

Peer Review of Brazil

Review Report

19 April 2017

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Foreword

Financial Stability Board (FSB) member jurisdictions have committed, under the FSB Charter and in the *FSB Framework for Strengthening Adherence to International Standards*,¹ to undergo periodic peer reviews. To fulfil this responsibility, the FSB has established a regular programme of country and thematic peer reviews of its member jurisdictions.

Country reviews focus on the implementation and effectiveness of regulatory, supervisory or other financial sector standards and policies agreed within the FSB, as well as their effectiveness in achieving desired outcomes. They examine the steps taken or planned by national authorities to address International Monetary Fund (IMF)–World Bank Financial Sector Assessment Program (FSAP) and Report on the Observance of Standards and Codes (ROSC) recommendations on financial regulation and supervision as well as on institutional and market infrastructure that are deemed most important and relevant to the FSB’s core mandate of promoting financial stability. Country reviews can also focus on regulatory, supervisory or other financial sector policy issues not covered in the FSAP that are timely and topical for the jurisdiction itself and for the broader FSB membership. Unlike the FSAP, a peer review does not comprehensively analyse a jurisdiction's financial system structure or policies, or its compliance with international financial standards.

FSB jurisdictions have committed to undergo an FSAP assessment every 5 years; peer reviews taking place 2-3 years following an FSAP will complement that cycle. As part of this commitment, Brazil volunteered to undergo a peer review in 2016.

This report describes the findings and conclusions of the Brazil peer review, including the key elements of the discussion in the FSB’s Standing Committee on Standards Implementation (SCSI) in March 2017. It is the nineteenth country peer review conducted by the FSB, and it is based on the objectives and guidelines for the conduct of peer reviews set forth in the March 2015 version of the *Handbook for FSB Peer Reviews*.²

The analysis and conclusions of this peer review are based on the responses to a questionnaire by financial authorities in Brazil and reflect information on the progress of relevant reforms as of December 2016. The review has also benefited from dialogue with the Brazilian authorities as well as discussion in the FSB SCSI.

The draft report for discussion was prepared by a team chaired by Anne Le Lorier (Deputy Governor, Banque de France) and comprising Daniel Lawlor (Central Bank of Ireland), Paul Eastment (Australian Securities and Investment Commission), Kevin Fine (Ontario Securities Commission) and Jeong Jae-Ryong (Financial Supervisory Service, Korea). Dimple Bhandia, Susan Nash, Costas Stephanou and Lawrence White (FSB Secretariat) provided support to the team and contributed to the preparation of the peer review report.

¹ See http://www.fsb.org/2010/01/r_100109a/.

² See <http://www.fsb.org/2015/03/handbook-for-fsb-peer-reviews/>.

Abbreviations

ANBIMA	Brazilian Financial and Capital Markets Association
ANVISA	National Health Surveillance Agency
BCBS	Basel Committee for Banking Supervision
BCB	Brazilian Central Bank (Banco Central do Brasil)
BNDES	Brazilian development bank
CAR	Capital adequacy ratio
CCP	Central counterparty
CD	Certificate of Deposit
CET1	Common equity tier 1 capital adequacy ratio
CETIP	Organized OTC market for securities and derivatives
CIP	Interbank Payments Clearinghouse (Câmara Interbancária de Pagamentos)
CIP-C3	Credit Assignment Central (Central de Cessão de Crédito - C3)
CIR	Committee on Risk Identification
CMN	National Monetary Council
CNPC	National Council for Complementary Social Security
CNPJ	National Registry of Legal Entities
CNSP	National Council of Private Insurance (Conselho Nacional de Seguros Privados)
COMEF	Financial Stability Committee
COMOC	Technical Commission on Currency and Credit
COPOM	Monetary Policy Committee
COREMEC	Committee of Regulation and Supervision of Financial, Securities, Insurance and Complementary Pension Markets
COSIF	Accounting Plan for Institutions of the National Financial System
CoVaR	Conditional value-at-risk
CPF	Taxpayer Registration Number
CPMI	Committee for Payments and Market Infrastructure
CRI	Certificates of Real Estate Receivables
CSD	Central securities depository
CVM	Securities and Exchange Commission of Brazil (Comissão de Valores Mobiliários)
CVMWEB	CVM Web
DESIG	BCB's Financial System Monitoring Department
DI	Interbank deposits
D-SIB	Domestic systemically important bank
ETF	Exchange-traded fund
FGC	Credit Guarantee Fund
FGCoop	Cooperative Guarantee Fund
FSB	Financial Stability Board
FI	Financial institution
FIDC-IE	Asset Backed Securities Fund – Infrastructure
FMI	Financial Market Infrastructure
FSAP	Financial Sector Assessment Program
FX	Foreign exchange
GDP	Gross Domestic Product
IAIS	International Association of Insurance Supervisors
IBRACOR	Brazilian Institute of Self-Regulation of Insurance Brokerage Market, Reinsurance, Capitalization and Open Pension Funds
ILE	Structural Liquidity Ratio
INSS	National Social Security Institute
IMF	International Monetary Fund
IOSCO	International Organization of Securities Commissions
IRS	Internal Revenue Service (Receita Federal do Brasil)

IVG-R	Financed Residential Real Estate Collateral Value Index
KAs	Key Attributes of Effective Resolution Regimes for Financial Institutions
LA	Liquid Assets
LCR	Liquidity Coverage Ratio
LEI	Legal Entity Identifier
LEI-ROC	LEI Regulatory Oversight Committee
LR	Liquidity Ratio
LTV	Loan to Value
MOF	Ministry of Finance
MOJ	Ministry of Justice
MoU	Memorandum of understanding
MPDG	Ministry of Planning, Development and Management
MSP	Staff Manual of the Brazilian Central Bank
NAV	Net Asset Value
NFSR	Net Stable Funding Ratio
NPL	Non-performing loan
OFIs	Other financial intermediaries
OTC	Over-the-counter
PCO	Predicted Cash Outflow
PFMI	Principles for Financial Market Infrastructure
PRC	Credit Risk Profile
PREVIC	National Superintendence of Complementary Pensions (Superintendência Nacional de Previdência Complementar)
RAET	Temporary Special Administration Regime
RAIS	Annual Social Information Relation
RBS	Risk Based Supervision
RI	Intrinsic Risk
SA-CCR	Standardised Approach for measuring Counterparty Credit Risk
SCR	Credit Information System
SFN	National Financial System
SIFI	Systemically important financial institution
SISBACEN	Brazilian Central Bank System
SPB	Brazilian Payment System
SME	Small and medium-sized enterprise
SRO	Self-regulatory organisation
SMM	Liquidity and Market Risk Monitoring System
STR	Reserves Transfer System (Sistema de Transferência de Reservas)
SUMEF	Subcommittee for Monitoring the Stability of the National Financial System
SUSEP	Superintendence of Private Insurance (Superintendência de Seguros Privados)
TEBU	Bottom-up Stress Tests
TEMTD	Macroeconomic top-down stress test
TR	Trade repository
VaR	Value at Risk
VCP	Valued by Participant derivatives
UPI	Unique Product Identifier
UTI	Unique Transaction Identifier

Executive summary

Background and objectives

The main purpose of this peer review is to examine two topics that are relevant for financial stability in Brazil: trade reporting and its use in systemic risk monitoring, and the regulation and supervision of investment funds. The peer review focuses on the steps taken by the Brazilian authorities to implement reforms in these areas, including by following up on relevant FSB initiatives and recommendations.

Main findings

Significant progress has been made in recent years on the topics covered by the peer review. Brazil stands out among its FSB peers for the pioneering work it has carried out on trade reporting and its use in systemic risk monitoring. The regulatory and supervisory framework for investment funds has been strengthened, while regular monitoring of liquidity risk in the sector is underway. However, there is additional work to be done in both areas. On trade reporting, this involves intensified monitoring of any increased operational risks within private financial market infrastructure; implementing international data standards; and establishing arrangements to facilitate authorities' access to trade repository-held data on a cross-border basis. On investment funds, this involves defining and monitoring leverage on an ongoing basis; reviewing the range and functioning of liquidity risk management tools; and reviewing existing and contemplated bilateral agreements with an industry body so that regulatory authority for investment funds is exerted by CVM or by a self-regulatory organisation that is subject to oversight by CVM and free from conflicts of interest.

Trade reporting and systemic risk monitoring

The Brazilian authorities have put in place a broad-ranging system of transaction reporting to trade repositories (TRs) that has been augmented and refined over the last two decades. There are several factors that contribute to its effectiveness:

- Comprehensive requirements for reporting to TRs, covering over-the-counter (OTC) and exchange-traded derivatives, loans, foreign exchange, equity and fixed income transactions. Over the years, the scope of mandatory reporting has expanded to multiple transaction types, and deepened to include more detailed data.
- The requirement that OTC derivative transactions must be reported to a TR to ensure the validity of the contract, which further enhances completeness of the data collected.
- Identification of the final beneficiary of each counterparty to a transaction is mandatory.
- Direct access by the Central Bank of Brazil (BCB) and the Securities and Exchange Commission (CVM) to transaction-level datasets from multiple asset classes, which enable them to use the data in accordance with their respective mandates.
- Requirements placed on TRs, which are supported by a system assigning senior executive responsibility for data quality and strong validation checks, help ensure data completeness and quality. This allows the authorities to focus their efforts primarily on data uses rather than data cleansing and mapping.
- Challenges related to data aggregation have been overcome using Brazil's national tax file number, a unique identifier that operates as a linchpin across domestic datasets.

- Good cooperation between authorities, both through bilateral arrangements and through inter-agency coordination bodies such as the Committee of Regulation and Supervision of Financial, Securities, Insurance and Complementary Pension Markets (COREMEC).
- Significant resources deployed by the BCB to the analysis of TR data for identifying, measuring and monitoring systemic risk.

The breadth and depth of available TR data enable the BCB to undertake extensive systemic risk monitoring using a broad range of analytical tools, such as automated early warning indicators, contagion analysis and top-down macroeconomic stress tests. The authorities also use TR data for supervision and oversight of market participants, trading venues and financial market infrastructure; monitoring of financial markets; calibration and impact studies of regulatory policies; and supervision of conduct issues, such as market abuse and suitability.

Notwithstanding these achievements, there are opportunities for further improvement to the current framework.

- **Operational risks:** The Brazilian TR industry is comprised of several public and private TRs;³ the two private TRs for all OTC derivatives as well as some foreign exchange (FX) and fixed income transactions are Cetip and BM&F Bovespa. In addition to trade reporting services, these TRs function as a central securities depository, trading platform, and clearing and settlement system; BM&F Bovespa also operates a central counterparty (CCP). The two companies collectively represent a large part of the financial market infrastructure in Brazil, whose concentration will be further magnified if their proposed merger (announced in April 2016) is approved and there is an eventual integration of their infrastructures. The authorities note that the BCB and CVM, in accordance with their respective regulatory mandates, monitor operational risks stemming from the concentration of post-trade activities through regular on-site inspections; that there is a comprehensive set of requirements and responsibilities assigned to relevant administrators; and that changes in the functioning of their infrastructures will require regulatory approval.

The concentration of systemically important services embedded within a single entity or organisation can create strong institutional interdependencies (stemming from common participants) and operational interdependencies (through linked processes) that increase the potential for contagion and systemic risks. Difficulties experienced in one part of the business could have negative consequences on the other parts. For example, the failure of the CCP could hamper the adequate processing of settlement in the system and the timely and adequate recording of the transactions in the TR, which is crucial in times of market stress. Concentration of operations in a single entity with little substitutability is also a factor of risk. For example, a cyber-attack on a TR would limit the ability to retrieve data for risk monitoring, or to redirect the data to another TR. As a result, recovery and continuity plans should be designed with these contagion risks in mind so as to allow the other parts of the business to function properly despite disruptions occurring in one part.

- **Data harmonisation:** The Brazilian authorities have their own set of data standards and taxonomy for data elements that are used by domestic TRs and that may not align fully

³ The TRs in Brazil are operated by the BCB or, in the case of private sector TRs, are authorised and overseen by the BCB and CVM.

with international standards.⁴ For example, the national tax file number is used to identify counterparties in TR data and, while this method is suitable for internal data aggregation, it limits the ability to aggregate data across jurisdictions. Additionally, there are no identifiers for foreign counterparties transacting with a Brazilian entity (such as a subsidiary) offshore, which presents further data aggregation issues for both Brazil and the foreign jurisdiction in which the transaction takes place.

By adopting an international counterparty identification standard such as the LEI, as well as by adopting the UTI and UPI when they have been fully developed, Brazilian and foreign authorities could more easily integrate and aggregate Brazilian TR data with foreign TR data as well as improve data completeness and quality. The Brazilian authorities have already taken some steps in this area although, given the effective use of the unique fiscal identifier, the BCB considers the LEI as an adjunct identifier for companies operating internationally (a number of Brazilian firms already have an LEI number). Even in the case that the authorities choose not to adopt internationally harmonised data identifiers in specific areas, there is nevertheless a need at least to establish systems that would allow reliable data mapping so as to permit aggregation of TR data by Brazilian and foreign authorities to take place.

- **Access to TR data:** The 2015 FSB Thematic Review on OTC Derivatives Trade Reporting identified Brazil as having significant/challenging conditions that foreign authorities would have to overcome if they were to have direct access to domestic TR data. Access for foreign authorities to a domestic TR without going through a national authority requires the express consent of the participant whose data would be shared. This consent could allow for data to be shared on an ongoing basis, but the determination would be made on a participant-by-participant basis. While Brazilian authorities have taken steps to identify jurisdictions in which future bilateral agreements could be made, they should work towards eliminating practical barriers that prohibit direct foreign access to domestic TR data.

The 2016 follow-up FSB report also states that foreign authorities have indirect access to data held in domestic TRs through bilateral or multilateral Memorandums of Understanding (MoUs) with national authorities, or by formally submitting their requests to those authorities (BCB or CVM). The BCB has several bilateral MoUs with foreign supervisory authorities, but they do not specifically address access to TR data on the trading activities of those entities or the exchange of other relevant data. Access to foreign TR data (directly or indirectly) would also be beneficial for the authorities, since it would enable them to monitor derivatives transactions by offshore subsidiaries and affiliates of non-FIs,⁵ as well as the positions and activity of non-Brazilian entities in products related to the Brazilian economy (e.g. Brazilian Real swaps, non-deliverable forwards, Bovespa Index swap).

⁴ These include the unique transaction identifier (UTI), unique product identifier (UPI) and other critical data elements (such as price, maturity, volume etc.) that are being developed by a CPMI-IOSCO group in response to an FSB request in 2014 for global guidance on harmonisation of data elements that are reported to TRs and are important to aggregation by authorities. Another key international standard in OTC derivatives datasets is the Legal Entity Identifier (LEI), a unique code for the identification of entities that is designed to uniquely and unambiguously identify participants in financial transactions.

⁵ Only Brazilian financial institutions' (FIs) offshore subsidiaries and affiliates derivatives transactions are required to be reported to a Brazilian TR. Derivatives transactions negotiated by non-FIs abroad that do not involve money transfers between Brazil and another country, are not required to be reported to Brazilian TRs.

To access foreign TR data, the authorities will need to more closely align domestic reporting with international data standards. They also need to establish – for reciprocity purposes – a legal framework to allow foreign authorities to access domestic TR data that concerns them (e.g. relating to trades by firms established in their jurisdictions or with subsidiaries that have a connection to their markets), preferably by direct access to TR data.

Regulation and supervision of investment funds

The investment funds sector represents in excess of 50% of the Gross Domestic Product in Brazil, and is sizable when compared to several other FSB jurisdictions. As at 30 April 2016, there were 8,812 Brazilian investment funds with a net asset value (NAV) of approximately R\$3 trillion. The NAV of the investment funds sector has grown steadily in recent years. A large percentage of NAV is held in fixed income funds (65%), with the remainder taken up by (primarily) multimarket investment funds and by equity funds. The predominant investment fund type, representing almost 90% of the industry, is governed by CVM's Instruction 555/14 ('555 Funds'). These investment funds are open to all categories of investors, although individual 555 funds may impose restrictions on who may invest in the investment fund.

The Brazilian authorities have continued to strengthen the regulatory and supervisory framework for investment funds in recent years. Instruction 555/14 includes comprehensive provisions regarding portfolio composition, liquidity management, custody, the use of leverage and disclosure obligations. Extensive reporting of investment fund information has put CVM in a strong position to monitor and assess liquidity risk on a daily and monthly basis. CVM has developed its own liquidity indexes based on information provided to it over the past 10 years and uses those indexes to benchmark liquidity in investment funds. In addition, fiduciary administrators of 555 Funds are required to subject their investment funds to regular liquidity stress tests. Work is ongoing to examine the need for leverage definitions and limits in this sector. The BCB has also begun to monitor risks arising from interconnectedness between investment funds and other sectors, such as step-in risk.

As is the case in other countries, however, further steps can be taken to strengthen the regulation and supervision of investment funds in order to ensure the resilience of this sector under a broad range of economic conditions.

- ***Leverage:*** At present, there is no definition of leverage in Brazilian investment fund regulation. While investment funds are prohibited from borrowing and subject to other relevant restrictions, such as requirements to establish and disclose maximum permitted leverage and restrictions on the use of derivatives, there is no express numerical leverage limit for those funds. Leverage is controlled indirectly through conservative margin requirements imposed by BM&F Bovespa and limits on portfolio exposure to issuers and financial instruments. The absence of an express numerical leverage limit does not appear to the authorities to have been a source of concern to date. Due principally to the high interest rate and the consequent high levels of investment in fixed income instruments (particularly government bonds), investment funds do not need to engage in a search for yield in high-risk products or take on leverage to improve returns. However, as noted in the FSAP, this situation may change in the future.

CVM has begun to analyse the use of leverage by investment funds and the ways in which leverage is defined and calculated in other jurisdictions. It intends to issue a public consultation on rules about a definition of leverage and leverage limits for investment

funds. Given the possibility that investment funds may become more leveraged in the future, it is appropriate that CVM is undertaking this work now. Building on the FSB policy recommendations and follow-up work by IOSCO on leverage within investment funds, CVM should complete this work and develop regulatory definitions and measures for leverage of investment funds. It should also consider introducing additional limitations on leverage (e.g. numerical limits) for particular types of funds as appropriate.

