of the overall policy of stimulating payment services as inducers of financial inclusion:

- Explicit and continuous commitment of public and private sectors is required to broaden financial inclusion;

16 Available at: <http://www.bis.org/cpmi/publ/d133.pdf>.

- Legal and regulatory frameworks shall favor financial inclusion, address the risks faced by users, and at the same time promote innovation and competition;
- Financial, communication and information technology infrastructures must be sound, safe, efficient and widely accessible to effectively support the supply of transaction accounts<sup>17</sup> and of a broad range of financial services;
- The supply of transaction accounts and payment services has to effectively satisfy end users' needs at low cost or even free of charge;
- Usefulness of transaction accounts is enhanced when an extensive network of access points with a widespread geographic coverage exists, offering a large range of interoperable access channels;
- Individuals shall be informed through financial education efforts about the benefits of having and using transaction accounts, how to make payments and to store value with them, and how to get access to other financial services; and
- Widespread and recurrent payment flows, such as government payments and international remittances, are used to boost financial inclusion, once they encourage the adoption of transaction accounts and stimulate their frequent use.

#### MOBILE PAYMENTS

BCB considers that the supply of mobile payments services through users' devices is below the desirable level. The increase of this supply depends on subjective elements such as changes on users' habits. Additionally, the lack of provision of innovative and inclusive business models can be related to the fact that every change impacts the way the industry is organized and business models in place.

Yet with respect to financial inclusion, some payment instruments shall be sparingly examined, due to the potential risk of over indebtedness they pose on users and specific operational requirements, such as credit cards.

<sup>17</sup> Transaction accounts comprise bank accounts or accounts at other authorized entities, including prepaid accounts that can be used to make or receive payments and to store value.

Debit cards demand the existence of demand deposit account at a bank or credit union. So far, this model has not proved itself viable for part of the financially excluded population. However, there would be less criticism to this model if it could charge lower user fees so to facilitate access for the financially excluded. In this sense, it is acknowledged the contribution of mobile device based technology to financial inclusion.

On the other hand, mobile payments based on prepaid accounts, an incipient industry in Brazil, can work as an access platform to transaction accounts, fostering financial inclusion<sup>18</sup>.

Therefore, there is room for the coexistence between diverse solutions, with complementarity between mobile payments based on prepaid accounts and other standard instruments, such as those based on demand deposit accounts. This coexistence can potentially increase social welfare.

Following the provisions of article 8 of Law 12,865, of October 9, 2013, BCB will take this issue to debate at the Forum AIP in 2016, with the involvement of relevant stakeholders, expecting new proposals to further developments on this subject.

#### 4.1.2 CONVENIENCE IN THE USE OF ELECTRONIC PAYMENT INSTRUMENTS

Regarding the convenience of payments, the discussion on the topic "Faster payments" in previous reports will take place in this section from now on.

Fast payments, also known as faster, immediate or instant payments, allow the transfer of funds between users in a few seconds, including the receipt confirmation to the beneficiary, at any time (24x7x365), and at low cost to final users. The speed of payments' processing brings certainty (finality), transparency, potential reduction of some types of fraud (such as undue chargebacks), and reduction of financial costs associated with the existing settlement lag in other instruments. Studies also

<sup>18</sup> Financially excluded people are familiar with mobile devices (including the use of USSD menus) and with the deposit of credits on prepaid mobile accounts. Regarding the infrastructure, the range of the mobile telephone network enables this channel to reach areas that are not economically viable for traditional channels, such as bank branches. Additionally, telecommunication companies already have a well-established network of agents that sell credit for prepaid mobile accounts. This network can serve as the basis for the agent network for mobile payments. In addition, these schemes can be used both in remote and face-to-face transactions.

show that the acceleration in the circulation of money due to fast payments has the potential to increase economic growth<sup>19</sup>.