At present, CVM uses information from BM&F Bovespa and CETIP to calculate exposures. Given the role that leverage can play in creating or amplifying risks to the financial system, CVM should collect information on leverage directly from fiduciary administrators of investment funds – who are ultimately responsible for managing fund leverage – and implement arrangements for the monitoring of leverage in a consistent manner across the investment funds sector. Information provided by BM&F Bovespa and CETIP would be useful in verifying information received from fiduciary administrators.

- **Liquidity risk management:** Many investment funds invest directly in Brazilian government bonds and have a substantial portion of their assets in cash, which they invest via overnight reverse repos at a rate of return that is typically close to that achieved by directly holding government bonds. Although liquidity risk management does not appear to be especially problematic at present, the authorities could usefully direct their attention to this issue before the high interest rate environment changes. The liquidity of 555 Funds has been an area that has already received focus from CVM, with a number of measures being put in place to monitor potential liquidity risks.

Current arrangements in Brazil limit the ability of fiduciary administrators to deploy post-event liquidity risk management tools without first receiving investor approval. The only such tool that can be deployed immediately and without investor consent is the temporary suspension of redemptions in exceptional circumstances. All other tools can be deployed only after a meeting of investors has been convened and their consent obtained. Lack of immediate access to such tools may have negative consequences, e.g. more limited ability to engage in an orderly disposition of assets. Consideration should be given to whether the decision about which tools to use should be placed solely in the hands of investors, since they may lack expertise in using the tools and (given their investments in the fund) may have conflicts of interest in determining which tools to employ. International work in this area has found that many jurisdictions permit fund managers to utilise a range of post-event liquidity management tools without the need for investor or supervisory approval.

CVM is of the view that requiring investors' approval to deploy measures to deal with liquidity shortages enhances transparency and constitutes an important accountability mechanism for fiduciary administrators and asset managers. In addition, CVM believes that investor meetings provide a useful way to align interests and decide in a consensual way on the steps necessary to restore adequate liquidity levels, and that fiduciary administrators and asset managers can remedy investors' potential lack of expertise through explanation of available options. CVM also notes that the requirement for an investor meeting has not proved, to date, to be an obstacle to implementing solutions to liquidity shortages.

Notwithstanding these points, the authorities should weigh the potential costs and benefits of the investor meeting requirement in a broad range of scenarios and consider whether this requirement should be modified or eliminated. Allowing fiduciary administrators to deploy post-event liquidity management tools at short notice and without investor consent would

not preclude a requirement for a subsequent investor meeting to foster transparency and accountability and develop a consensus with respect to additional steps to be taken.

In addition, some liquidity risk management tools found in other jurisdictions are not currently available in Brazil. These include swing pricing, anti-dilution levies, short term borrowings and redemption gates. Making these tools available in Brazil has the potential to provide fiduciary administrators with greater flexibility to manage liquidity risk in the manner most appropriate to the type of investment fund and investors in question.

Building on the FSB policy recommendations and follow-up work by IOSCO on liquidity mismatch of open-ended investment funds, CVM should consider permitting post-event liquidity management tools to be deployed by fiduciary administrators at short notice and without investor consent, and assessing whether to make available an increased range of both pre-emptive and post-event tools for liquidity management purposes. There may also be merit to consider whether certain post-event tools should require notification to CVM.

- **Role of industry body:** The Brazilian Financial and Capital Markets Association (ANBIMA) is a non-profit legal entity organised as a civil association that represents close to 90% of financial market participants in Brazil. ANBIMA has developed self-regulatory arrangements for investment funds managed by its members. Relying on their (voluntary) agreement, ANBIMA has the ability to discipline members for violations of its own codes of conduct, e.g. through assessing fines. ANBIMA has also established an investment funds classification system, and it publishes aggregate industry information based on reporting by its members. However, ANBIMA is not a statutory regulator: it is neither overseen by CVM nor does CVM have any jurisdiction over it. While ANBIMA issues its own industry guidance (codes), that guidance is not reviewed or endorsed by CVM.

ANBIMA has entered into four bilateral agreements with CVM.⁶ Discussions are underway between ANBIMA and CVM to have ANBIMA collect investment fund data on behalf of CVM and pre-analyse registration requests by fund service providers. CVM notes that it would retain the authority to approve or deny these requests. There may be efficiencies to be gained for CVM from expanding ANBIMA's role, in terms of costs from outsourcing the technology to support reporting systems and in terms of speeding up the service provider authorisation processes. However, there are risks associated with involving a non-statutory private organisation (particularly one acting as a trade association) in a regulatory process. While these risks can to some extent be addressed through contractual arrangements, CVM should review and reconsider its existing and contemplated bilateral agreements with ANBIMA given CVM's lack of oversight authority with respect to ANBIMA.

The need for appropriate oversight of private bodies that act in a self-regulatory organisation (SRO) capacity is highlighted in international standards, and is an issue flagged in the FSAP's assessment of the IOSCO *Principles and Objective of Securities Regulation* in Brazil. CVM notes that the contemplated bilateral agreement with ANBIMA regarding data collection (which CVM agrees is part of the regulatory process) for investment funds will follow these guidelines: (1) CVM will retain broad supervisory powers regarding the scope of the agreement; (2) provisions will be included to eliminate any discontinuity in case the

⁶ These agreements provide for the development of an information technology system for public offerings; a simplified procedure for registering public offerings; mutual utilisation of settlement agreements and applied penalties, as well as information sharing; and the development and publication of a hedge fund index.

agreement ceases, whatever the reason; and (3) governance mechanisms and accountability measures will allow CVM to identify and mitigate or eliminate any conflict of interest situation. While these are helpful contractual provisions, they may not fully address issues raised by the fact that ANBIMA is an industry representative body rather than an SRO subject to CVM's oversight. Given the expansion of ANBIMA's role contemplated by CVM, it is important that CVM has the authority and ability to oversee ANBIMA in the way envisaged in IOSCO's report and consistent with the FSAP assessment.

Recommendations

In response to the aforementioned findings and issues, the peer review has identified the following recommendations to the Brazilian authorities:

Trade reporting and systemic risk monitoring

1. The BCB and CVM should intensify monitoring of the operational risks from any increased concentration of systemically important functions within private financial market infrastructure, including through recovery and business continuity planning.
2. The authorities should prepare for the adoption of, or interface with, international data harmonisation standards on OTC derivatives (such as the LEI, UPI and UTI) to enable their use by TRs in Brazil and enable meaningful aggregation on a cross-border basis.
3. The Brazilian authorities should establish a legal framework that allows relevant foreign authorities to access domestic TR data (and for Brazilian authorities to seek access to foreign TR data) according to their respective regulatory mandates, preferably on a direct basis in accordance with CPMI-IOSCO recommendations. They should also take concrete steps to coordinate with foreign regulators in establishing cooperative arrangements that facilitate authorities' access to TR-held data (whether through direct or indirect access).

Regulation and supervision of investment funds

4. CVM should develop regulatory definitions and measures for leverage of investment funds, monitor leverage on an ongoing basis through information provided by fiduciary administrators, and consider introducing additional limitations on investment fund leverage as appropriate.
5. CVM should: (a) consider allowing post-event liquidity risk management tools to be deployed at short notice without the approval of investors; and (b) assess the adequacy of existing liquidity risk management tools and consider whether to broaden the range of such tools available to investment funds.
6. CVM should review and reconsider its existing and contemplated bilateral agreements with ANBIMA, so that regulatory authority for investment funds is exerted by CVM or by a self-regulatory organisation that is subject to oversight by CVM and free from conflicts of interest.

1. Introduction

Brazil underwent an assessment update under the Financial Sector Assessment Program (FSAP) in 2012. The FSAP Update included assessments of the Basel Committee for Banking Supervision (BCBS) *Basel Core Principles for Effective Banking Supervision*, International Association of Insurance Supervisors (IAIS) *Insurance Core Principles* and International Organization of Securities Commissions (IOSCO) *Principles and Objective of Securities Regulation*.^{7, 8}

The FSAP concluded that although the financial sector is exposed to the effects of volatility in international markets for commodities and capital (like the rest of the Brazilian economy), the flexible exchange rate, strong macro- and micro-prudential policy frameworks, sound balance sheets, high capital and profitability, and ample liquid assets, provide significant risk mitigants. Systemic risks had declined since the global financial crisis and stress tests suggested the financial sector was resilient, but rapid credit growth, particularly for households, was creating pockets of vulnerability. Considerable progress had been made toward implementing the initial FSAP's recommendations to strengthen supervision and regulation, and compliance with international standards was high, especially in banking supervision. The FSAP recommended further strengthening of insurance and pension supervision to ensure the operational autonomy and legal protection of supervisors. It noted that financial safety nets could be improved by strengthening the procedures for use of the deposit insurance fund, enhancing the central bank's emergency liquidity assistance, and removing impediments to bank resolution tools. It further noted that capital market development remains constrained by the low duration and high interest rate environment, and suggested financial sector reforms to spur further progress.

The IMF's 2016 Article IV consultation⁹ found that the Brazilian economy was still in its deepest recession in decades. Growth was projected to resume gradually, but to remain weak for a prolonged period. The report noted that Brazil's macroeconomic prospects hinge on the new government's ability to implement successfully the structural fiscal reforms underpinning its medium term consolidation strategy. It also noted that macroprudential policies have been used appropriately but that, while the health of the banking sector remains largely sound, its resilience should be bolstered through enhanced monitoring and improved financial safety nets.

This peer review report has two main sections, corresponding to the two topics being reviewed. Section 2 focuses on trade reporting and systemic risk monitoring, while Section 3 covers the regulation and supervision of investment funds. In addition, Annex 1 provides background information on the regulatory and supervisory framework in Brazil; Annex 2 describes the structure of the financial system; Annex 3 presents the data fields reported for different asset

⁷ See "Brazil: Financial System Stability Assessment" (July 2012, IMF Country Report No. 12/206, <http://www.imf.org/external/pubs/ft/scr/2012/cr12206.pdf>). The sectoral standards assessments are available on the IMF and World Bank websites (<http://www.imf.org/external/np/fsap/fsap.aspx> and <http://documents.worldbank.org/curated/en/782881468226153252/pdf/807280ESW0Braz00Box379814B00Public0.pdf>).

⁸ In December 2013, the BCBS published a report on the consistency of the Basel III risk-based capital standards in Brazil with the Basel framework. See "Regulatory Capital Assessment Programme: Assessment of Basel III regulations – Brazil" (http://www.bis.org/bcbs/implementation/12_br.pdf).

⁹ See "Brazil: 2016 Article IV Consultation – Staff Report (Country Report No. 16/348, November 2016, available at <http://www.imf.org/external/pubs/ft/scr/2016/cr16348.pdf>).

classes to trade repositories (TRs); Annex 4 includes examples of the use of TR data by authorities; and Annex 5 summarises the “car wash” operation as an example of contagion analysis. Annex 6 describes the follow-up actions reported by the authorities to key FSAP recommendations; these actions have not been analysed as part of the FSB peer review and are presented solely for purposes of transparency and completeness.

2. Trade reporting and systemic risk monitoring

Background

The G20 Leaders agreed in September 2009 that, as part of their overall commitments to reform over-the-counter (OTC) derivatives markets, OTC derivative contracts should be reported to TRs. This recommendation was aimed at ensuring the reporting, collection, and maintenance of comprehensive data for OTC derivatives “to improve transparency in the derivatives markets, mitigate systemic risk, and protect against market abuse.”

The Brazilian authorities have gradually put in place a broad-ranging system of transaction reporting to TRs that predates the financial crisis and goes beyond OTC derivatives. Over the years, the scope of mandatory reporting and of Brazilian TR-held data has expanded to cover multiple transaction types, and deepened to include more detailed data. The FSB’s 2015 Thematic Review on OTC Derivative Trade Reporting noted, among other things, that Brazil has a comprehensive reporting regime of OTC derivatives, and that domestic authorities have access to TR data.¹⁰ The FSB’s eleventh progress report on OTC derivatives markets reforms noted that implementation of trade reporting requirements in Brazil was in force for over 90% of OTC derivative transactions across five asset classes as at 30 June 2016.¹¹

Comprehensive trade reporting can act as an important source of information for effective systemic risk monitoring. This section examines the trade reporting framework in Brazil and analyses the ways in which TR data – on OTC derivatives as well as on other types of financial transactions – is being used for systemic risk monitoring purposes. In particular, the section examines the form of TR data reporting; aggregation of TR data and its access by authorities; and the use of data for systemic risk monitoring.

Trade reporting

Trade repositories (TRs) and their oversight: The TRs in Brazil are either operated by the Central Bank of Brazil (BCB) or, in the case of private sector TRs, are authorised and overseen by the BCB and the Securities and Exchange Commission (CVM) according to Laws 10,214/2001 and 12,810/2013. The BCB regulates the performance of TRs in the Brazilian

¹⁰ See “Thematic Review on OTC Derivatives Trade Reporting: Peer Review Report” by the FSB (November 2015, available at: <http://www.fsb.org/wp-content/uploads/Peer-review-on-trade-reporting.pdf>).

¹¹ The derivatives asset classes are commodity, credit, equity, foreign exchange, and interest rate. See <http://www.fsb.org/2016/08/otc-derivatives-market-reforms-eleventh-progress-report-on-implementation/>. The aggregate notional amount outstanding of the derivatives market was equal to US\$2.2 trillion as of September 2016, of which around US\$1.6 trillion was exchange-traded derivatives. Cleared OTC derivatives at around US\$100 billion represented around 15% of total OTC derivatives. See Annex 2 for details.

Payments System and the CVM regulates the performance of TRs in the securities market, under the direction of the National Monetary Council (CMN).¹²

All authorised TRs are located within Brazil (see Table 1 that sets out basic details of each TR). For OTC derivatives, the two main systems are privately operated (Cetip and BM&F Bovespa). Cetip has the predominant market share of OTC derivatives reporting, while BM&F Bovespa is limited largely to cleared derivatives, both exchange-traded and (to a limited extent) OTC. In addition, the Brazilian authorities have access to market data about the listed securities and derivatives markets through the securities and futures exchanges operator, BM&F Bovespa.

Law 12,810/2013 defines the activities that TRs can perform and formally gives the BCB and CVM the power to issue additional regulation for TRs. The oversight responsibilities for private sector TRs related to the review of internal audits, policies and rules, risk management, corporate governance, business continuity and the performance of on-site examinations are shared between the BCB and CVM, and are allocated according to a memorandum of understanding (MoU). A committee comprising 3-5 representatives of the BCB and 3-5 representatives of the CVM meet to discuss the strategic and technical governance issues. The committee has two chairs, one appointed by each authority.

The MoU also outlines how the two organisations are to cooperate when new regulations are proposed. The BCB must consult with the CVM if proposed regulations affect securities markets or their participants. Likewise, the CVM must consult with the BCB if proposed regulations affect derivatives markets, stock exchanges, the commodities and futures exchange, the OTC markets, clearing houses and securities settlement entities, entities engaged in securities registration, financial investment funds, investment of funds in shares of investment funds and foreign investment funds, exchange and credit policies or the performance of financial institutions and other institutions authorised to operate by the BCB, as well as the flow of resources between residents and non-residents.

To comply with the April 2012 Committee for Payments and Market Infrastructure (CPMI)-IOSCO *Principles for Financial Market Infrastructures* (PFMI),¹³ the CVM issued ICVM 541/2013 and ICVM 544/2013, while the BCB issued Policy Statement 25,097/2014. CPMI-IOSCO assessed the Brazilian authorities on their implementation of the PFMI, and found that the regulatory framework is complete and consistent with the Principles and Responsibilities.¹⁴

Trade reporting requirements: Unlike many other countries, reporting data to a TR is mandatory in Brazil for most transaction types and for nearly all asset classes. In addition to financial transactions that are traded on and registered in authorised exchanges and electronic trading platforms, OTC derivative, spot foreign exchange, fixed income, and credit operation transactions must also be reported to TRs. The requirements by asset class are described in Box 1. The rules governing the reporting of OTC derivatives have not changed since the FSAP.

¹² See the description of the Brazilian regulatory framework in “Assessment and review of application of Responsibilities for authorities” by CPMI-IOSCO (November 2015, <http://www.bis.org/cpmi/publ/d139.pdf>).

¹³ See <http://www.bis.org/cpmi/publ/d101.htm>.

¹⁴ See “Implementation monitoring of PFMI: First update to Level 1 assessment report” (August 2014, available at <http://www.bis.org/cpmi/publ/d117.pdf>) and “Assessment and review of application of Responsibilities for authorities” (ibid) by CPMI-IOSCO.