Besides these advantages, the demand for fast payments is a natural consequence of the evolution of information technology in modern society, where instantaneousness and broad availability (at any time) are attributes expected in interactions mediated by these technologies. This demand tends to become increasingly stronger, as new generations that have grown up in this technological environment become users of payment services.

On the other hand, taking into account the speed at which the transfer takes place, fast payments require due caution about the security of transactions (for example, with respect to the certainty of the authentication of both payers and payees) as well as the procedures for the prevention of money laundering and terrorism financing.

There is an increasing discussion on fast payments at the international level. United States and Europe are examples of jurisdictions that are interested in this issue. In the United States, the Federal Reserve has conducted an extensive program of meetings with the industry in order to promote the adoption of a fast payments scheme in the country. In Europe, the Euro Retail Payments Board (ERPB), a group coordinated by the European Central Bank consisted of associations of providers and users of payment services, requested the European Payments Council (an association representing payment service providers in Europe) to develop a fast payments scheme until November 2016 that can become operational until November 2017. In the second half of 2016 it is expected the publication of a report coordinated by the BIS/CPMI, with the participation of BCB, about fast payments.

At local level, the BCB has sponsored discussions about fast payments, like those that took place at the II International Seminar on Payment Schemes and Institutions in November 2015.

As highlighted in previous oversight reports, the payments industry has not been able to introduce an alternative to checks in high-value retail transactions, so far. In these cases, the use of cards is very expensive because the charged fees are proportional to the value of the transaction. Likewise, electronic transfers (book transfers and credit orders) are not sufficiently convenient for a widespread use at selling points.

BCB believes that fast payments can substitute checks in high-value retail transactions. However, changes in card pricing and/or new facilities to traditional payment instruments can also potentially aid in the substitution of checks in high-value purchases.

#### 4.1.3 EFFICIENCY IN THE PROVISION OF PAYMENT SERVICES

Industry's studies about costs were presented to BCB. In a general way, the industry tried to explain the current cost structure, as well as the possible effects on the market of different theoretical structures. These studies can contribute to the policy-making process and to regulatory fine-tuning with the aim of improving the overall payments environment.

Regarding the reduction of credit card transactions' settlement interval, the studies assessed the possible consequences of such a change on market equilibrium. In this issue, BCB keeps its message to the industry about the desirability of such reduction, which would bring Brazil more in line with international standards. This reduction would make the price structure of credit cards more transparent to end-users (payers and payees). The possibility of price differentiation according to each payment instrument would reinforce that goal. Equal prices for payment instruments with different costs imply a subsidy that benefits the one paying with the higher-cost instrument.

Price transparency could lead to a better utilization of the set of payment instruments, closer to the socially optimum. Many studies conclude that credit cards have higher costs compared to other instruments, such as debit cards for instance. Nonetheless, the non-discrimination of prices combined with the benefits attached to credit card (rewards, low fixed fees, etc.) stimulates over-utilization of that instrument.

Reduction of credit card transactions settlement interval is compatible with the existence of a specific facility called "parcelado lojista", a credit provided by merchants to their customers, by which purchases are paid in installments, widely used in Brazil. Eventual shortening of the settlement interval means only that funds will be available to the payee earlier than usual, either for a single installment settlement or for each installment settlement of the "parcelado lojista".

Nonetheless, eventual changes shall be implemented in a planned and gradual way, taking into account potential impacts, also on market equilibrium.

<sup>19</sup> See <[www.swift.com/node/19386](http://www.swift.com/node/19386)>.

### **“BOLETO DE PAGAMENTO”**

“Boleto de Pagamento” (BP) is a bar-coded electronic document that allows bills/donations to be paid in any bank, regardless of the payee’s bank.

BPs are widely-used payment instruments in Brazil (nearly 10 million BPs are settled daily), through which one can pay pre-established obligations (debt collection BP) or even take on new obligations in the moment of the payment (proposal BP). In the latter case, in addition to serving as a payment instrument, the BP can also offer products and services\*, as a civil contract proposition or as an invitation to associations.