Table 1: Trade repositories in Brazil

Trade repository	Operator	Asset class(es)	Details	Authority accessing data
Cetip	Private	OTC derivatives, foreign exchange (FX) forward, fixed income	A registration, depository, clearing and settlement system for private and government bonds, and OTC derivatives. Originally established to consolidate information on bank funding and securities transactions. Operational since 1986 (for OTC derivatives since 1994). Aggregate information is disseminated publicly.	BCB CVM (one-day lag)
BM&F Bovespa	Private	OTC and exchange-traded derivatives, equities, securities, FX spot, FX forward	A registration, clearing and settlement system for derivatives, equities, securities, and FX. This TR has been operational since 2002, and data is collected daily. Aggregate information is disseminated publicly.	BCB CVM
FX System (Sisbacen – Sistema Cambio)	BCB	FX spot	The original system was implemented in 1988, and is used by financial institutions authorised to operate in foreign exchange markets. BCB implemented a new system in 2011 that covers transactions involving authorised institutions and their customers. All FX spot transactions must be reported. Data gathered by this TR is used to compile the Balance of Payments. Like Selic, aggregate data is disseminated publicly, and participant information is excluded.	BCB CVM (indirect)
Selic	BCB	Fixed income	This system was created in 1979. As a central securities depository (CSD), it processes the issuance, redemptions, interest payments, and custody of government bonds. Granular participant data is classified, but aggregate data is disseminated publicly.	BCB CVM (indirect)
SCR	BCB	Credit	This credit information system was launched in 2002 by the CMN (building on an earlier version in 1997) and is managed by the BCB. It underwent improvements between 2009–11 to collect more comprehensive information on loans (collateral, renegotiation, loans' market value etc.). Each month, financial institutions with booked credit operations in Brazil or abroad report all exposures to individual domestic borrowers above R\$200.	BCB CVM (indirect)
RDE-ROF	BCB	Credit	This declaratory electronic registration system was implemented in the early 2000s in order to replace the former paper registry. It is used to record credit operations of domestic residents that raise funds abroad, such as loans, bonds, leases and trade credits. Originally conceived as a tool to help manage Brazil's foreign currency liabilities, the system is now a major source for the compilation of Brazilian External Debt Statistics. Data collected includes information on the foreign creditor, value, interest rates and maturity, as well as flows of funds.	BCB CVM (indirect)
CIP-C3	Private	Credit	Collects data on credit assignment transactions (loans originated to sell) for specific credit categories, such as payroll and auto loans. Operational since 2011. Data is collected daily. Aggregate information is disseminated publicly.	BCB

Box 1: Trade reporting requirements in Brazil by asset class

*OTC derivatives:*¹⁵ In response to the growth in the OTC derivatives market and the resulting need for transparency, the National Monetary Council (CMN) issued Resolution 2,042 in 1994, which called for, among other things, mandatory registration of OTC derivative transactions. Resolution 3,505/2007 mandated that financial institutions (FIs) must report OTC derivative transactions to TRs. OTC derivative transactions must be reported to a TR to be considered valid according to Law 12,543/2011; no exemptions are permitted. One or both parties can report OTC derivatives; in the case of both parties reporting the transaction, all details must match exactly. Over-the-counter contracts accounted for 29% of the derivatives market in Brazil by notional amount as of September 2016.

Resolutions CMN 3,824/2009 and 3,833/2010 respectively govern reporting requirements for domestic financial and non-financial institutions. A domestic entity that is counterparty to a foreign OTC derivative contract is required to report the trade to a domestic TR. If a Brazilian FI, or one of its foreign affiliates, transacts with a counterparty outside of Brazil, the trade must still be reported and the identity of the foreign counterparty cannot be masked. Non-FIs are required to report to a domestic TR all foreign OTC derivatives transactions that occur abroad if used for hedging purposes; however, their subsidiaries and affiliates abroad are not bound by this resolution.

Cetip provides daily valuations of OTC derivative positions, even though these are not specifically required in the 2007 Resolution. While Cetip values most OTC derivatives daily, there is a small segment of trades (approximately 4% of all registered trades) valued monthly by the counterparties, referred to as valued by participant derivatives (VCP) for financial statement purposes. VCPs are typically transactions for which the underlying market prices are unavailable to the TR (e.g. reference curves for “plain-vanilla” swaps) or where the structure of the trade is overly complex.

Foreign exchange: All foreign exchange (FX) spot transactions must be reported by authorised institutions to TRs according to Law 4,131/1962, Resolution CMN 3,568/2008 and Circular BCB 3,691/2013. These transactions are reported on a daily basis, except those up to US\$ 3,000 related to international travels and remittances that can be reported on a monthly basis. Institutions authorised to conduct FX spot transactions comprise commercial banks, multiple or universal banks, investment banks, federal savings bank, development banks, FX banks, credit financing and investment societies, securities and stocks brokerages, securities and stocks dealers and FX brokers.

Fixed income: There are two types of fixed income transactions that are reported to TRs (Cetip and Selic): interbank deposits and repurchase transactions; and time deposit or fixed-income securities issued by FIs in the primary and secondary markets (see also Annex 2). Resolutions CMN 3,339/06 and 3,399/06 state that interbank deposits and repurchase transactions must be reported to BCB-approved systems, without exemptive relief. Certain time deposits issued by financial institutions may be eligible for relief from certain provisions of the trade reporting law. For example, time deposit certificates (CDB) and other physically issued instruments (e.g. real estate and agribusiness credit bills) must be reported within 3 business days of their issuance, unlike other instruments which must be reported on the same day. In the case of CDBs, same-day trade reporting is not a prerequisite for their validity and relief is applied to issuances below a R\$5,000 total daily amount. In practice, the majority of transactions are reported within two business days.

Credit: All FIs regulated by the BCB must report credit operations (i.e. domestic and external loans, and debt assignments)¹⁶ to a TR (SCR, CIP-C3, RDE-ROF) according to Law 4,131/1962 and Resolutions CMN 3,844/2010 and 3,658/2008. Resolution CMN 4,088/2012 requires that credit operations that use vehicles and real estate as collateral for loans also be reported to TRs.

¹⁵ A derivatives transaction in Brazil is defined as futures and options contracts where the underlying asset is a security, and other derivative contracts, irrespective of the underlying asset. Over-the-counter is defined as any transaction that is not traded on an exchange or electronic trading platforms and is based on bilateral contracts with terms agreed by both counterparties.

¹⁶ Debt assignments are created when debt rights and obligations are transferred from a creditor to a third party.

Data quality: The Brazilian authorities have a data quality framework that includes the use of defined standards, terms and governing principles regarding information management (see Annex 3 for the data fields reported for different asset classes to TRs in Brazil). The BCB and CVM have established this framework for TRs within each authority’s responsibility, and hold them and their senior executives responsible for ensuring data quality including confirming the accuracy of submitted records, performing corrections to their own databases whenever necessary and conducting periodic checks on processes to identify areas of improvement. In cases where both counterparties use the same TR for the transaction, each must report the parameters of the transaction independently and once the TR verifies that they match, a confirmation is sent to the participants stating that the trade was made. Trades not submitted or rejected due to incomplete or incorrect data are invalid and unenforceable. Both the BCB and CVM perform a number of validation tests on received datasets. Moreover, BM&F Bovespa and Cetip are designated as self-regulatory organisations (SROs), and are monitored by the BCB and CVM for their data quality assurance practices, including via on-site examinations.

The BCB also processes data from sources outside TRs, such as from government ministries and directly from supervised institutions via monthly/daily reports with predefined templates using proprietary systems (see Table 2). These data are combined depending on the specific purpose of analysis and also used to cross-check the quality of TR data. For instance, data from the Credit Information System (SCR) is cross-checked with data from financial statements, National Social Security Institute (INSS), and CIP-C3. Likewise, CVM compares derivatives positions registered on TR data with corporates’ quarterly financial statements. Cross-check procedures differ depending on whether data is from private or BCB-operated TRs. Data from private TRs, like BM&F Bovespa, are checked by comparing accounting information provided by financial institutions on a monthly basis to the TR data. Furthermore, term deposit data from these private TRs is compared to data from Sisbacen, a BCB-controlled TR.

Table 2: Other (non-TR) data collected by the BCB

System	Data Collected
STAW10	Pre-formatted accounting statements and monthly reports on risk management (liquidity risk, market risk, and operational limits) are received using this system.
Sisbacen	Data on daily balances on deposits (demand, savings, and time), foreign exchange, and external loans are received using this system.
STR	STR is a real time gross settlement system. Data from a fund’s transfer message is collected by the BCB, and includes counterparty identification, transferred amount, purpose of payment, clearinghouse etc.

The Information Technology and Financial System Monitoring departments of the BCB manage TR data, which is collected from each TR independently. Direct access and management of TR databases is restricted to a small number of employees. The data undergoes quality checking and layout adaptation before it is saved on the BCB’s servers, after which it is ready for use in the monitoring systems. Users access the collated data through the Financial System Monitoring’s panel, which is a web-based application for pre-processed queries. All historical data for stock exchanges and clearing houses is kept at a transaction level.

TRs operated by the BCB, such as the FX System and SCR, have automatic validation procedures that check the consistency of the data and the information provided is compared to data from the Internal Revenue Service (IRS), Ministry of Development, Industry and Foreign Trade, and the National Social Security Institute. The External Funding System, which tracks all financial institutions' funding operations, also contains automated data checking routines, such as validating fields independently and cross-checking possible relationships among the declared fields to test for inconsistencies.

Counterparty identifiers: The Brazilian tax file number is used to identify counterparties in the TR data. The tax file number is a unique identification number that is administered by the IRS. The number applies to both individual and corporate taxpayers (unlike the Legal Entity Identifier (LEI), which does not identify individuals).¹⁷ The use of this identifier in all data sets collected by the BCB and CVM simplifies the challenges of data mapping and aggregation significantly. However, international counterparties that do not have a Brazilian tax file number (in the case of offshore trades) cannot be identified.

Domestic and cross-border arrangements for accessing TR data: Consistent with the recommendations of the 2013 CPMI-IOSCO report on authorities' access to TR-held data, it is preferable that access to relevant data held in TRs be direct rather than indirect, to enable authorities to have continuous and un-intermediated access to relevant TR-held data.¹⁸

The BCB and CVM have the authority, under Law 12,810/2013, to access data from each Brazilian TR. Of the private TRs, the BCB receives data from BM&F Bovespa, Cetip and CIP-C3, while CVM receives data from BM&F Bovespa and Cetip. However, the BCB and CVM can request data from any TR on an ad-hoc basis.

The CVM has indirect access via ad-hoc requests to the TRs operated by the BCB. The MoU signed by the two authorities outlines such data sharing arrangements, which grant each of them access to detailed data of the other for the exercise of their respective regulatory responsibilities. A written request (paper or electronic) must be submitted to the other authority and contain a brief description of the facts, legal basis for the request, the nature and period of data required.

Brazil was identified in the 2015 FSB peer review report on OTC derivative trade reporting and its 2016 follow-up progress report¹⁹ as having challenging or significant barriers to direct access by foreign authorities. Currently, Brazil does not have any cross-border data sharing agreements that allow foreign authorities direct access to Brazilian TR data. Foreign authorities may access TR data directly only if they obtain consent from relevant participants of the TR, and on a case-by-case basis.

¹⁷ The LEI is a 20-character, alpha-numeric code, to uniquely identify legally distinct entities that engage in financial transactions globally. See <https://www.leiroc.org/>.

¹⁸ See "Authorities' access to trade repository data" by CPMI-IOSCO (August 2013, available at <http://www.bis.org/cpmi/publ/d110.pdf>).

¹⁹ See "Report on FSB Members' Plans to Address Legal Barriers to Reporting and Accessing OTC Derivatives Transaction Data" (August 2016, available at <http://www.fsb.org/2016/08/report-on-fsb-members-plans-to-address-legal-barriers-to-reporting-and-accessing-otc-derivatives-transaction-data/>).

Foreign authorities' access to Brazilian TR data is only obtained indirectly, either through a bilateral or multilateral MoU or by submitting an ad-hoc request to the BCB or CVM.²⁰ Currently, the BCB has 21 MoUs with 26 foreign authorities that allow information²¹ to be exchanged on supervised institutions by way of written request describing the information being sought, the purpose of the request, the time period and urgency of the request. There have been no requests thus far by foreign authorities for direct access to data from Brazilian TRs, nor have the Brazilian authorities sought access to foreign TR data.

Neither the BCB nor the CVM currently have plans to approach foreign jurisdictions or foreign TRs to gain access to data held there. As previously noted, there are certain instances in which transactions entered into by Brazilian subsidiaries or affiliates outside of Brazil may not be reported to a Brazilian TR (i.e. foreign affiliates of non-FIs). In those cases, the Brazilian authorities are reliant on aggregate information about those transactions through consolidated supervisory information. In specific situations, the supervisor can request detailed information from operations abroad directly to the financial institution or indirectly through the host/home supervisor via an MoU.

Brazil also has potential barriers that limit the full reporting of transactions to TRs pursuant to foreign requirements. Brazilian entities' consent is a necessary condition for the reporting of transactions to foreign TRs subject to foreign requirements. In practice, this may not be a significant barrier since counterparties are permitted to provide standing consent.²²

Public dissemination of TR data: Both Cetip and BM&F Bovespa are mandated by CVM Instruction 461 to publicly disseminate aggregate exchange traded and OTC derivatives data. Publicly available data for the latter is aggregated by fields such as product type, contract type, member type, and currency, whereas exchange traded derivatives data includes outstanding positions, prices, and trade characteristics. The data is updated on a daily basis, and can be downloaded from Cetip's and BM&F Bovespa's websites.

Data is freely available to the public on the BM&F Bovespa's website. For a fee, users can access data from Cetip that includes fields such as aggregate notional value transacted, asset class and number of transactions. None of the publicly disseminated TR data contains counterparty identifying information nor are individual transactions identified.

Notwithstanding the benefits associated with public dissemination on an anonymised trade-by-trade basis,²³ the authorities have expressed the view that the main reason not to disclose all

²⁰ For details, see the reports cited in the above footnotes and Brazil's update report on planned actions to address legal barriers in relation to trade reporting (available at <http://www.fsb.org/wp-content/uploads/Brazil.pdf>).

²¹ Including information relevant to the financial and operational condition of the cross-border entity, such as reports of capital reserves, liquidity or other prudential measures and internal control procedures.

²² A consent jurisdiction is one where entities are able to provide consent for reporting data to foreign TRs pursuant to foreign requirements once, and not on a trade-by-trade basis. The Brazilian regulatory framework complies with Legal Barriers to Reporting Recommendation 2 in the "Report on FSB Members' Plans to Address Legal Barriers to Reporting and Accessing OTC Derivatives Transactions Data" (ibid), whereby all jurisdictions should permit transaction counterparties to provide standing consent to the reporting of such data to domestic and foreign TR.

²³ See, for example, "Post-Trade Transparency in the Credit Default Swaps Market" by IOSCO (November 2014, available at: <http://www.iosco.org/library/pubdocs/pdf/IOSCOPD465.pdf>).

transactions, on a trade-by-trade basis, is that in many cases the counterparties (or at least one of them) involved can be easily identified.

Systemic risk monitoring

Oversight bodies: The regulatory structure in Brazil includes (see Annex 1):

- the CMN as the highest decision making body of the national financial system, including on macroprudential matters;
- regulatory and supervisory authorities for different sectors of the financial system. Among them, the BCB is widely perceived to have a de facto mandate to safeguard financial stability given its responsibilities and its role in past episodes of financial crisis. The CVM monitors and analyses market behaviour and misconduct as part of its mandate to maintain confidence in the integrity of securities markets; and
- arrangements for cooperation between authorities, such as through bilateral MoUs and the Committee of Regulation and Supervision of Financial, Securities, Insurance and Complementary Pension Markets (COREMEC).²⁴

Each of these authorities and bodies has created internal structures to monitor systemic risks. In the case of the BCB, the Financial System Monitoring Department (DESIG) was created in 2000 as an off-site supervisory department to maintain internal databases and promote sharing of data within the BCB. DESIG and other departments assist the BCB's internal Financial Stability Committee (COMEF), which was established in 2011, to detect and monitor systemic risk. To perform this function, DESIG employs in excess of 200 staff in an analysis, support or compliance capacity. Also in 2011, the CVM created the Committee on Risk Identification (CIR) regarding the markets, entities and products regulated by it.

Inter-agency coordination for systemic risk monitoring takes place both bilaterally on a case-by-case basis²⁵ as well as through COREMEC, which formed a subcommittee in 2010 with the objective of monitoring the stability of the national financial system (see Annex 1).

Risk monitoring processes: The authorities use TR data for a wide range of regulatory purposes (see Annex 4), including: supervision and oversight of market participants, trading venues and financial market infrastructure; monitoring of financial markets; monitoring of systemic risk; and other purposes, such as calibration and impact studies of regulatory policies.

Systemic risk monitoring comprises the monitoring of specific risks (credit, liquidity, market etc.), including through automated early warning indicators, as well as contagion analysis and

²⁴ The FSAP had recommended that the Brazilian authorities create a multi-partite, high-level committee, comprising all financial safety net providers, with an explicit mandate for systemic risk monitoring and crisis coordination. In their response, the authorities noted that they consider the current institutional arrangement for systemic risk monitoring and coordination as adequate and not requiring modification (see Annex 6).

²⁵ One example is Joint Decision 18 issued by the BCB and CVM in July 2013, creating a working group formed by staff of both institutions with the aim of supporting decisions to be taken by these authorities regarding mandatory central clearing of standardized OTC derivatives contracts.

top-down macroeconomic stress tests.²⁶ The BCB is able to conduct these analyses in large part due to the depth and breadth of the TR data available.

Liquidity risk: The BCB uses the Liquidity and Market Risk Monitoring System (SMM), which was implemented in 2005, to monitor and assess liquidity risks. The SMM tool receives and processes 40 million data records daily from TRs and non-TR data sources (e.g. accounting information and TR data on bank funding), and combines them into a single database.²⁷ From this database, the BCB can monitor a variety of indicators on a daily and monthly basis such as liquidity ratios, central bank reserve cash flows, funding profiles, and cash flow projections. Given the concentration in the financial system, special attention is given to large institutions whose behaviour drives the overall market.

During the 2008 global financial crisis, the SMM was used to identify a decrease in liquid assets held by Brazilian banks due to mark-to-market losses and cash outflows. As a result, the BCB supervised those banks with low liquidity levels more closely and took measures to ensure that banks held enough liquid assets to survive under a one month stressed scenario.²⁸

Investment funds and pension funds are an important sector of the financial system in Brazil because they contribute liquidity to the market in addition to providing an accessible investment savings vehicle to retail investors. The BCB currently monitors the liquidity risk for banks stemming from investment funds through step-in risk (see section 3).

Credit risk: Credit risk monitoring includes a micro- and a macroprudential dimension. The former involves the evaluation of intrinsic risk and credit risk profile of individual institutions using monthly loan and borrower-level data from the SCR and other databases (e.g. accounting statements, government securities and derivatives positions etc.). The latter involves analysis at the aggregate level (indicators by clusters of FIs) as well as for households and non-financial corporations (payment capacity, indebtedness etc.). The data on borrowers includes the type of credit, interest rate, currency, risk rating, size (companies) or income range (individuals), among other fields. In combination with other types of analysis, the BCB can identify systemically important non-financial firms that are most at risk of defaulting on their loans.²⁹

An example of the use of TR data for credit risk analysis and macroprudential policymaking involved the change in risk weights for auto loans in 2010-11 (see Box 2).

²⁶ See “Financial Stability in Brazil” by Pereira et al (BCB working paper 289, August 2012, <http://www.bcb.gov.br/pec/wps/ingl/wps289.pdf>) on the financial stability work undertaken by the BCB and its institutional set-up. The IMF’s technical note on the macroprudential policy framework (June 2013, Country Report No. 13/148, <https://www.imf.org/external/pubs/ft/scr/2013/cr13148.pdf>) also provides an overview of the financial system monitoring process.