This broad use of BPs was regulated with the enactment of Circular 3,598, of June 6, 2012. Until then, BP had its use restricted to pre-contracted debt, linked to specific legal transactions (purchase and sale or provision of services). Besides increasing the range of the instrument, the new regulation promoted other adjustments, such as the settlement process. Moreover, it brought features for consumer protection, such as the mandatory requirement to contain expiration date and value, which in the case of credit card bills must correspond to the total amount of expenses.

Since then, BCB has identified the possibility of implementing improvements in the instrument and, more urgently, the need to address fraud growth. The main identified fraud is related to the physical or electronic falsification of the BP, improperly allocating funds to the fraudster account. These frauds reduce the confidence in the payment instrument, which is essential to its efficient use. They also generate a significant amount of losses and conflicts between payers, payees and the institutions that provide BP related services.

In this context, BCB supports and is closely monitoring the project that is under development by market entities for the creation of a central database of BPs, which will allow a check of all required data for a proper payment. It is worth mentioning that the centralized database will make possible the payment of a BP in any bank after the due date, including the related fine, interests and other charges. It will also increase the amount of BPs submitted in electronic channels (internet, ATMs, etc.) through the Authorized Direct Debit (DDA), which adds convenience to payers.

The need for a centralized database as a means of mitigating fraud implies the impossibility of the issuance of unregistered BPs (widely used in internet sales, offers, and donations). However, the registration requirement does not preclude the recipient to issue and present the BP directly to the payer. In this case, the beneficiary must send the required information for registration.

The cost of the instrument – taking into account the need for the centralized database and, accordingly, the registration of all BPs – is also a matter of concern by BCB, especially regarding the impact on current users of non-registered BP. Therefore, BCB is working with the industry in order to avoid any abuses. Noteworthy are two key non-exhaustive issues to be observed by the industry in this regard: (a) no imposition of additional services attached to the register (tie-in sales), such as the printing and mailing of BPs; and (b) provision of two forms of pricing: charges based on records (all registered BPs are charged) and on the settlement (only the effectively paid BPs are charged), or a combination of both.

In short, BCB is sponsoring a new round of improvements and will be vigilant to mitigate any adverse effects derived from BP recent changes.

\* The provision of the necessary information related to the offer/contract by the supplier is binding.

#### 4.1.4 ATM INTEROPERABILITY

Concerning ATM interoperability, large banks keep substituting proprietary ATMs located outside branches by shared ATMs. This strategy enables shared network expansion and costs rationalization of the ATM network. For end-users, ATM sharing leads to more convenience for standard transactions, also by eliminating redundancies, like the ones usually seen in malls and airports, and by increasing ATM availability to all bank clients at additional spots.

In 2015, while the number of transactions at proprietary ATMs decreased around 5%, the number of operations in shared ATMs increased around 7%. Considering only the transactions on a shared basis, i.e., not carried out by customers of the network owner, the increase was around 10% in 2015.

BCB considers that infrastructure sharing, without harm to the efficiency in the provision of services to end-users, is positive and will monitor the evolution of this trend so all payment service providers can benefit from ATM interoperability.

#### 4.1.5 CROSS-BORDER PAYMENT SCHEMES

To date, the industry has not been able to adopt solutions to cross-border payments in a multilateral and interoperable way through connections between domestic and foreign financial markets infrastructures<sup>20</sup>.

In what concerns remittances to and from Brazil, they remain very concentrated on the traditional correspondent-banking model. This model, although associated with a large capillarity and diversity in Brazil due to almost 3,000 foreign exchange correspondents, could be broadened by the adoption of technological, multilateral and interoperable solutions that spark competition and result in upgrade of services.

BCB will keep monitoring the evolution of cross-border payments and will assess the need for intensifying policies on this issue if the market keeps showing difficulties in offering better solutions.