²⁷ These other sources provide the BCB with, inter alia, balance sheet, investment funds, reserve accounts, market and liquidity risk reports data directly from authorised institutions monthly and daily.

²⁸ See “Liquidity reserve requirements in Brazil” by Robitaille (June 2011, Board of Governors of the Federal Reserve System, International Finance Discussion Papers 1021, available at <https://www.federalreserve.gov/pubs/ifdp/2011/1021/ifdp1021.pdf>).

²⁹ The BCB has also developed automatic warning systems based on index assessments. Monitored indexes include delinquency, allowance (delinquency coverage with provision), losses, restructured loans, credit margin, risk appetite, portfolio composition, duration, and amount of credit granted.

Box 2: The Case of Auto Loans in Brazil

In December 2010, Brazilian authorities implemented a new policy to curb demand on new auto loans given their rapidly increasing popularity from December 2008 to October 2010. Using TR data on credit operations, the authorities were able to analyse the lengthening of maturities and the loan-to-value ratios in this market segment. Furthermore, non-performing loans and interest rate data suggested that risks were being mispriced, which caused concern that origination standards were decreasing.

Auto loans were deemed systemically important by the BCB as they represented 25% of all household loans (11% of all outstanding loans in the Brazilian financial system) in December 2010. With signs pointing to increased risk of default in auto loans, the BCB decided to double the risk weight to 150% for new long-term loans with high loan-to-value (LTV) ratios. The primary objective of the measure was to increase the resilience of the banking sector, with a secondary objective not to impede corporate investment. The calibration of the measure used data on delinquency rates by LTV, maturity and respective loss given defaults. The policy was effective in reducing demand for long-maturity, high-LTV auto loans. The share of these types of loans fell from 74% of all loans in November 2010 to 50% in December 2012.³⁰

Foreign exchange risk: The BCB monitors the behaviour and trends of FX markets to identify risk exposures and macroeconomic movements that may affect the stability of the Brazilian financial system. This market is monitored using the FX System (Sistema Câmbio). Data is used to create rankings, profiles and evaluations of institutions in both the primary (operations with customers) and secondary (interbank) FX markets. The BCB calculates the aggregate FX position of all financial institutions and of individual institutions. This analysis is done daily, which helps the authorities devise more informed FX and monetary policies. The FX System gives support to government initiatives relating to anti-money laundering, and is also the main source of data for the compilation of balance of payments in Brazil.

OTC derivatives data, once transformed into positions in the underlying risk factor, are also used to monitor trends in the FX market and the effects of particular policies. For example, data from BM&F Bovespa and Cetip was used to track the effects of BCB's intervention on the exchange rate. Following the 'taper tantrum', the BCB began in August 2013 selling exchange rate swaps every week in an attempt to protect the economy against excessive exchange rate volatility, and consequently reduce financial risks due to balance sheet effects.³¹

Stress tests: Stress tests are used by the BCB to assess the stability of the financial system and real sector, and focus on liquidity, solvency and contagion. The frequency with which they are conducted depends on the sector of the economy. Stress tests of banks and bank conglomerates are conducted monthly, while those for credit unions and other banking institutions are conducted on an ad-hoc basis. Macroeconomic stress tests measure the effects of macroeconomic scenarios on non-performing loans (NPLs) and credit growth, capital adequacy ratios (CARs), and the overall economy. Sensitivity analysis measures the effects of shocks in NPLs, interest rate, foreign exchange rates and real estate prices on CARs. In addition to

³⁰ See "Implementing Loan-to-Value ratios: the case of auto loans in Brazil" (2010-2011) by Afanasieff et al (Central Bank of Brazil Working Paper 380, March 2015, <http://www.bcb.gov.br/pec/wps/ingl/wps380.pdf>) and "Experiences with the ex ante appraisal of macroprudential instruments" by the CGFS (CGFS Papers 56, July 2016, <http://www.bis.org/publ/cgfs56.pdf>).

³¹ See "DNDFs: A more efficient way to intervene in FX markets?" by Garcia and Volpon (PUC Working Paper No. 621, May 2014, available at: <http://www.econ.puc-rio.br/pdf/td621.pdf>).

macroeconomic projections/scenarios, data for these tests are retrieved from standardised reports by financial institutions or other sources, such as the credit information system (SCR) and other TRs. The results of the stress tests are made available to the COMEF for discussion, and also to the public in aggregate form through the Financial Stability Report (FSR).

Contagion risk: Contagion stress tests are used by the BCB to assess how the default of one entity affects other entities in the financial system and real economy. The analysis aims at identifying systemic consequences from events such as a bank’s resolution, the bankruptcy of a large economic conglomerate, or reputational/corruption issues. The tools allow the mapping of vulnerabilities from different perspectives: interconnectedness within the financial system and in the non-financial sector, as well as interbank market, non-financial sector and unemployment contagion (see below).

One example of the BCB’s use of TR data in interconnectedness analysis is to assess the impact that changes in mandatory clearing mandates would have on mitigating contagion risk in OTC derivatives markets. To undertake the analysis, the BCB constructed a relationship network of credit and debit positions between all financial entities using data from different TRs. The impact of the default of one entity on the financial network was simulated by calculating the resulting losses of each creditor entity in their network. The solvency calculation was then performed on each related entity in the network until no other institution defaulted. To gain a more complete picture of the network, a different starting entity was chosen to hypothetically default and the impact of that entity’s default was then compared to the capital of its creditors (and to those creditors’ counterparties) through the network. The BCB researchers then introduced central counterparties into the network and repeated their default calculations. This analysis provided the BCB valuable feedback of the impact of the clearing mandate.

One of the main improvements in systemic risk analysis since the FSAP has been the development of a real economy network model based on data from the Brazilian Payments System. In particular, the model of contagion that until 2014 was limited to mapping exposures and simulating contagion among financial institutions was augmented to incorporate effects from the real economy. An example of the use of such data in contagion analysis is the assessment of the financial system’s resilience to possible default effects of the companies involved in the so-called “car wash” operation (see Box 3 and Annex 5).

Box 3: Contagion analysis – The case of Operation Car Wash³²

“Operation Car Wash” is the name of an investigation by the Federal Police of Brazil that was first made public in March 2014. Initially a money laundering investigation, it has expanded to cover allegations of corruption at the state-controlled oil company Petrobras, where it is alleged that executives accepted bribes from supplier companies in return for awarding contracts at inflated prices.

The BCB assessed the financial system’s resilience to possible default impacts of the core companies mentioned in this operation (engineering companies, contractors and economic groups to which they belong). Mapping a network of the real economy was achieved by analysing the payments made to and from companies and their relevant importance to companies’ revenues using electronic transfers in the

³² See the October 2015 Financial Stability Report by the BCB, available at http://www.bcb.gov.br/htms/estabilidade/2015_10/refCon.pdf (in Portuguese only).

Brazilian Payment System (SPB). By mapping payments and the relative importance of those payments, the BCB was able to estimate the degree of dependence each company had on each other company.

Using factors such as their average risk rating in the SCR and dependence on Petrobras in terms of revenue, a subgroup of vulnerable companies (from among the core companies involved in the investigation) was identified. These companies were then assumed to default, triggering a chain of subsequent defaults on other companies that (based on SPB data) were directly or indirectly reliant on them. When the company was a member of an economic group (based on data from the IRS and CVM), the analysis could be performed on the consolidated group.

The exercise included a number of scenarios with very conservative assumptions, such as the default of all members of selected economic groups, and associated job losses of their employees (using data from the Ministry of Labour) if those companies were to become insolvent. In addition, full losses were simulated in the event of default, excluding guarantees, insurance and other forms of loss mitigation.

The real economy was then linked to the financial system by gathering data (mainly drawn from various TRs) on the full range of exposures via credits and guarantees, debentures and commercial paper, foreign debt, OTC derivatives, foreign exchange transactions, and equities, with the aim to measure the contagion effects that default of those companies in the real sector (and loss of jobs of their employees) would have on the financial system.

The analysis showed that despite these estimated losses, the impact on banks' capital was moderate and easily absorbed by existing regulatory capital levels.

Lessons learned and issues to be addressed

Brazil has been among the pioneers among FSB jurisdictions in setting up trade reporting of financial transactions, and has a well-established system that has been augmented and refined over the last two decades. There are several factors that contribute to its effectiveness:

- Comprehensive requirements for reporting to TRs, covering OTC and exchange-traded derivatives, loans, foreign exchange, equity and fixed income transactions.
- A key feature of the Brazilian regulatory system, and one that further enhances the completeness of the data collected, is the requirement that OTC derivative transactions must be reported to a TR to ensure the validity of the contract.
- Identification of the final beneficiary of each counterparty to a transaction is mandatory.
- Direct access by the relevant authorities (BCB and CVM) to transaction-level datasets from multiple asset classes, which enable them to use the data in accordance with their respective mandates.
- Requirements placed on TRs, which are supported by a system assigning senior executive responsibility for data quality and strong validation checks, help ensure data completeness and quality. This allows the authorities to focus their efforts primarily on data uses rather than data cleansing and mapping.
- Challenges related to data aggregation have been overcome using Brazil's national tax file number, a unique identifier that operates as a linchpin across domestic datasets.
- Good cooperation between authorities, both through bilateral arrangements (e.g. BCB-CVM) and through inter-agency coordination bodies such as COREMEC.
- Significant resources deployed by the BCB to the analysis of TR data for identifying, measuring and monitoring systemic risk.

The breadth and depth of available TR data enable the BCB to undertake extensive systemic risk monitoring using a broad range of analytical tools, such as automated early warning indicators, contagion analysis and top-down macroeconomic stress tests. The authorities also use TR data for a wide range of other purposes, including supervision and oversight of market participants, trading venues and financial market infrastructure; monitoring of financial markets; calibration and impact studies of regulatory policies; and for issues related to supervision of conduct, such as market abuse and suitability.

Notwithstanding these achievements, as is the case in other countries, there are opportunities for further improvement to the current framework, particularly as regards operational risks, data harmonisation, access to foreign TR data and foreign access to Brazilian TRs.

Operational risks: As discussed previously, the Brazilian TR industry is comprised of several public and private TRs; the two private TRs for all OTC derivatives as well as some FX and fixed income transactions are Cetip and BM&F Bovespa. In addition to trade reporting services, these TRs function as a central securities depository, trading platform and settlement system; BM&F Bovespa also operates a central counterparty (CCP).³³ The two companies collectively represent a large part of the financial market infrastructure in Brazil, whose concentration will be further magnified if their proposed merger is approved and there is an eventual integration of their infrastructures.³⁴ The proposed merger, which was announced in April 2016, has to be approved by the BCB, CVM and the Economic Defence Administrative Council (CADE) within 18 months.

The Brazilian authorities note that the BCB and CVM, in accordance with their respective regulatory mandates, already monitor operational risks stemming from the concentration of post-trade activities through regular on-site inspections; that there is a comprehensive set of requirements and responsibilities assigned to the FMI's administrators;³⁵ and that any changes in the functioning of their infrastructures will require regulatory approval.

The concentration of systemically important services embedded within a single entity or organisation can create strong institutional interdependencies (stemming from common participants) and operational interdependencies (through linked processes) that increase the potential for contagion and systemic risks. Difficulties experienced in one part of the business could have negative consequences on the other parts. For example, the failure of the CCP could hamper the adequate processing of settlement in the system and the timely and adequate recording of the transactions in the TR, which is crucial in times of market stress. Concentration of operations in a single entity with little substitutability is also a factor of risk. For example, a cyber-attack on a TR would limit the ability to retrieve data for risk monitoring, or to redirect the data to another TR. As a result, recovery and continuity plans should be designed with these

³³ See the description of BM&F Bovespa in Implementation monitoring of PFMI: Level 3 assessment – Report on the financial risk management and recovery practices of 10 derivatives CCPs by CPMI-IOSCO (August 2016, <http://www.bis.org/cpmi/publ/d148.pdf>).

³⁴ See <https://www.cetip.com.br/Noticias/Material-fact-combination-of-bmfbovespa--bolsa-de-valores-mercadorias-e-futuros-and-cetip-sa--mercados-organizados>.

³⁵ As previously noted, CPMI-IOSCO assessed the Brazilian authorities on their implementation of the PFMI, and found that the regulatory framework is complete and consistent with the Principles and Responsibilities.

contagion risks in mind so as to allow other parts of the business to function properly despite disruptions occurring in one part.

- ***Recommendation 1: The BCB and CVM should intensify monitoring of the operational risks from any increased concentration of systemically important functions within private financial market infrastructure, including through recovery and business continuity planning.***

Data harmonisation: In September 2014, the FSB asked CPMI and IOSCO to develop global guidance on harmonisation of data elements that are reported to TRs and are important to aggregation by authorities.³⁶ In November 2014, CPMI and IOSCO established a working group with the mandate to develop guidance regarding the definition, format, and usage of key OTC derivatives data elements, including UTIs and UPIs.³⁷

The harmonised data elements being developed by the CPMI-IOSCO group are the unique transaction identifier (UTI), unique product identifier (UPI) and other critical data elements (such as price, maturity, volume etc.). Another key international standard in OTC derivatives datasets is the Legal Entity Identifier (LEI), a unique code for the identification of entities that is designed to uniquely and unambiguously identify participants in financial transactions.

The Brazilian authorities have their own set of data standards and taxonomy for data elements that are used by domestic TRs and that may not align fully with international standards. For example, the national tax file number is used to identify counterparties in TR data and, while this method is suitable for internal data aggregation, it limits the ability to aggregate data across jurisdictions. Additionally, there are no identifiers for foreign counterparties transacting with a Brazilian entity (such as a subsidiary) offshore, which presents further data aggregation issues for both Brazil and the foreign jurisdiction in which the transaction takes place.

By adopting an international counterparty identification standard such as the LEI, as well as by adopting the UTI and UPI when they have been fully developed, Brazilian and foreign authorities could more easily integrate and aggregate Brazilian TR data with foreign TR data. A number of internationally active Brazilian firms already have an LEI number.³⁸ The use of

³⁶ See FSB press release entitled “FSB publishes Feasibility Study on Aggregation of OTC Derivatives Trade Repository Data” (19 September 2014, available at http://www.fsb.org/2014/09/pr_140919/).

³⁷ See the following CPMI-IOSCO reports: “Technical guidance on the harmonisation of the Unique Transaction Identifier” (February 2017, <https://www.bis.org/cpmi/publ/d158.pdf>), “Consultative report on the harmonisation of the Unique Product Identifier” (December 2015, <http://www.bis.org/cpmi/publ/d141.pdf>), “Second Consultative report on the harmonisation of the Unique Product Identifier” (August 2016, <http://www.bis.org/cpmi/publ/d151.pdf>), “Consultative report on harmonisation of key OTC derivatives data elements (other than UTI and UPI) – first batch” (September 2015, <http://www.bis.org/cpmi/publ/d132.pdf>) and “Consultative report on critical OTC data elements (other than UTI and UPI) – second batch” (October 2016, available at <http://www.bis.org/cpmi/publ/d153.pdf>). See also the “Consultation document on the proposed governance arrangements for the unique transaction identifier (UTI)” by the FSB (March 2017, <http://www.fsb.org/wp-content/uploads/Proposed-governance-arrangements-for-the-unique-transaction-identifier-UTI.pdf>).

³⁸ See <https://www.gleif.org/en/lei-data/access-and-use-lei-data>.

internationally recognised identifiers and critical data elements is expected to improve data quality, as noted in the 2015 FSB peer review report on OTC derivatives trade reporting.³⁹

The Brazilian authorities have already taken some steps in this area. For example, the BCB assented to the LEI-ROC Charter in May 2015 and has started a program to incorporate the LEI dataset into its own systems for evaluation purposes. The BCB is currently in discussions with other authorities on the requirements and cost implications of implementing the LEI system in Brazil, and will consider UPI, UTI and other critical elements once they have been finalised. In May 2016, the IRS issued a Regulatory Instruction that included the LEI as mandatory information in the National Register of Legal Entities (related to the fiscal identifier) for those entities that already have this code.

Given the effective use of the unique fiscal identifier to aggregate data across TRs in Brazil, the BCB considers the LEI as an adjunct identifier for companies operating internationally. Even in the case that the authorities choose not to adopt internationally harmonised data identifiers in specific areas, there is nevertheless a need at least to establish systems that would allow reliable data mapping so as to permit aggregation of TR data by Brazilian and foreign authorities to take place.

- ***Recommendation 2: The authorities should prepare for the adoption of, or interface with, international data harmonisation standards on OTC derivatives (such as the LEI, UPI and UTI) to enable their use by TRs in Brazil and enable meaningful aggregation on a cross-border basis.***

Access to TR data: The 2015 FSB Thematic Review of OTC Derivatives Trade Reporting recommended that, by June 2018 at the latest, all jurisdictions should have a legal framework in place to permit access to data held in a domestic TR by domestic authorities and by foreign authorities, on the basis of these authorities' mandates and in accordance with the domestic regulatory regime. The report further recommended that the legal framework should include eliminating the conditions that, in practice, prevent this access. It was also stated that in general, consistent with the recommendations of the CPMI-IOSCO 2013 report on authorities' access to TR-held data, it was preferable that access to relevant data held in TRs be direct rather than indirect, to enable authorities to have continuous and un-intermediated access to relevant TR-held data. The 2015 FSB review also recommended that "all relevant authorities should coordinate in establishing cooperative arrangements that facilitate authorities' access to TR-held data (whether it be through direct or indirect access)".⁴⁰

Brazil was identified in the 2015 FSB review as having significant/challenging conditions that foreign authorities would have to overcome if they were to have direct access to domestic TR data. Access for foreign authorities to a domestic TR without going through a national authority

³⁹ Recommendation 4B of that report stated that "jurisdictions are strongly encouraged to support the development and adoption of [global] identifiers and data standards and should look to international guidance in this area." For details, see the November 2015 "Thematic Review on OTC Derivatives Trade Reporting: Peer Review Report" by the FSB (ibid).

⁴⁰ See pages 8-9 of the FSB report (ibid). On direct access, see pages 23–24 of the CPMI-IOSCO report (ibid), which states: "In instances where direct access by an authority is blocked because of legal constraints on direct access, the legal framework may provide for indirect access via another authority, which will typically be a TR supervisor or another authority having direct access to the data. In such circumstances, indirect access may be a second best solution to address these situations, but it should be viewed as the exception, not the norm."

requires the express consent of the participant whose data would be shared. This consent could allow for data to be shared on an ongoing basis, but the determination would be made on a participant-by-participant basis. While Brazilian authorities have taken steps to identify jurisdictions in which future bilateral agreements could be made, they should work towards eliminating practical barriers that prohibit direct foreign access to domestic TR data.

The 2016 follow-up FSB report also states that foreign authorities have indirect access to data held in domestic TRs through bilateral or multilateral MoUs between national and foreign authorities, or by formally submitting their requests to the national authorities (BCB or CVM). The BCB has several bilaterally negotiated MoUs with other foreign supervisory authorities that facilitate the exchange of information including reports of capital reserves, liquidity measures and internal control procedures, and also allow for the on-site examination of subsidiaries of Brazilian banks abroad. However, they do not specifically address access to TR data on the trading activities of those entities or the exchange of other relevant data.

Access to foreign TR data (directly or indirectly) would also be beneficial for the Brazilian authorities, since it would enable them to monitor derivatives transactions by offshore subsidiaries and affiliates of non-FIs (see below), as well as the positions and activity of non-Brazilian entities in products related to the Brazilian economy (e.g. Brazilian Real swaps, non-deliverable forwards, Bovespa Index swap).

To access foreign TR data, the authorities will need to more closely align domestic reporting with international data standards (see above). They also need to establish – for reciprocity purposes – a legal framework to allow foreign authorities to access domestic TR data that concerns them (e.g. relating to trades by firms established in their jurisdictions or with subsidiaries that have a connection to their markets), preferably by direct access to TR data.

- ***Recommendation 3: The Brazilian authorities should establish a legal framework that allows relevant foreign authorities to access domestic TR data (and for Brazilian authorities to seek access to foreign TR data) according to their respective regulatory mandates, preferably on a direct basis in accordance with CPMI-IOSCO recommendations. They should also take concrete steps to coordinate with foreign regulators in establishing cooperative arrangements that facilitate authorities' access to TR-held data (whether through direct or indirect access).***

3. Regulation and supervision of investment funds

Background

The FSAP observed that Brazil's financial system had grown in size, diversification, and sophistication. One of the drivers of this trend was the expansion of securities and derivatives markets and, in particular, the growth of investment funds. The investment funds sector, which has continued to grow since the FSAP (from 45% of Gross Domestic Product (GDP) in 2011 to 51% in 2015), is sizable when compared to several other FSB jurisdictions.⁴¹

⁴¹ See the FSB's "Global Shadow Banking Monitoring Report 2015" (November 2015, <http://www.fsb.org/2015/11/global-shadow-banking-monitoring-report-2015/>).

Investment funds have been the focus of recent FSB work, with the objective of assessing and addressing potential financial stability risks from structural vulnerabilities associated with asset management activities. This work was undertaken partly in recognition of the significant growth in the worldwide asset management sector over the past decade.⁴² The trend towards greater market-based intermediation through asset management entities should enhance the efficiency, and contribute to the overall resilience, of the financial system by producing new sources of credit and investment, promoting international flows of capital, reducing reliance on bank funding and increasing competition in the financial system. Moreover, evidence suggests that most open-ended funds have been generally resilient. At the same time, it is important to ensure that any financial stability risks associated with the asset management sector are properly understood and addressed.

This section examines the regulatory and supervisory framework for investment funds in Brazil as it relates to potential risks to financial stability that the sector may pose, drawing on international experience and guidance in this area.⁴³

Overview of the sector

Size and structure: As of 30 April 2016, there were 8,812 Brazilian investment funds with a net asset value (NAV) of approximately R\$3 trillion. The NAV of the investment funds sector has grown steadily in recent years. According to the CVM, a large percentage of NAV is held in fixed income funds (65%);⁴⁴ multimarket investment funds are the second largest type of fund by NAV (20%);⁴⁵ and a relatively small percentage (5%) is in equity funds (see Table 3).

The sector consists of different types of investment funds governed by regulatory ‘instructions’ reflecting different requirements by type of investor and fund assets. The predominant investment fund type, representing almost 90% of the fund industry, is governed by Instruction 555/14 (‘555 Funds’). Instruction 555/14 governs investment funds that are open to all categories of investors, although individual 555 funds may impose restrictions on who may invest in the investment fund. As of the end of April 2016, these 555 Funds (excluding funds-of-funds, to avoid double counting) had a NAV of R\$2.86 trillion, distributed among 7,304 investment funds (see Table 3 for more details).

⁴² According to the FSB’s “Policy Recommendations to Address Structural Vulnerabilities from Asset Management Activities” (January 2017, <http://www.fsb.org/2017/01/policy-recommendations-to-address-structural-vulnerabilities-from-asset-management-activities/>), global assets under management rose from US\$53.6 trillion in 2005 to US\$76.7 trillion in 2015, equating to 40% of global financial system assets.

⁴³ See “Policy Framework for Strengthening Oversight and Regulation of Shadow Banking Entities” (August 2013, http://www.fsb.org/2013/08/r_130829c/), “Progress Report on Transforming Shadow Banking into Resilient Market-based Financing” (November 2014, <http://www.fsb.org/2014/11/progress-report-on-transforming-shadow-banking-into-resilient-market-based-financing/>), and the January 2017 “Policy Recommendations to Address Structural Vulnerabilities from Asset Management Activities” (ibid).

⁴⁴ This category encompasses a broad range of funds, comprising (in order of importance) ‘pure’ fixed income funds, ‘referenced’ (i.e. indexed) funds, money market funds, and external debt funds.

⁴⁵ These funds are permitted to invest in a broad range of asset classes.

Table 3: Structure and size of investment funds sector in Brazil (as at 30 April 2016)

555 Funds	Investor Type	Open/Closed Ended	NAV (R\$Bn)	Number	% of 555 NAV	% of total NAV
Fixed Income	Unrestricted/ Restricted	Open/Closed	\$ 2,080.1	1,921	73%	65%
Stocks	Unrestricted/ Restricted	Open/Closed	\$ 150.5	1,149	5%	5%
Foreign Exchange	Unrestricted/ Restricted	Open/Closed	\$ 5.2	31	0%	0%
Multimarket	Unrestricted/ Restricted	Open/Closed	\$ 620.0	4,203	22%	19%
Total 555 Funds			\$ 2,855.8	7,304	100%	89%
Non-555 Funds	Investor Type	Open/Closed Ended	NAV (R\$Bn)	Number	% of non-555 NAV	% of total NAV
Private Equity Funds	Restricted	Closed	\$ 183.0	732	56.5%	6%
Asset Backed Securities Funds	Restricted	Open/Closed	\$ 33.0	286	10.2%	1%
Non Standard Asset Backed Securities Funds	Restricted	Open/Closed	\$ 43.0	204	13.3%	1%
Real Estate Funds	Unrestricted/ Restricted	Closed	\$ 61.0	272	18.8%	2%
Exchange Traded Funds	Unrestricted/ Restricted	Open	\$ 3.7	14	1.1%	0%
Total Non-555 Funds			\$ 323.7	1,508	100.0%	11%

The remainder of the investment funds sector consists of non-555 Funds. These include private equity funds⁴⁶ as well as asset backed securities funds and non-standard asset backed securities funds,⁴⁷ each of which must be restricted to qualified and/or professional investors;⁴⁸ and other types of investment funds, such as real estate funds⁴⁹ and exchange traded funds (ETFs)⁵⁰ that may or may not be restricted. As of 30 April 2016, the non-555 Fund sector had a NAV corresponding to around 11% of the investment fund sector. Around two-thirds of the NAV of the investment fund sector (both 555 and non-555 Funds) is in restricted funds, while the remaining one-third is in funds without investor restriction.

⁴⁶ Private equity funds invest in venture capital, seed capital and, to a lesser degree, mature companies. They have in general a longer-term (8 to 10 years) investment maturity timeframe.

⁴⁷ Both types of funds have to invest at least 50% of NAV in asset-backed securities and, in relation to amortization priority, can have their shares divided in tranches (senior, mezzanine and junior). In addition, each tranche can be divided in series, according to the shares' public offering. What differentiates them is the fact that non-standard asset backed securities funds can acquire distressed asset-backed securities. Both types of funds are obliged to hire a credit rating agency to issue a rating to its shares.

⁴⁸ In general terms, qualified and professional investors are defined as those that have minimum amounts, respectively, of R\$1 million and R\$10 million invested in the financial market. Restricted funds are exempted from disclosure requirements to investors, provided there is an explicit provision in the investment fund's constitutive documents that restrict access to qualified and/or professional investors and may waive observance of concentration limits that apply to non-restricted funds.

⁴⁹ These funds must invest their NAV on real estate properties, financial assets and securities linked to the real estate sector.

⁵⁰ The majority of investors use the secondary market in BM&F Bovespa to acquire ETF shares.

Service providers: Each investment fund is required to have a fiduciary administrator, an asset manager and a custodian (see Box 4). Each of these service providers to the investment fund must be registered with CVM, other than the fiduciary administrator of a Real Estate Fund where the Real Estate Fund has less than 5% of its NAV invested in financial securities.

Box 4: Investment fund service providers

There are three principal categories of service providers to investment funds: the fiduciary administrator, the asset manager and the custodian. In addition, entities can be registered as “full administrators”, which means that they can act as both fiduciary administrator and asset manager provided they comply with Chinese wall requirements. All of these service providers must also be registered with CVM in advance of carrying out activities. Instruction CVM 558 establishes the minimum criteria that these participants have to meet in order to be authorised to perform asset management activities. Minimum criteria for registration include, but are not limited to:

- Minimum capital requirement or being authorized to operate as a financial institution by the BCB (thus adhering to capital requirements) for fiduciary and full administrators but not for asset managers.
- Evidence of compliance, risk management, asset management and fiduciary administration structures, systems, routines and staff, which must all be adequate and proportionate to the size and complexity of the operator. That includes formal designation of experienced officers responsible for such activities.

The fiduciary administrator is the principal fund ‘gatekeeper’. Its duties include, but are not limited to:

- preparing and disclosing the investment fund’s constitutive documents and periodic information;
- hiring and supervising all service providers necessary for the investment fund’s proper functioning (e.g. supervising the asset manager’s adherence to regulation and, specifically, the investment fund’s investment strategy limits and liquidity management policies);
- controlling subscriptions and redemptions by investors;
- handling all communication with investors;
- maintaining relationship with regulator on behalf of the investment fund, including reporting information to CVM; and
- calculating NAV.

The asset manager is responsible (subject to the limitations set out in the investment fund’s constitutive documents) for making and operationalising the investment decisions to achieve the investment fund’s objectives. It may be the same entity as the fiduciary administrator.

The custodian is the financial institution responsible for ensuring safekeeping of the investment fund’s assets.

Concentration: The sector is characterised by a high degree of concentration of service providers. As of May 2016, there were 90 active fiduciary administrators in the 555 Funds sector, with 95% of NAV administered by 15 administrators. Of the 620 active asset managers in the 555 Funds sector, 95% of NAV was managed by 82 participants. The five largest asset managers manage more than two-thirds (68%) of the assets under management in the Brazilian

asset management industry.⁵¹ There were 42 active custodians in the investment funds industry, with 95% of the 555 industry NAV held by 9 custodians linked to the biggest financial institutions. Two of the five largest custodians are also within the top 10 asset managers.

The concentrated nature of the Brazilian investment funds industry is driven by the relationship between investment funds and the financial institutions that promote them. These institutions and/or their affiliates act as manager, fiduciary administrator and custodian to the investment funds. They also act as distributor of the investment funds through their extensive bank branch networks. In addition, institutional investors, such as pension funds and insurance companies, have significant holdings in investment funds. These institutional investors are often within the same financial conglomerate as the investment fund and its fiduciary administrator, asset manager and/or custodian. According to the Brazilian authorities, the proportion of pension funds' and insurance companies' total financial assets held via investment funds has grown from 57% in 2006 to 64% in 2014 and 61% in 2008 to 83% in 2014 respectively.

Regulatory and supervisory framework

Regulatory framework: The CVM is responsible for the regulation of the investment fund industry within the policy settings defined by the CMN (see Annex 1). CVM has the power to make rules, supervise and sanction operators within the securities markets. All investment funds must be registered with CVM. Where the asset manager is part of a banking conglomerate, the BCB is responsible for verifying management and risk control mechanisms of asset managers and the segregation between fund administration and management of the administering institution; in such cases, the asset manager is subject to oversight by both the BCB and CVM. In addition, the Brazilian Financial and Capital Markets Association (ANBIMA) functions as a voluntary self-regulatory organisation for investment funds through the adoption of codes by its members and its ability to impose fines (see below).

Investment funds are governed under a number of Instructions issued by CVM. Instruction 555/14 is of particular relevance since it governs a type of fund that covers 90% of the NAV of the investment funds sector. The instruction includes provisions regarding portfolio composition,⁵² liquidity management,⁵³ custody,⁵⁴ the use of leverage and disclosure obligations. CVM has also issued specific instructions for the various types of non-555 Funds.⁵⁵ Investment funds are also subject to other instructions including, for example, with respect to related party transactions.⁵⁶

⁵¹ According to ANBIMA, the five largest asset managers as of July 2016 were Banco do Brasil (21%), Bradesco (17%), Itau-Unibanco (16%), Caixa (7%) and Banco Santander (6%).

⁵² Instruction 555/14 Articles 89, 95, 98, 102 and 103.

⁵³ Instruction 555/14 Article 91.

⁵⁴ Custodians are regulated separately under Instruction 542.

⁵⁵ These are Instruction 356/01 for Asset Backed Securities Funds; Instruction 444/06 for Non-standard Asset Backed Securities Funds; Instruction 472/08 for Real Estate Investment Funds; Instruction 359/02 for Exchange Traded Funds; and Instruction 391/03 for Private Equity Funds.

⁵⁶ Instruction 475/08 and Instruction 514/11.

Investor liability in investment funds is unlimited. Thus, if an investment fund is leveraged, investors could lose more than they have invested and could be asked to provide additional monies where an investment fund has incurred losses in excess of the investors' investments. Leveraged funds are required to make disclosures to investors regarding their use of leverage.

Brazilian investment funds are subject to a rule that all transactions must take place at market value. CVM does not impose specific rules on the level of related party transactions beyond the general 20% single entity investment limit, for example between an investment fund and a bank in the same group. It monitors compliance with regulatory limits on portfolio concentration for all investment funds and the pricing of assets within investment fund portfolios. It checks the adequacy of provisions for probable defaults on credit assets purchased by asset backed securities investment funds and analyses investment fund documents to ensure that they have adequate policies and procedures to address conflicts of interest.

Supervisory framework: The CVM is entrusted with broad supervisory powers over the asset management industry, including the power to conduct on-site examinations, investigate illegal acts, suspend or cancel any registrations and apply penalties to any persons committing violations. In addition and specific to investment funds, CVM has the power to prohibit market participants from performing any activities that CVM considers to be harmful for normal market functioning; however, CVM notes that it has not had to use this power to date. Minor regulatory breaches are dealt with by direct communication with the related market participant and establishment of a deadline to implement adjustments, and application of regulatory fines. Sufficiently relevant breaches can trigger stronger actions, including temporary revocation of the authorization to operate or disqualification, up to a maximum period of 20 years.

Within the CVM, the Office of Institutional Investors Supervision is responsible for preparing a Risk Based Supervision (RBS) Plan (approved by the CVM Board) for the asset management industry, which includes the framework for both offsite and on-site supervision.⁵⁷ The RBS Plan identifies targets for surveillance on a two-year basis using criteria such as size and interconnectedness of the different service providers related to the investment funds, as well as the class and investment policy of the investment funds. The CVM and BCB also organise joint on-site inspections on financial institutions that administer investment funds.

Off-site supervision focuses on investment fund documents and information disclosed, particularly to investors; daily assessment of the industry wide and individual fund liquidity levels; investment fund leverage; and exposure to different risk factors and diligence levels on credit asset purchases. On-site supervision focuses on assessing the structure of the operator of the investment fund, including staff, systems, controls and routines for management of assets; compliance arrangements; conflicts management; and 'Chinese walls' and risk management arrangements.

Regulatory reporting and public disclosures: Fiduciary administrators of 555 Funds are required under Instruction 555/14 to provide specified information to CVM on a daily,

⁵⁷ The approved RBS Plan for 2015-16 is available at http://www.cvm.gov.br/menu/acao_informacao/planos/sbr/bienio_2015_2016.html (in Portuguese only).

monthly, annual and ad hoc basis in XML format via an electronic filing system maintained by CVM (CVMWEB).⁵⁸ This information includes:

- daily report on the value of a share in the investment fund, the value of applications and redemptions received, the number of investors, an estimate of the cash flows required to meet expected redemptions within the redemption period of the investment fund and the total amount of liquid assets of the investment fund that can be turned into cash within the redemption period;
- monthly report (within 10 days of month-end) on, among other things, a trial balance, portfolio composition (including detail on individual assets, maturity profiles and funding concentrations) and the profile of investors, one day value-at-risk (VaR) as a percentage of NAV, average portfolio term, total outflows and inflows related to off-shore assets, results of primary risk factors' stress tests, total notional value of all OTC derivatives contracts, data on the three largest counterparties for non-centrally cleared OTC transactions, percentage of NAV of assets issued by related parties, fees, returns, redemption periods and leverage limits;⁵⁹
- changes in circumstances within 5 days of the change;
- annual accounting statements accompanied by the independent auditors' report, to be provided within 90 days of the close of the reporting period; and
- standard form containing details of the main characteristics of the investment fund that are not otherwise provided in a structured way in other documents (e.g. management fee, performance fee, benchmark for the investment fund).