#### 4.2 POLICIES FOR FINANCIAL MARKET INFRASTRUCTURES

As already highlighted in previous oversight reports, the full, timely and consistent implementation of the PFMI is considered essential to ensure the safety and soundness of the infrastructures and to support the resilience of the global financial system. Members of CPMI and IOSCO committed to adopt the principles and responsibilities contained in the PFMI. The publication of Policy Statement 25,097, of January 10, 2014, made public the adoption of the PFMI for the oversight activity in Brazil. From that date on, FMIs began to be assessed according to their compliance with the PFMI.

The jurisdictions represented in the FSB, CPMI and IOSCO have been monitored about the implementation of the PFMI. The monitoring process covers three levels: (a) **level one**, similar to a self-assessment, verifies if the jurisdictions completed the process of adapting its regulatory framework (here understood in a broad sense, as contemplating legislation, regulation or policy) in order to support the implementation of the principles for FMIs and of the responsibilities concerning regulatory authorities; (b) **level two** assesses, besides formal aspects, if the content of the regulatory framework is complete and compliant with the principles and responsibilities; and (c) **level three** assesses whether there is consistency between the normative framework and the practical results obtained from the implementation of the principles and responsibilities by FMIs and by regulatory authorities, respectively.

In June 2015, the second update of the **level one**<sup>21</sup> monitoring report was published, which depicted significant progress of the jurisdictions with respect to initial assessments, disclosed in August 2013 and May 2014 (first update). Brazil receives, from the first update of the report, grade four (maximum level), which means the measures that enable the implementation are already in force for all principles and responsibilities, with respect to all kinds of infrastructures described in the PFMI. The third report update is scheduled for 2016.

The assessment **level two** on the principles, given its greater complexity, is structured in a more detailed way and over a longer period. In February 2015, the first reports were published, containing the evaluation of CCP and TR of the United States<sup>22</sup>, Japan<sup>23</sup> and the European Union<sup>24</sup>. In December 2015, Australia's

21 Available at: <<http://www.bis.org/cpmi/publ/d129.pdf>>.

22 Available at: <<http://www.bis.org/cpmi/publ/d126.pdf>>

23 Available at: <<http://www.bis.org/cpmi/publ/d127.pdf>>.

24 Available at: <<http://www.bis.org/cpmi/publ/d128.pdf>>.

20 It is worth noting that BCB already offers an option for this service through the Local Currency Payment System (SML) for some jurisdictions (Argentina and Uruguay, for instance)

assessment for all types of FMIs was published<sup>25</sup>. The Brazilian jurisdiction has not yet been assessed. New level two assessment reports are scheduled for 2016.

The assessment level three on the principles started in July 2015 with a focus on those aimed at CCP risk management framework. Brazil is subject to this assessment through BM&FBovespa.

At last, the report on assessments levels two and three for the responsibilities, taken together, was published in November 2015<sup>26</sup>. Brazil obtained the highest grade in all responsibilities.

#### 4.2.1 COMMUNICATION STANDARDS

Communication standards tend to increase the efficiency of the payment system. Communication standardization also facilitates the entry of new participants and enables continuous processing among participating institutions and between them and their customers.

Based on principle 22 of the PFMI, BCB recommends SPB's FMIs to adopt or live with internationally-used procedures and communication standards.

In BCB's opinion, the adoption of procedures and standards by FMIs means the ability to receive and request information in particular standards, and to process and respond that information using those same procedures and standards in order that international protocols can transit in Brazilian FMIs in the same way as domestic ones.

A survey conducted by BCB on the needs, difficulties and perceptions of the market regarding the adoption of internationally accepted standards and procedures revealed considerable variation in standardization cultural level and knowledge among market participants. Based on this conclusion, BCB conducted along 2015 a series of actions to spread knowledge on the subject, among which: a meeting held in April, for presentation of the consolidated survey results; the International Standards of Communication seminar in May, which discussed Principle 22 and ISO 20022 standard; and participation in events promoted

by the industry in which certain aspects of communication standards were discussed, such as the Congress and Exhibition of Information Technology of Financial Institutions in June, and the Anbima Workshop on Communication Standards in August.

In 2016, in addition to continuing efforts to increase the standardization culture, BCB will establish a schedule and a methodology for the development of studies about domestic FMIs' business models adequacy to internationally accepted standards. In this respect, it is envisaged as a FMI forum activity, the creation of a thematic working group (with the industry participation), with the objective of assessing funds transfer models in Brazil (particularly TED model), having the ISO 20022 standard as benchmark.

#### 4.2.2 GENERAL BUSINESS RISK

Principle 15 of the PFMI recommends the FMIs to identify, monitor and manage the general business risk and hold liquid assets funded by equity sufficiently to cover potential business losses, so that they can keep providing their services if that risk materializes. Principle 15 also adds that those assets should be sufficient to ensure the infrastructures' recovery or orderly exit from the markets they serve.

In FMIs' assessments held in 2015, one of the topics covered was, for the second year in a row, the new requirements for general business risk management, contained in the PFMI. Gaps identified in the recovery and orderly exit plans are being addressed, with implementation schedules approved by BCB. BCB will continue to monitor the evolution of the mentioned plans.

Regarding the obligation of holding liquid assets, BCB assessed that the Brazilian FMIs hold adequate volume of liquid assets. However, it was identified that they need to specify, from an accounting point of view, which liquid assets and balance sheet accounts are allocated for business risk management purpose, in line with the PFMI definition of equity. BCB will act in 2016 in order to clarify these issues, especially to ensure the standardization of solutions adopted by the FMIs (assumptions, parameters, methodology, disclosures, etc.).

<sup>25</sup> Available at: <<http://www.bis.org/cpmi/publ/d128.pdf>>.

<sup>26</sup> Available at: <<http://www.bis.org/cpmi/publ/d139.pdf>>

#### 4.2.3 RECOVERY AND RESOLUTION

Recovery is a state in which an operating entity, in extreme situations, faces relevant risks, usually accompanied by considerable financial losses that threaten the continuity of its activities, but is still capable of recovering by itself its financial health and operational viability.

A recovery plan is an essential tool for managing stakeholders' expectations in the recovery process and for addressing the most sensitive decisions. BCB adopts in its oversight activities the guidelines of the PFMI and of the document "Recovery of Financial Market Infrastructures", both published by the BIS/CPMI and IOSCO. The recovery plans of the FMIs operating in the country, as mentioned in the previous section, are under development and will be object of assessment by BCB.

Resolution, in turn, implies the adoption of a special regime, to be enacted by the competent public authority, when the entity that operates a FMI is no longer capable of surviving or maintaining proper functioning on its own. In these circumstances, the special regime makes possible the continuity of essential activities to the financial system, with clear underlying public goals, such as financial stability and public confidence in financial and payment instruments (goals that are not directly considered in an ordinary bankruptcy procedure).

In 2015 BCB actively participated in international forums in discussions on resolution with other regulators. At the same time, FMIs and their representative bodies were called, in the scope of the FMI Forum, to contribute to the debate about the domestic legal framework of special procedures of resolution applicable to FMIs operating in Brazil. Market suggestions were relevant and will be considered by BCB.

#### 4.2.4 INCREASING THE RESILIENCE OF SPB

The importance of the FMIs drives special attention to the continuity of their activities. Despite robust risk management framework adopted by the entities that operate FMIs and constant oversight of BCB, the materialization of the risks to which they are subject can threaten, in extreme situations, the continuity of their activities.

In order to increase the soundness and resilience of SPB, especially regarding the management of operational risks, in line with principle 17 of the PFMI, BCB has been fostering the

coordination of FMIs' business continuity management in order to map out interdependencies, coordinate continuity plans<sup>27</sup> and carry out joint tests.