Non-555 Funds are also required to provide CVM with information, including portfolio composition, quota holder profiles and annual accounting statements, the specifics of which vary depending on the type of investment fund. Most of this information is not required to be provided in XML or another tagged format. CVM is considering whether to require non-555 Funds to provide information in a tagged format and has entered into an agreement with BM&F Bovespa to provide information to CVM on real estate funds in a tagged format from October 2016. Fiduciary administrators of asset-backed securities investment funds are also required to provide information on credit securities to the BCB on a monthly basis,⁶⁰ which feeds into the Credit Information System (SCR) maintained by the BCB (see section 2). CVM also has access to SCR information on credit markets and assets for its supervisory purposes.

To assist in monitoring investment fund leverage, CVM obtains information regarding exchange traded derivatives from BM&F Bovespa on a weekly basis and daily information on OTC derivatives from CETIP (see below).

⁵⁸ A failure to provide this information may result in a daily fine of R\$500,000.

⁵⁹ There are some differences in the information required to be provided by open-ended and closed-end investment funds.

⁶⁰ Information is required to be provided under Instruction 504/2011.

All of this information and associated analysis may be exchanged between CVM and BCB in accordance with their bilateral agreement.⁶¹ In terms of regular information exchange, BCB obtains a range of information to support its supervisory purposes, including risk monitoring. On a daily basis, CVM provides BCB with information about share value, subscriptions, redemptions and NAV of investment funds. On a monthly basis, CVM provides BCB with information about the interconnectedness of investment funds, the investor profiles for each investment fund and the total amount invested by investment funds in stocks. BCB shares with CVM its assessment of risks in the investment funds sector based on the information it receives, including from sources other than CVM.

CVM monitors the quality of data provided by funds through off-site analysis (e.g. liquidity assessments and comparing information against data received from other sources, such as BM&F Bovespa) and verification of information during on-site inspections.

CVM publishes on its website some of the information it receives from 555 Funds and non-555 Funds.⁶² This includes daily information for individual funds on number of investors, NAV and cash inflows and outflows. Monthly information available from the CVM website includes a trial balance, portfolio composition (maturity profiles and funding concentrations) and the profile of investors. Annual information regarding the audited financial statements and performance is also made available on CVM's website. CVM does not publish information that it considers potentially sensitive, such as VaR, liquidity conditions, stress test results or sensitivity analysis about the value of interests in investment funds.

The fiduciary administrator of an investment fund is required to disclose to investors in the offering document for the investment fund a description of the risk management policies and methods used to mitigate risks to which the investment fund is exposed, including liquidity risks.⁶³ In addition, for open-ended investment funds that are not exclusively directed to qualified or professional investors, the investment fund's fact sheet includes both the maximum limit that the investment fund may leverage in relation to its equity if there is such a limit and whether the use of derivatives is intended only for hedging purposes.⁶⁴

There are no specific requirements for an investment fund to disclose its liquidity position on a periodic basis. However, fiduciary administrators are required to publish details of the portfolio of the investment fund on a monthly basis, including information on the margins deposited on behalf of the investment fund to guarantee any derivatives exposures on BM&F Bovespa. In addition, fiduciary administrators are required to publish a monthly risk report that

⁶¹ CVM and BCB have a bilateral agreement regarding information sharing, proprietary systems access, joint activities coordination, prior considerations in regulatory updates and derivative contracts admission to being traded and exchanges and organized markets – see <http://www.cvm.gov.br/export/sites/cvm/convenios/anexos/BancoCentral.PDF> (in Portuguese only).

⁶² Information on individual investment funds can be found at <http://sistemas.cvm.gov.br/>.

⁶³ Instruction 555/14, Article 41, Item VII.

⁶⁴ Private equity funds, asset backed securities funds, real estate funds and short-term, simple foreign debt and referenced fixed income funds may only use derivatives for hedging purposes. Fixed income funds that do not fall in one of the listed subcategories, as well as equity, multimarket and foreign exchange funds, may use derivatives for other purposes.

discloses the total notional value of all derivatives traded in the CETIP clearing system.⁶⁵ Changes in exposures can also be monitored by investors via the publication of this information.

The current disclosure arrangements have been in place since 2011. CVM is not planning any material changes to the disclosure regime currently as it believes that the information disclosed is sufficient to ensure that investors can perform reasonable assessments of the liquidity and other aspects of an investment fund.

Steps taken and actions planned

A notable feature of the investment funds sector is the large exposures to bonds in general (82% of aggregate NAV) and to Brazilian government bonds in particular (62% of aggregate NAV).⁶⁶ The principal reason is the historical high level of the overnight lending rate (Selic) that, according to the BCB, has fluctuated between 7.25% and 14.25% over the last 10 years and is currently at 12.25%. This rate of return provides relatively little incentive for investors to search for other high-yielding options (e.g. equities), particularly since government bonds have an active secondary market and are viewed as low risk investments by local investors. In addition, government bonds are generally short-term and floating rate, which mitigates interest rate risk.

Investment funds' exposure to government bonds takes place both through direct investments as well as by making extensive use of reverse repurchase agreements (reverse repos), whereby funds lend cash overnight – typically to banks – and receive such bonds as collateral. The rate of return on reverse repos is typically close to that achieved by directly holding government bonds. As a result, a large part of investment funds' assets are invested in reverse repos (most of which are collateralized by Brazilian government bonds) as a means to invest this cash on a short-term basis while achieving high rates of return and maintaining high levels of liquidity.

Two structural vulnerabilities of investment funds that may raise financial stability concerns are leverage and the mismatch between the liquidity offered by an open-ended investment fund through daily redemptions versus the liquidity of its underlying investments. A low interest rate environment can drive investment funds to search for yield, which may lead to an increase in their use of leverage and investments in less-liquid instruments. While the current high interest rate environment in Brazil partly mitigates these concerns, it is important that the regulatory framework be designed to foster the resilience of the investment funds sector in all economic circumstances.

Leverage: Brazilian investment funds are not permitted to borrow. However, they can generate leverage through the use of financial derivatives as well as securities lending and repos.⁶⁷

⁶⁵ This information is segregated into five risk factors (stock, exchange rate, exchange coupon, interest rate and others) and long or short positions.

⁶⁶ According to the authorities, as of August 2016 investment funds held around 11% of the total non-financial corporate debt (which was around R\$620 billion), 43% of the total bank debt and CDs (which was around R\$947 billion) and 42% of the total Brazilian public debt (which was around R\$2,995 trillion).

⁶⁷ The level of engagement in stock lending and repos is low. According to the CVM, as of 31 December 2015 5% of investment funds engaged in securities lending, while securities lent represented 0.5% of the total value

Brazilian investment fund regulation does not define leverage and does not impose a leverage limit on investment funds. An investment fund may, however, only carry out transactions exceeding its net asset value if this fact, including the maximum leverage level, is included in its investment policy described in its bylaws. In addition, for open-end funds that are not exclusively directed to qualified or professional investors, the investment fund's fact sheet must clearly state the maximum limit that the investment fund can leverage in relation to its equity (if there is such a limit) and whether the use of derivatives is intended only for hedging purposes.

The extent to which Brazilian investment funds can become leveraged is limited *de facto* by the margin requirements imposed by BM&F Bovespa (in its role as CCP)⁶⁸ and portfolio concentration limits to issuers and types of financial instruments under the relevant CVM Instructions, such as Instruction 555/14. Certain types of fixed income funds are only permitted to use derivatives for hedging purposes, and in some cases there are limits on the level of derivatives even when used for hedging.⁶⁹

To monitor leverage and exposure, CVM relies on information provided weekly by BM&F Bovespa on margins and daily by CETIP on all OTC derivative contracts where an investment fund is a party to the contract. The information from BM&F Bovespa includes, for each investment fund, the total required margin by CCP, total posted margin by CCP, total notional value of exposure to foreign exchange and stock index derivatives and the maximum theoretical margin in each risk factor.⁷⁰ Information provided by CETIP includes, for each investment fund, the notional value of the financial exposure to each of the risk factors as well as details of all derivative contracts where an investment fund is a counterparty. CVM uses this information to analyse margin and collateral and, when there is no margin and collateral, the notional value of these exposures.

The main measures used by CVM to monitor leverage and exposure are set out in Table 4 below. CVM has identified the risk ratio as the best available measure for monitoring leverage, as it takes into account the financial exposure and the risk of maximum loss in a stressed scenario (as calculated by BM&F Bovespa), taking into consideration all derivatives in the portfolio of the investment fund.

of Brazilian investment funds. Similarly, as of 31 December 2015, 1.5% of investment funds engaged in stock repos, while the value of such repos was 1.2% of the total value of Brazilian investment funds.

⁶⁸ BM&F Bovespa calculates margin requirements on the basis that the margin is sufficient to cover the settlement cost at market value and the potential increase of this cost. This is assessed by stress testing methodologies under different scenarios and includes assessing maximum potential loss.

⁶⁹ Short-term, referenced, simple, and foreign debt fixed income funds may only use derivatives for hedging purposes. In addition, referenced fixed income funds may only use derivatives to hedge spot positions, up to their value. For foreign debt fixed income funds, there is a limit of 10% of assets for hedging operations.

⁷⁰ Risk factors relate to the main asset class of the investment fund, e.g. foreign exchange, interest rates and equities.

Table 4: Measures used by CVM to monitor leverage and exposure of investment funds

BM&F Bovespa	CETIP
<ul style="list-style-type: none"> • Risk Ratio = Required Margin/NAV • Net Notional Exposure/NAV (for Stocks/ETF) • Module Notional Exposure/NAV (for Stocks/FX) • Maximum Theoretical Margin/NAV (for main risk factors) 	<ul style="list-style-type: none"> • Net Notional Exposure/NAV • Module Notional Exposure/NAV

CVM reports that, as of June 2016, there is a low level of exposure for investment funds in the BM&F Bovespa derivatives market, with a risk ratio of 1.6%. There are 2,200 investment funds with derivative positions in this market. Of these funds, 34 (32 multimarket and 2 stock) have a deposited margin of more than 30% of their respective NAV.

An investment fund may only gain exposure to OTC derivatives if they are registered with CETIP. There are 200 investment funds with exposure to OTC derivatives registered with CETIP. Net notional exposure amounts tend to be higher, reflecting a number of investment funds in which financial institutions are the unique investors.

CVM notes that, as of 31 December 2015, approximately one-third of the investment funds used leverage instruments and that 59% of these were multimarket funds. The NAV of these funds represented approximately 51% of the investment funds sector, and included larger fixed income funds without any subcategory.

In 2016, CVM conducted an internal study on leverage that dealt with issues such as the extent to which Brazilian investment funds use leverage and the ways in which leverage is defined and calculated in other jurisdictions, for example the European Union and the United States. CVM intends to issue a public consultation on rules about a definition of leverage and leverage limits for investment funds.

Liquidity risk management: Instruction 555/14 includes provisions aimed at addressing liquidity risk management.⁷¹ These requirements include: diversification limits; liquidity management processes and policies; specific regulatory reporting on liquidity management; disclosure obligations; alignment of fund assets, concentration limits to issuers and financial instruments, investment strategies and redemption rights and stress testing obligations. In addition, CVM provided guidance to market participants through answers to public hearing comments on relevant Instructions, which further clarified the roles of the fiduciary administrator and asset manager in relation to liquidity management.

Fiduciary administrators and asset managers of 555 Funds are required to have in place policies, procedures and internal controls to ensure compatibility between the portfolio of an investment fund and the redemption periods⁷² outlined in the investment fund's documents and

⁷¹ Instruction 555/14 replaced Instruction 409/04, which was amended in 2011.

⁷² At present, the average (unweighted) redemption period in business days for each class of 555 Funds is 0.63 days (foreign exchange funds), 6.29 days (fixed income funds), 8.56 days (multimarket funds) and 14.26 days

the liabilities of the investment fund. These policies, procedures and controls are required to take into account:

- the liquidity profile of the assets of the investment fund;
- the liabilities of the investment fund, including margin requirements, collateral and other obligations;
- expected levels of redemptions under ordinary conditions, calculated with consistent verifiable statistical criteria; and
- the ownership structure of the investment fund.

Fiduciary administrators and asset managers are also required to disclose liquidity management information to investors, including disclosure of the methods used by the fiduciary administrator to manage liquidity risks.

Fiduciary administrators are required to submit the portfolio of the investment fund to periodic stress tests that take into account exceptional redemption pressures, asset liquidity profiles and the ownership structure of the 555 Fund. The results of these stress tests are provided to CVM upon request. It is up to individual fiduciary administrators to determine the methodology for the stress test having regard to the general regulatory requirements. The frequency of these stress tests is up to the discretion of the fiduciary administrator, but must take into account the characteristics of the investment fund, historical patterns of stressed scenarios and current market conditions. If the investment fund is a fund-of-funds, the fiduciary administrator and asset manager of the fund-of-funds are required to assess jointly the liquidity profiles of the underlying funds. There is no obligation on fiduciary administrators to conduct coordinated scenarios to stress test the liquidity of their funds.

CVM uses the information provided by 555 Funds to monitor liquidity of open-ended investment funds.⁷³ On a daily basis, CVM monitors liquidity under normal market conditions based on information provided by the fiduciary administrator including:

- Liquid Assets (LA) – the total value of assets that can be transformed into cash in current market conditions within the redemption period for the investment fund; and
- Predicted Cash Outflow (PCO) – the total value of predicted cash outflow to happen within the redemption period for the investment fund.

Where an open-ended 555 Fund (other than a fund-of-funds) has a PCO greater than its LA, CVM will contact the fiduciary administrator for an explanation.

(stock funds). Provided the investment fund is open-ended, an investor may request a redemption during any working day, and the request is effected on the same day if made before 2pm

⁷³ The CVM's Office of Risk and Research has published two working papers in 2015 that provide information on how the CVM assesses liquidity risk for investment funds – see http://www.cvm.gov.br/export/sites/cvm/menu/acao_informacao/serieshist/estudos/anexos/Teste-de-Estresse-de-Liquidez-para-Fundos-de-Investimento_vfinal.pdf and http://www.cvm.gov.br/export/sites/cvm/menu/acao_informacao/serieshist/estudos/anexos/Ativos_Liquidos_relato_vfinal.pdf (in Portuguese only).

On a monthly basis, CVM monitors liquidity under stressed scenarios using a benchmark Liquidity Index to estimate the stressed scenario redemption for each investment fund and the industry as a whole (see Box 5). The Liquidity Index was developed by CVM based on over 10 years of data on redemptions in 555 Funds. Where investment funds do not meet the Liquidity Index, they are required to provide CVM with information about their liquidity. CVM also has access to non-555 Fund portfolio information and can monitor the liquidity profiles of these investment funds, although they are not currently the focus of supervision.⁷⁴

Box 5: CVM's liquidity monitoring under stressed conditions

Each month CVM undertakes a review of the liquidity of individual 555 Funds under stressed redemption conditions. The review involves the calculation of a Liquidity Index for each open-ended 555 Fund based on information CVM collects. The Liquidity Index of an investment fund is calculated as follows:

$$\text{Liquidity Index} = \text{Liquid Assets} / (\text{NAV} \times \text{Accelerator})$$

To calculate the Accelerator, CVM undertook a review of roughly 10 years of daily net inflow data and constructed an empirical distribution via a Monte Carlo simulation. From this empirical distribution, CVM extracted for each category of 555 Funds the value of net outflow that is associated with a 1% probability (stressed scenario). The following table summarises the Accelerator associated with a 1% probability within each category of funds:

Class	Number of quota-holders		
	< 20	21 < 2000	> 2000
Foreign Exchange	5.3%	7.7%	Not applicable
Foreign Debt	8.8%	4.4%	Not applicable
Stocks	2.0%	3.1%	1.4%
Short-term	31.5%	21.3%	4.6%
Fixed Income	10.2%	7.9%	3.1%
Multimarket	4.8%	5.2%	1.8%
Referenced	19.8%	11.6%	5.0%

Whenever an investment fund presents a Liquidity Index < 1, it means that its Liquid Assets (as defined above) are insufficient to meet a redemption according to the stressed scenario (in this case, a net outflow as big as the one associated with the 1% probability threshold from the empirical distribution).

After calculating the Liquidity Index for every open-ended 555 fund (excluding funds-of-funds), CVM sorts investment funds by NAV and divides them into categories according to the following criteria:

Group	Definition
A	NAV < Average Industry NAV - 1 standard deviation
B	Average Industry NAV - 1 STDD < NAV < Average Industry NAV + 1 STDD
C	NAV > Average Industry NAV + 1 STDD

CVM's monthly, risk-based supervisory plan states that the investment funds in Group A with the three smallest Liquidity Index results must be warned of the result of the stress test and asked to provide a response. The monthly risk-based supervisory plan also states that the investment funds with the seven

⁷⁴ Among non-555 Funds, only ETFs and some asset-backed securities funds are open-ended. Liquidity monitoring of the latter was included in CVM's 2013-2014 and 2015-2016 RBS Plan. No problems were found over this 4-year period, given the extended redemptions periods (from 30-90 days to 1-2 years) and the fact that most of these funds are used for cash flow management of large economic groups that own the shares.

smallest Liquidity Index results in each of Group B and C must be warned of the result of the stress test and asked to provide a response, including the results of the latest liquidity stress tests undertaken by the fiduciary administrator for analysis.

Open-ended 555 Fund documents may also make provision for redemption notice periods and redemption fees and, in the case of restricted funds, there may be provisions for redemptions in kind. In addition, it is possible under the current regulations for the fiduciary administrator to suspend subscriptions and redemptions of an investment fund if there is a market closure and/or exceptional portfolio assets' illiquidity.⁷⁵ The fiduciary administrator must immediately disclose the closure of an investment fund to members and CVM.

A fiduciary administrator is required to obtain investor approval through a general assembly before utilising tools other than suspension of redemptions to address liquidity management issues. Where the investment fund remains closed for more than five consecutive days, the fiduciary administrator must call a meeting of investors to be able to deploy post-event liquidity management tools allowed in the regulations.⁷⁶ These options include the substitution of the fiduciary administrator or asset manager or both, reopening the investment fund, redemption gates, redemption-in-kind, side pocket arrangements or liquidation of the investment fund. In addition, the fiduciary administrator can request approval from CVM to split the investment fund before re-opening for redemptions until the members' meeting is held.