The identification of interdependencies to a FMI should consider the impact that the activities of other FMIs, of providers of critical services and of other relevant stakeholders have on its operations, in order to identify the main risks involved. Moreover, the FMIs should identify, monitor and manage the risks that their operations may pose to other FMIs.

This initiative will also contribute to the full compliance with principles 4 and 7 of the PFMI because it will allow the identification of interdependencies from the perspective of credit and liquidity risks management.

The coordination of plans and the accomplishment of joint business continuity tests aim to address in theoretical (plans) and practical (tests) ways the risks identified during the process of mapping the interdependencies. The tests should establish many contingency scenarios, which can progress to large-scale events, characterized by extreme, although plausible, conditions.

Some entities operating FMIs are coordinating initiatives that address the issues presented here based on 2015 BCB's on-site inspections conclusions. It is expected that these initiatives achieve the desired results, including also FMIs with a lower level of engagement.

In another initiative aimed at increasing the resilience of SPB, BCB introduced and regulated, by Ordinance 87,386, of December 4, 2015, a thematic working group within the scope of the FMI forum to discuss measures to mitigate risks in case of a severe technical unavailability of the STR. The Unavailability of the STR Working Group is coordinated by BCB and has the participation of FMIs and national associations representing STR participants.

The scope of this working group comprises the coordination of the STR participants in the implementation of technological adjustments and procedures to enable them to operate funds transfer orders in situations where a specific STR session extends beyond 23:59, as provided in Circular 3,682, of December 8, 2014. The working group can also discuss and propose additional measures that could minimize the impacts during a situation of grave unavailability of STR.

<sup>27</sup> In general terms, the continuity plan is part of the FMIs' continuity management. It details the FMIs' business continuity policy.

STR participants completed technological tests and are currently at the stage of implementing internal adjustments. STR has already been adjusted and is already able to operate after 23:59 in case of a severe operational crisis of the system or of a critical infrastructure such as the National Financial System Network (RSFN) for a longer period over a day.

Hereafter the working group will focus on debating additional measures that can mitigate impacts during a STR unavailability crisis, aiming to increase the resilience of SPB as a whole.

#### 4.2.5 FINANCIAL MARKET INFRASTRUCTURES INDUSTRY ORGANIZATION

In recent decades, the FMI industry has gone through demutualization, concentration and internationalization. These trends were bolstered by regulation that was introduced in the aftermath of the financial crisis of 2008, which promoted increasing demand for the use of FMIs as a means of ensuring better provision of information to regulators and more efficient financial risk management practices by FMIs participants.

The industry presents features like positive network externalities and economies of scale that naturally lead it to a high-concentrated market structure. In addition, demand from regulators for a global view on risks born by financial institutions

reinforced the trend of internationalization and concentration of FMIs.

On the other hand, such features hamper the entrance of new participants in this market and increase the possibility of market power abuse, including the setting of prices and fees. They may also discourage innovation and the development of new services.

This trade-off has been causing concerns in regulators from different countries and has been pointing to a growing importance of regulation and market oversight. In the last decade, many cases of mergers and acquisitions occurred in the FMI industry and just few cases were discouraged or prevented by antitrust authorities.

In Brazil, BCB has the legal authority to seek a sound and reliable SPB as well as its continuous improvement. In order to achieve this purpose, BCB requires FMIs to have effective and transparent organizational and administrative structures that encompass the interests of participants and the security of their systems.

Accordingly, BCB considers that there is no theoretical structure of the industry that is safer and more efficient a priori. Thus, BCB assess participants' decisions and is committed to strengthen the regulation and oversight over the FMIs whenever necessary in the pursuit of the soundness, regular operation, continuous improvement, and efficiency of SPB.