There have been five cases in recent years where an investment fund has been closed to redemptions. In at least two of these cases that occurred in early 2016, members' meetings were called. In one case, members voted to keep the investment fund closed until liquidity could be normalised. In the other case, members voted to replace the fiduciary administrator. The CVM notes that the requirement for an investor meeting has not proved, to date, to be an obstacle to implementing solutions to liquidity shortages. The CVM also notes that there are no actions planned to amend the aforementioned liquidity risk management requirements.

Interconnectedness: The FSAP noted that Brazilian investment funds and banks are highly interconnected through repo transactions and funds' investments in bank deposits, certificates of deposit (CDs) or bonds. It further noted that although this represents a high degree of exposure concentration for investment funds, repos with banks have low risk because they are collateralized by government bonds and, as a result of this collateralization, these transactions do not represent a major source of funding risk for banks. However, the FSAP stated that investment funds' holdings of bank CDs, deposits or bonds do expose the investment funds to counterparty risk and that, as the availability of financial instruments improves over time, consideration should be given to lowering the 20% single exposure limit. The existence of this

⁷⁵ This includes situations where redemption requests exceed existing liquidity, or situations that could imply a change in the investment fund's or members' tax regime, to the detriment of the members. In these circumstances, the fiduciary administrator will declare the investment fund shut to redemptions (Article 39, Instruction 555/14). CVM does not receive advance notice prior to an investment fund suspension of redemptions, but immediately after the investment fund is shut (same day).

⁷⁶ Under article 71 of Instruction 555/14, the resolutions at these meetings are passed by a simple majority of the investors at the meeting. CVM notes that, where meetings have been called, on average more than 50% of the investors have attended the meeting.

limit means that an investment fund's aggregate exposure to a single financial institution, through bank deposits and bonds, cannot exceed 20% of the investment fund's NAV.⁷⁷

As of December 2015, banks' liabilities to investment funds accounted for 17% of banks' total assets, or approximately 40% of the total NAV of the investment fund sector. According to the CVM, around two-thirds of these investments were repurchase agreements backed by federal government bonds, with the remaining made up of bank CDs and financial notes.⁷⁸ On the investment funds' liability side, bank investments in investment funds account for BRL 150 billion (i.e. around 5% of 555 Funds' assets). Moreover, as previously noted, there are strong interconnections in terms of ownership, with the largest fiduciary administrators, asset managers and custodians forming part of bank-owned financial groups.⁷⁹

The BCB monitors interconnectedness between the investment funds and the banking sector through analysis of data on institutions' positions and transactions in TRs. This allows the BCB to map relationships and assess risks across institutions, which are discussed in meetings of its internal financial stability committee (see section 2). This information could be useful in circumstances where problems with an entity in a financial group have reputational spill-overs that could result in large redemptions from investment funds sponsored by that group.

The levels of concentration in the investment funds sector give rise to potentially significant 'step-in risk' for banks that manage or administer such funds.⁸⁰ Despite prohibitions on fiduciary administrators and asset managers acquiring shares in the investment funds they administer,⁸¹ in recognition of the fact that a bank may step in to protect its reputation, the BCB has started monitoring the potential exposure of banks to this risk. In particular, the BCB has developed an Expanded Liquidity Ratio that takes into consideration the potential impact on the financial institution if it stepped in to support an investment fund or funds. Monitoring of step-in risk is still under development by the BCB's off-site supervision department. Shortly, the Expanded Liquidity Ratio will be made available to guide on-site supervision by the BCB and CVM. The BCB provides the results of its analysis to CVM under their bilateral agreement, and CVM is working with the BCB to develop tools to assess this risk.

⁷⁷ Repurchase agreements are backed by collateral and therefore do not count in an investment fund's single exposure limit.

⁷⁸ The relatively high interconnectedness between investment funds and banks in Brazil is also shown in the FSB's "Global Shadow Banking Monitoring Report 2015" (ibid).

⁷⁹ It should be noted that there are no guarantees (whether explicit or implicit) to investors on the performance provided by administrators, asset managers, or any other fund's service providers.

⁸⁰ Step-in risk refers to the risk that a bank will provide financial support to an entity beyond, or in the absence of, its contractual obligations should the entity experience financial stress. The objective of work in this area is to mitigate potential spillover effects to banks. See "Identification and management of step-in risk – second consultative document" by the BCBS (March 2017, <http://www.bis.org/bcbs/publ/d398.pdf>).

⁸¹ CMN Resolution 3334 prohibits fiduciary administrators and asset managers from acquiring directly or indirectly shares in investment funds they administer, except where the investment is for seed capital purposes up to \$R10m for less than one year, where it is an exclusive fund where the investor is the financial institution itself, or where it is a closed-ended fund.

The CVM has put in place rules governing conflicts of interest and related party transactions for investment funds, and monitors them through reporting and onsite inspections.⁸²

Role of industry body: The Brazilian Financial and Capital Markets Association (ANBIMA) is a non-profit legal entity organised as a civil association that seeks to represent the different types of institutions that are active in Brazilian capital markets, including asset managers and fiduciary administrators, brokerage firms, universal banks and investment banks. ANBIMA's mission is to strengthen the representation of the industry in order to support the development of capital markets in Brazil so they can finance the social and economic development of the country and influence global markets.⁸³

ANBIMA is not a statutory self-regulatory organization and is not overseen by CVM. However, it plays a quasi-regulatory role, since it can discipline its members and impose fines. ANBIMA represents close to 90% of the Brazilian financial and capital markets participants. Forty-one percent of ANBIMA's members are asset managers and fiduciary administrators.

ANBIMA has developed voluntary self-regulatory arrangements for investment funds managed by its members, included in the *ANBIMA Code of Regulation and Best Practices of Investment Funds* (Funds Code).⁸⁴ Members of ANBIMA adopted the Funds Code in 2000. The Funds Code has since been revised several times and currently includes provisions such as mark-to-market pricing obligations and liquidity rules for credit funds. ANBIMA maintains a number of other codes relevant to investment funds, including in relation to private equity and venture capital funds, as well as codes dealing with custody, fund accounting and control, and retail distribution. ANBIMA has established an investment funds classification system for the industry. ANBIMA also collects and makes available on its website aggregate industry information (based on reporting by its members), while CVM publishes fund-specific data.

CVM has entered into four bilateral agreements with ANBIMA. These agreements provide for the development of an information technology system for public offerings; a simplified procedure for registering public offerings;⁸⁵ mutual utilisation of settlement agreements and applied penalties, as well as information sharing; and the development and publication of a hedge fund index.

Discussions are currently underway between ANBIMA and CVM to enter into two further agreements. The first is to enable submissions for the authorisation of a fund service provider to be eligible for fast tracking through CVM's registration processes where the submission has been pre-reviewed by ANBIMA. The second agreement relates to the collection of information from the investment funds sector by ANBIMA on behalf of CVM. The information would then be made available to CVM and, where appropriate, to the industry generally. The agreement is

⁸² These include a fiduciary duty imposed to the point-of-sale structure of market participants; segregation of asset management activities within banking conglomerates; and disclosure requirements on fund administrators to specify all the operations with related parties on the financial statements of the fund.

⁸³ See http://www.anbima.com.br/en_us/institucional/.

⁸⁴ See http://www.anbima.com.br/data/files/74/46/3F/49/A4C085100B51AF7568A80AC2/Code-of-Regulation_1_.pdf.

⁸⁵ Under this agreement ANBIMA undertakes a review process regarding draft documentation prepared by issuers. Once that documentation has been cleared by ANBIMA, it is eligible for review under the CVM's fast-track process.

being proposed to simplify reporting requirements as fiduciary administrators are reporting information to a variety of sources (in addition to CVM) and to reduce costs through a single reporting system.

Lessons learned and issues to be addressed

The Brazilian authorities have continued to strengthen the regulatory and supervisory framework for investment funds in recent years. Instruction 555/14 included comprehensive provisions regarding portfolio composition, liquidity management, custody, the use of leverage and disclosure obligations that are applicable to funds representing 90% of the NAV of the sector. Extensive reporting of investment fund information has put CVM in a strong position to monitor and assess liquidity risk on a daily and monthly basis. CVM has developed its own liquidity indexes based on information provided to it over the past 10 years and uses those indexes to benchmark liquidity in investment funds. In addition, fiduciary administrators of 555 Funds are required to subject their investment funds to regular liquidity stress tests. Work is ongoing to examine the need for leverage definitions and limits in this sector. The BCB has also begun to monitor risks arising from interconnectedness between investment funds and other sectors, such as step-in risk.

As is the case in other countries, however, further steps can be taken to strengthen the regulation and supervision of investment funds in order to ensure the resilience of this sector under a broad range of economic conditions. This includes, in particular, enhancing the monitoring of leverage and, as appropriate, introducing additional limitations on leverage; facilitating more rapid deployment of exceptional liquidity management tools and considering whether to broaden the range of available tools; and reconsidering the role of ANBIMA in the investment fund sector's oversight.

Leverage: The use of leverage by investment funds can create or amplify risks to the financial system through direct and indirect channels. For example, it can increase the risk of an investment fund encountering financial distress, which could be transmitted to its counterparties and then to the broader financial system. A leveraged investment fund can also spread risks through interconnections with its investors and its funding of other financial intermediaries. Leveraged investment funds are also more sensitive to adverse movements in asset prices. Margin calls and haircuts may force them to sell assets in order to obtain liquidity and deleverage. This can affect other market participants through declining asset prices and increased margin calls.⁸⁶

At present, there is no definition of leverage in Brazilian investment fund regulation. While investment funds are prohibited from borrowing and subject to other relevant restrictions, such as requirements to establish and disclose maximum permitted leverage and restrictions on the use of derivatives, there is no express numerical leverage limit for those funds. Leverage is controlled indirectly through conservative margin requirements imposed by BM&F Bovespa and limits on portfolio exposure to issuers and financial instruments. The absence of an express numerical leverage limit does not appear to the authorities to have been a source of concern to date. Due principally to the high interest rate and the consequent high levels of investment in

⁸⁶ See the January 2017 FSB "Policy Recommendations to Address Structural Vulnerabilities from Asset Management Activities" (ibid).

fixed income instruments (particularly government bonds), investment funds do not need to engage in a search for yield in high-risk products or take on leverage to improve returns.

However, this situation may change. As noted in the FSAP, Brazil may move away from the high interest rate-short duration equilibrium over time. As this shift happens, the FSAP stresses that the process will require “watchful monitoring, as the convergence to a lower level of interest rates will intensify the “search for yield” that could lead to a build-up of risk if assets are under-priced and under-provisioned”.

CVM has begun to analyse the use of leverage by investment funds in Brazil and the ways in which leverage is defined and calculated in other jurisdictions. It intends to issue a public consultation on rules about a definition of leverage and leverage limits for investment funds. Given the possibility that Brazilian investment funds may become more leveraged in the future, it is appropriate that CVM is undertaking this work now. Building on the FSB policy recommendations and follow-up work by IOSCO on leverage within investment funds, CVM should complete this work and develop regulatory definitions and measures for leverage of investment funds. It should also consider introducing additional limitations (e.g. numerical limits) on leverage for particular types of funds as appropriate.

At present, CVM receives information from BM&F Bovespa and CETIP, which it uses to calculate exposures. Given the role that leverage can play in creating or amplifying risks to the financial system, CVM should collect information on leverage directly from fiduciary administrators of investment funds – who are ultimately responsible for managing fund leverage – and implement arrangements for the monitoring of leverage in a consistent manner across the investment funds sector. Information provided by BM&F Bovespa and CETIP would be useful in verifying information received directly from fiduciary administrators.

- ***Recommendation 4: CVM should develop regulatory definitions and measures for leverage of investment funds, monitor leverage on an ongoing basis through information provided by fiduciary administrators, and consider introducing additional limitations on investment fund leverage as appropriate.***

Liquidity risk management: The FSB has identified the potential mismatch in open-ended investment funds between the liquidity of portfolio holdings and daily redemption of investment fund shares as a key structural vulnerability from asset management activities. It noted that although historical evidence suggests that non-money market open-ended investment funds have not generally created global financial stability concerns in recent periods of stress and heightened volatility, developments in the sector and the increasing holdings of fixed income assets by investment funds suggest that risks may have increased in recent years.⁸⁷

Liquidity risk management plays an important role in addressing this vulnerability. A wide range of policy measures and tools currently exist at the international level to mitigate the liquidity risk associated with open-ended investment funds. Broadly, these are divided between

⁸⁷ See the January 2017 FSB “Policy Recommendations to Address Structural Vulnerabilities from Asset Management Activities” (ibid).

pre-emptive measures and post-event measures.⁸⁸ The use of these tools may address financial stability risk, including by allowing investment funds to await better functioning markets in order to conduct an orderly disposal of assets and reduce the risk of asset fire sales in the best interest of investors in those funds.

It is worth noting that the FSB's "*Policy Recommendations to Address Structural Vulnerabilities from Asset Management Activities*" are framed in the context of a low interest rate environment. This is not the environment that currently exists in Brazil. Many investment funds invest directly in Brazilian government bonds and have a substantial portion of their assets in cash, which they invest via overnight reverse repos at a rate of return that is typically close to that achieved by directly holding government bonds. Although liquidity risk management does not appear to be especially problematic at present, the authorities could usefully direct their attention to this issue before the high interest rate environment changes.

The liquidity of 555 Funds has been an area that has already received focus from CVM, with a number of measures being put in place to monitor potential liquidity risks. The recent IOSCO peer review on money market funds also found that Brazil had final implementation measures in place for seven of the eight areas of reform, including liquidity management.⁸⁹

However, current arrangements in Brazil limit the ability of fiduciary administrators to deploy post-event liquidity risk management tools without first receiving investor approval. The only such tool that can be deployed immediately and without investor consent is the temporary suspension of redemptions in exceptional circumstances. All other tools can be deployed only after a meeting of investors has been convened and their consent obtained. Lack of immediate access to such tools may have negative consequences, e.g. more limited ability to engage in an orderly disposition of assets. Further, consideration should be given to whether the decision about which tools to use should be placed solely in the hands of investors, since they may lack expertise in using the tools and (because of their investments in the investment fund) may have conflicts of interest in determining which tools to employ. International work in this area has found that many jurisdictions permit fund management companies to utilise a range of post-event liquidity management tools without the need for investor or supervisory approval.⁹⁰

CVM is of the view that requiring investors' approval to deploy measures to deal with liquidity shortages enhances transparency and constitutes an important accountability mechanism for fiduciary administrators and asset managers. In addition, CVM believes that investor meetings provide a useful way to align interests and decide in a consensual way on the steps necessary to restore adequate liquidity levels, and that fiduciary administrators and asset managers can remedy investors' potential lack of expertise through explanation of available options. CVM

⁸⁸ Pre-emptive measures are part of day-to-day liquidity risk management, and include internal risk management, stress testing, portfolio composition and diversification rules, swing pricing and setting appropriate redemption frequencies. Post-event measures are available to investment funds once market disruptions or other events result in significant outflows or the prospect thereof. These include temporary dealing suspensions, redemption gates, withdrawal limits, in-kind redemptions, side pockets and temporary credit facilities.

⁸⁹ See "Peer Review of Regulation of Money Market Funds: Final Report" (September 2015, <http://www.iosco.org/library/pubdocs/pdf/IOSCOPD502.pdf>).

⁹⁰ See IOSCO's report on "Liquidity Management Tools in Collective Investment Schemes: Results from an IOSCO Committee 5 survey to members" (December 2015, available at <http://www.iosco.org/library/pubdocs/pdf/IOSCOPD517.pdf>).

also notes that the requirement for an investor meeting has not proved, to date, to be an obstacle to implementing solutions to liquidity shortages.

Notwithstanding these points, the authorities should weigh the potential costs and benefits of the investor meeting requirement in a broad range of scenarios and consider whether this requirement should be modified or eliminated. In that regard, allowing fiduciary administrators to deploy post-event liquidity management tools at short notice and without investor consent would not preclude a requirement for a subsequent investor meeting to foster transparency and accountability and develop a consensus with respect to additional steps to be taken.

In addition, it should be noted that some liquidity risk management tools found in other jurisdictions are not currently available in Brazil. These include swing pricing, anti-dilution levies, short term borrowings and redemption gates. Making these tools available in Brazil has the potential to provide fiduciary administrators greater flexibility to manage liquidity risk in the manner most appropriate to the type of investment fund and investors in question.

Building on the FSB policy recommendations and follow-up work by IOSCO on liquidity mismatch of open-ended investment funds, CVM should consider permitting post-event liquidity risk management tools to be deployed by fiduciary administrators at short notice and without investor consent, and should assess whether to make available an increased range of both pre-emptive and post-event tools for liquidity risk management purposes.⁹¹ There may also be merit to consider whether certain post-event tools should require notification to CVM.

- ***Recommendation 5: CVM should: (a) consider allowing post-event liquidity risk management tools to be deployed at short notice without the approval of investors; and (b) assess the adequacy of existing liquidity risk management tools and consider whether to broaden the range of such tools available to investment funds.***

Role of industry body: ANBIMA has developed self-regulatory arrangements for investment funds managed by its members. Relying on the (voluntary) agreement of its members, ANBIMA has the ability to discipline its members for violations of its codes of conduct, e.g. through assessing fines. However, ANBIMA is not a statutory regulator: it is neither overseen by CVM nor does CVM have any jurisdiction over it. While ANBIMA issues its own industry guidance, that guidance is not reviewed or endorsed by CVM.

ANBIMA has entered into four bilateral agreements with CVM, which create a relationship between ANBIMA and CVM in relation to carrying out certain functions of CVM. Discussions are currently underway between ANBIMA and CVM to have ANBIMA collect investment fund data on behalf of CVM and pre-analyse registration requests by fund service providers. CVM notes that it would retain the authority to approve or deny these registration requests.

There may be efficiencies to be gained for CVM from expanding ANBIMA's role, in terms of costs from outsourcing the building and maintenance of the technology to support reporting

⁹¹ As noted in the January 2017 FSB "Policy Recommendations to Address Structural Vulnerabilities from Asset Management Activities" (ibid), "In considering the relative merits of different tools, authorities should take into account the effectiveness of each in slowing redemptions from funds that use them. In addition, authorities should consider potential spillover effects on other funds if the use of a post-event liquidity risk management tool in one fund is interpreted by investors as a signal of broader stress and thus may lead to more widespread redemptions from other funds. They should also consider, as appropriate, any operational difficulties to implementing various liquidity risk management tools and make efforts to reduce these difficulties".

systems and in terms of speeding up the service provider authorisation processes. At the same time, however, there are risks associated with involving a non-statutory private sector organisation (particularly one acting as a trade association) in a regulatory process. While these risks can to some extent be addressed through contractual arrangements, CVM should review and reconsider its existing and contemplated bilateral agreements with ANBIMA given CVM's lack of oversight authority with respect to ANBIMA.