# ACRONYMS AND ABBREVIATIONS

## **ANATEL**

AGÊNCIA NACIONAL DE TELECOMUNICAÇÕES  
NATIONAL TELECOMMUNICATIONS AGENCY

## **ATM**

AUTOMATED TELLER MACHINE

## **BCB**

BANCO CENTRAL DO BRASIL  
CENTRAL BANK OF BRAZIL

## **BIS**

BANK FOR INTERNATIONAL SETTLEMENTS

## **BM&FBOVESPA**

SECURITIES, COMMODITIES AND FUTURES EXCHANGE - BRAZILIAN  
MERCANTILE & FUTURES EXCHANGE (BM&F) AND THE SÃO PAULO  
STOCK EXCHANGE (BOVESPA)

## **BM&FBOVESPA – AÇÕES**

BM&FBOVESPA – EQUITIES CLEARINGHOUSE

## **BM&FBOVESPA – ATIVOS**

BM&FBOVESPA – SECURITIES CLEARINGHOUSE

## **BM&FBOVESPA – CÂMBIO**

BM&FBOVESPA – FX (FOREIGN EXCHANGE) CLEARINGHOUSE

## **BP**

BOLETO DE PAGAMENTO  
BAR-CODED ELECTRONIC DOCUMENT THAT ALLOWS BILLS/DONATIONS  
TO BE PAID IN ANY BANK

## **CÂMARA BM&FBOVESPA**

BM&FBOVESPA CLEARINGHOUSE

## **CCP**

CENTRAL COUNTERPARTY

## **CDB**

TIME DEPOSITS

## **CDI**

INTERBANK DEPOSIT CERTIFICATE

## **CETIP**

OTC CLEARINGHOUSE

## **CIP**

INTERBANK PAYMENTS CLEARINGHOUSE

## **C3**

CREDIT TRANSFER SYSTEM

## **COE**

STRUCTURED TRANSACTIONS CERTIFICATES

## **COMPE**

CHECKS CLEARINGHOUSE

## **CPMI/BIS**

COMMITTEE ON PAYMENTS AND MARKET INFRASTRUCTURES/ BANK  
FOR INTERNATIONAL SETTLEMENTS

## **CSD**

CENTRAL SECURITIES DEPOSITORY

## **CVM**

BRAZILIAN SECURITIES AND EXCHANGE COMMISSION

## **DEBAN**

DEPARTMENT OF BANKING OPERATIONS AND PAYMENTS SYSTEM

## **DDA**

AUTHORIZED DIRECT DEBIT

## **DOC**

CREDIT TRANSFER DOCUMENT

## **DVP**

DELIVERY VERSUS PAYMENT

## **ERPB**

EURO RETAIL PAYMENTS BOARD

**FMI**

FINANCIAL MARKET INFRASTRUCTURE

**FSB**

FINANCIAL STABILITY BOARD

**IOSCO**

INTERNATIONAL ORGANIZATION OF SECURITIES COMMISSIONS

**LCA**

AGRIBUSINESS CREDIT BILLS

**LCI**

REAL ESTATE CREDIT BILLS

**PFMI**

PRINCIPLES FOR FINANCIAL MARKET INFRASTRUCTURES

**PS**

PAYMENT SYSTEM

**PSR**

NETWORK SERVICE PROVIDER

**PVP**

PAYMENT VERSUS PAYMENT

**RSFN**

NATIONAL FINANCIAL SYSTEM NETWORK

**SELIC**

SPECIAL SYSTEM FOR SETTLEMENT AND CUSTODY

**SILOC**

DEFERRED SETTLEMENT SYSTEM FOR INTERBANK CREDIT ORDERS

**SITRAF**

FUNDS TRANSFER SYSTEM

**SPB**

THE BRAZILIAN PAYMENTS SYSTEM

**SSS**

SECURITIES SETTLEMENT SYSTEM

**STR**

RESERVES TRANSFER SYSTEM

**TC/IOSCO**

TECHNICAL COMMITTEE OF THE INTERNATIONAL ORGANIZATION OF SECURITIES COMMISSIONS

**TED**

ELECTRONIC FUNDS TRANSFER

**TR**

TRADE REPOSITORY