The need for appropriate oversight of private bodies that act in an SRO capacity is highlighted in international standards. In its May 2000 report on a "*Model for Effective Regulation*,"⁹² IOSCO stresses the need for government oversight: "*Effective self-regulation must be defined within the context of government oversight. Government oversight is an essential element in the self-regulatory structure. Government oversight of SRO activities ensures that, among other things, all interests are given the proper consideration and voice in all regulatory activities. This oversight provides a system of checks and balances.*"

In addition, Brazil was found partly compliant with Principle 9⁹³ in the FSAP's 2013 assessment of the IOSCO *Principles and Objective of Securities Regulation* (ibid). The report noted that "*The partly implemented assessment is based upon the lack of governmental oversight of the ANBIMA... programs. In reaching this conclusion, it should be stressed that the program administered by ANBIMA appears to be sound and well constructed. What is missing is an appropriate level of oversight by a government regulator.*"

In this context, CVM notes out that the contemplated bilateral agreement with ANBIMA regarding data collection for investment funds (which CVM agrees is part of the regulatory process) will follow these guidelines: (1) CVM will retain broad supervisory powers regarding the scope of the agreement; (2) provisions will be included to eliminate any discontinuity in case the agreement ceases, whatever the reason; and (3) governance mechanisms and accountability measures will allow CVM to identify and mitigate or eliminate any conflict of interest situation. While these are helpful contractual provisions, they may not fully address issues raised by the fact that ANBIMA is an industry representative body rather than an SRO subject to CVM's oversight. Given the expansion of ANBIMA's role contemplated by CVM, it is important that CVM has the authority and ability to oversee ANBIMA in the way envisaged in IOSCO's report and consistent with the FSAP assessment.

- ***Recommendation 6:*** *CVM should review and reconsider its existing and contemplated bilateral agreements with ANBIMA, so that regulatory authority for investment funds is exercised by CVM or by a self-regulatory organisation that is subject to oversight by CVM and free from conflicts of interest.*

⁹² IOSCO SRO Consultative Committee (<http://www.iosco.org/library/pubdocs/pdf/IOSCOPD110.pdf>).

⁹³ Principle 9 states that "*Where the regulatory system makes use of Self-Regulatory Organizations (SROs) that exercise some direct oversight responsibility for their respective areas of competence, such SROs should be subject to the oversight of the Regulator and should observe standards of fairness and confidentiality when exercising powers and delegated responsibilities.*" See <http://www.iosco.org/library/pubdocs/pdf/IOSCOPD323.pdf>.

Annex 1: Framework for the oversight of the financial system in Brazil⁹⁴

Regulatory and supervisory framework

Regulatory structure: The Brazilian national financial system (SFN) was established and operates under the provisions of Law 4,595, issued on 31 December 1964, which created the National Monetary Council (CMN) and the Central Bank of Brazil (BCB). Table 1 sets out the SFN structure.

Table 1: The structure of the National Financial System (SFN)

Normative Bodies	Supervising Entities	Operators			
		National Monetary Council (CMN)	Central Bank of Brazil (BCB)	Financial institutions taking demand deposits	Other financial institutions Currency exchange banks
Securities and Exchange Commission (CVM)	Commodities and futures exchanges		Stock exchanges		
National Council of Private Insurance (CNSP)	Superintendence of Private Insurance (Susep)	Reinsurance companies	Insurance companies	Capitalization companies	Open pension funds
National Council for Complementary Social Security (CNPC)	National Superintendence of Complementary Pensions (Previc)	Closed pension funds			

The CMN is the highest decision making body of the SFN and is responsible for formulating monetary and credit policy, aiming at price stability and social and economic development. Its current structure is composed of: i) the Minister of Finance, as Chair of the Council; ii) the Minister of Planning, Development and Management; and iii) the Governor of the BCB. The BCB acts a permanent executive secretariat of the CMN, supporting its decision-making role and publicising its actions, known as CMN Resolutions. Policy proposals – most of which come from the BCB – are debated by a technical advisory body – Technical Commission on Currency and Credit (Comoc) – that also include the President of the CVM. This step ensures that the CMN Resolutions are effectively debated and represent a broader spectrum of agencies. The BCB organizes the monthly deliberative sessions and, in accordance with Law 4,595/1964, it is responsible for complying with and enforcing the decisions of the CMN.

⁹⁴ Based on information provided by the Brazilian authorities.

As shown in Table 2, all credit contracts are regulated by CMN, while the BCB is responsible for regulating and supervising credit operations granted by supervised financial institutions. The CMN also regulates the issuance, registration in trade repositories, and other requirements related to securities issued by financial institutions. Other securities, issued by nonfinancial debtors, are regulated by law (more generally), or detailed by the CVM. CMN Resolutions set the framework in general terms, while BCB Circulars calibrate requirements or define methodological details. Importantly, once the framework is established by CMN, the BCB is able to autonomously operationalize its policymaking.

Table 2: Distribution of responsibilities among authorities in Brazil (simplified)

Policy area	BCB	CMN
Macroprudential	<u>Systemic monitoring of:</u> a) BCB-supervised financial institutions; b) financial market infrastructures; c) other entities not supervised by BCB, such as investment funds and nonfinancial companies. ⁹⁵ <u>Use of instruments:</u> a) reserve requirements; b) risk weight factors for capital requirements set by CMN; c) calibration of countercyclical capital buffer, set by CMN; d) calibration of D-SIB additional capital requirement, set by CMN; e) calibration and methodological definition of capital and liquidity requirements set by CMN.	<u>Definition of characteristics:</u> a) credit contracts; b) funding instruments; c) financial assets; d) capital market instruments. <u>Establishment of requirements:</u> a) capital; b) liquidity.
Microprudential	<u>Supervision and monitoring of:</u> a) financial institutions; and b) financial market infrastructures. <u>Conduct supervision</u> <u>Punishment decisions</u> <u>Preventive supervisory measures</u>	
Recovery, resolution and crisis management	<u>Lender of last resort</u> <u>Resolution authority</u>	N/A

Regulatory and supervisory authorities: Table 3 lists the legislation that originally established each authority; later legislations that altered the original ones are not shown for brevity.

⁹⁵ The CVM is the regulator of investment funds (rulemaking, supervision and enforcement). In this way, the CVM regulates prudential, investor protection and conduct matters.

Table 3: Legislation that originally established each authority

Regulators	Supervisors	Coordination between agencies
CMN - Law 4,595/1964 CNSP - Executive Order 73 /1966 CNPC – Executive Order 7,123/2010	BCB - Law 4,595/1964 CVM - Law 6,385/1976 Susep - Executive Order 73/1966 Previc – Law 12,154/2009	Coremec – Executive Order 5,685/2006

According to Law 4,595/1964, the BCB is responsible for the supervision of the banking system and of non-banking financial entities.⁹⁶ It is also responsible for the supervision of entities such as representative offices of foreign institutions; development agencies; auditing companies and independent auditors, while performing auditing activities on financial institutions (FIs) or other institutions authorized to operate by the BCB; and companies that manage credit cards and prepaid cards, credit card acquirers and vouchers and other electronic money issuers. In addition, while the Securities and Exchange Commission of Brazil (CVM) is responsible for the supervision of investment funds, the BCB has oversight over the management and risk control mechanisms of the asset manager of a banking conglomerate as well as segregation between fund administration and management of the administrating institution.

The CVM was set up in 1976 under Law 6,385/1976 (Securities Act). The Law also set out the regulatory landscape for the functioning of the securities markets. It entrusted upon CMN to define the policies to be observed in the organization and functioning of the securities markets; regulate the use of credit within that market; to establish the general orientation to be observed by the CVM; define the CVM’s activities to be performed in coordination with BCB, when necessary; and establish specific conditions related to the negotiation of derivatives contracts, for monetary and exchange policy purposes, regardless of the investor’s nature. Within this framework, the CVM has the powers of: i) rulemaking, observing the policy defined by CMN for the organization and functioning of securities markets; ii) supervision; and iii) sanctioning in the securities market. The following matters are governed by the Securities Act:

- securities products (except government bonds and negotiable instruments guaranteed by a financial institution), for instance quotas of mutual funds investing in any type of assets, shares of public companies, derivatives contracts, any collective investment instrument or agreement that creates remuneration or the right of participation on profits, when publicly offered;
- activities, such as issuance and distribution of securities; trading and intermediation of securities and derivatives contracts, organization and functioning of equity and derivatives markets (exchange and organized or non-organized (OTC)); management of securities portfolios and custody; and
- entities in connection to the activities and products, as well as the securities’ issuers, such as market administrators, public companies, investment funds and their

⁹⁶ In the case of dealers, brokers and brokerage firms, the BCB supervises operations encompassing treasuries and other fixed income assets, while the CVM supervises transactions encompassing securities.

administrators/managers, auditors, credit rating agencies, brokers and financial intermediaries, clearing, depositories and custodians.

The main self-regulatory organizations or arrangements in the Brazilian financial system are BM&F Bovespa and CETIP. The self-regulatory organizations must comply with CVM requirements stating that institutions responsible for operating organized securities or derivatives markets must establish effective mechanisms and procedures to enforce the compliance of trades and market participants with its rules and standards of conduct, in order to identify violations, abnormal trading conditions or any behaviour that may jeopardize the regular functioning, transparency and credibility of the market.

The insurance sector in Brazil comprises open private pension funds, capitalization markets and reinsurance, and is supervised by Superintendence of Private Insurance (Susep). The National Superintendence of Complementary Pensions (Previc) is responsible for supervising and regulating the activities of closed private pension funds and for the execution of policies for the complementary pension regime operated by these closed entities.

Coordination between authorities: Coordination within regulatory agencies in Brazil is facilitated through bilateral agreements. In addition, the Committee of Regulation and Supervision of Financial, Securities, Insurance, and Complementary Pension Markets (COREMEC) was established in 2006, with the objective of promoting coordination between the various regulatory authorities. This Committee is legally part of the Ministry of Finance, and consists of the chairs and one board member of each of BCB, CVM, Susep, and Previc with a rotating presidency. Ordinary meetings are conducted every three months. As a consultative body, its functions are to: (1) propose measures of any kind aiming a better functioning of markets under any member's regulation and supervision; (2) debate regulatory and supervisory procedures that may impact any members' regulated entities, aiming regulatory and supervisory harmonisation; (3) facilitate and coordinate information sharing between its members, including foreign and international organisms and; (4) debate and propose coordinated regulatory and supervisory actions, including those applicable to financial conglomerates. Each authority then decides autonomously whether, and when, to accept the advice or recommendation of the COREMEC.

In 2010, COREMEC created the Subcommittee for Monitoring the Stability of the National Financial System (SUMEF). This subcommittee is composed of two members from each authority that makes up the COREMEC. Members of the subcommittee inform COREMEC of evolving markets and their interconnections, and point out potential risks to the financial system. When risks are identified, the subcommittee recommends joint action or coordination of COREMEC members to mitigate the risks.

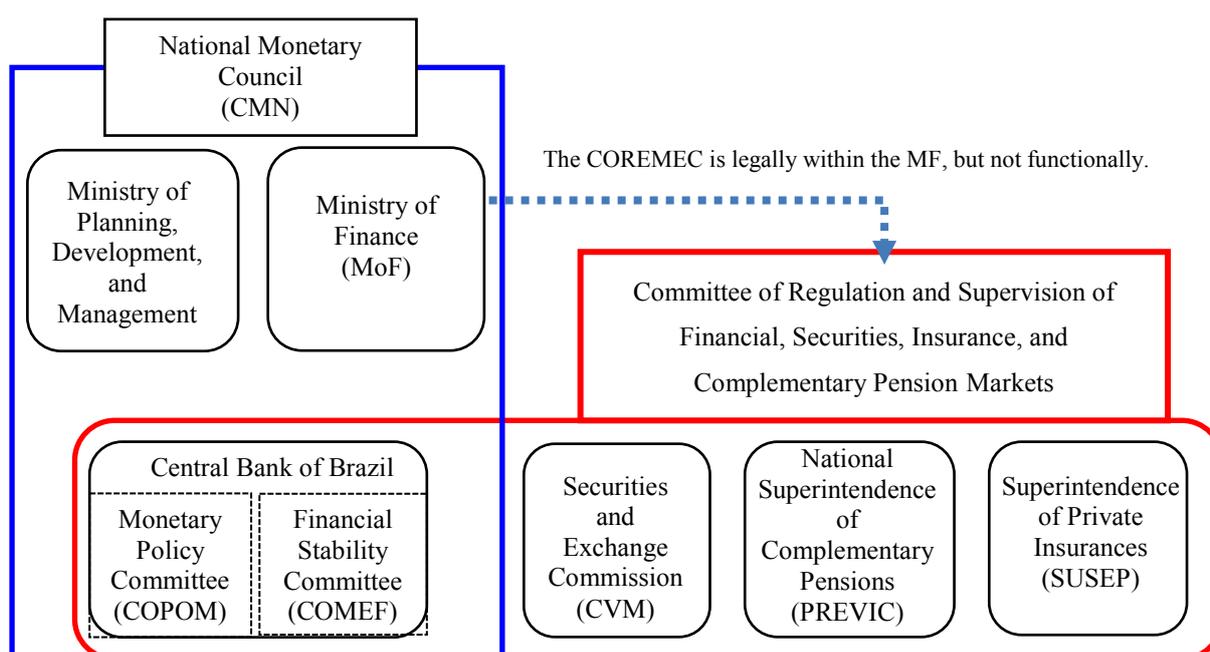
In 2011, the BCB established the Financial Stability Committee (COMEF), to better assess financial stability in a coordinated and integrated manner, by identifying and monitoring any sources of systemic risk, and to define strategies to mitigate such risks. While the members of the BCB Board also convene periodically as the Monetary Policy Committee (COPOM) to

decide on the target for the policy interest rate within an inflation targeting framework, the two internal BCB Committees have separate processes and deliverables.⁹⁷

Also in 2011, the CVM created the Committee on Risk Identification (CIR) regarding the markets, entities and products regulated by it to meet the objectives of principles 6 and 7 on monitoring for systemic risks and reviewing the regulatory perimeter respectively set out in IOSCO’s revised Objectives and Principles of Securities Regulation issued in June 2010.⁹⁸

The functional relationship between the financial system authorities is set out in Chart 1.

Chart 1: Functional relationship between financial system authorities in Brazil



Deposit insurance: In Brazil, deposit insurance is provided by the Credit Guarantee Fund (FGC) and by the Cooperative Guarantee Fund (FGCoop). Both are private non-profit entities established to manage protection mechanisms for investors and depositors of financial institutions (multiple, commercial, development and investment banks, saving bank, finance companies, mortgage companies and savings and loan associations in the case of the FGC; and credit unions and cooperative banks in the case of the FGCoop).

The FGC and FGCoop are regulated by CMN and BCB. Resolution CMN 4,222/2013 consolidates the statute and regulation of deposit insurance for financial institutions (FGC). Likewise, Resolution CMN 4,284/2013 consolidates the statute and regulation of deposit insurance for credit unions and cooperative banks (FGCoop). Additionally, a recent regulation

⁹⁷ While COPOM establishes the interest rate level in the overall economy, and communicates its decision and the minutes of the meeting, COMEF has a more medium-to-long term perspective due to the prudential issues it deals with and the longer horizon that prudential actions take to show results.

⁹⁸ The two principles added were: ‘Principle 6: The regulator should have or contribute to a process to monitor, mitigate and manage systemic risk, appropriate to its mandate’ and ‘Principle 7: The regulator should have or contribute to a process to review the perimeter of regulation regularly.’ See <http://www.iosco.org/library/pubdocs/pdf/IOSCOPD323.pdf>.

improved the FGC's statute in general, among other aspects restricting the insurance coverage in cases of institutional investors (Resolution CMN 4,469/2016). New regulation is also being evaluated proposing the same lines for the FGCoop, in order to allow the fund to act as a paybox plus, being able to offer liquidity assistance to associates.

Instruments covered by the guarantee provided by the FGC and the FGCoop include deposits and deposit-like instruments up to BRL250,000 per investor, identified by their Taxpayer Registration Number (CPF) or by the National Registry of Legal Entities (CNPJ). Funds for these guarantees come from ordinary contributions from associated institutions, credit rights subrogated by the FGC/FGCoop from associated institutions under resolution regime, as well as from the results of the services rendered by the FGC/FGCoop and the proceeds from investments made by them. Currently, the monthly ordinary contribution of associated institutions is set at 0.0125% of the balance of the guaranteed accounts.

Resolution regime: The BCB is the resolution authority for financial institutions. In case of capital deficiency, the BCB can determine the capitalization needed to ensure the financial institution's viability as well as the transfer of equity control or reorganization (merger or split-up). The non-implementation of such measures by the deadline established by the resolution authority can lead to the implementation of a special resolution regime. The legal framework in Brazil provides for three types of special regime for the resolution of failing banks; (i) the temporary special administration regime (RAET); (ii) intervention; and (iii) extrajudicial liquidation. The decision on which special regime should be adopted is taken by the BCB based on, among other issues, the continuity of the institution in question and its systemic importance.

If a special resolution regime is decreed, BCB is empowered to authorize a manager, a liquidator or, in the case of RAET, a Board of Senior Managers appointed by the BCB, to transfer assets, rights and obligations to third parties, to proceed with a corporate reorganization and to wind-up the failing institution. The administrator, the intervener or the liquidator has broad management powers, including powers to promote reorganization of the bank under previous authorization by the BCB. In these cases, legislation prescribes the inalienability of controllers, senior managers and other directorate bodies members' assets. The senior managers of the financial institution under resolution are removed in any of the three special regimes and an investigation into the responsibilities of controlling shareholders and senior management is conducted by the BCB. In addition, when establishing a sanctioning procedure against a financial institution (Resolution CMN 4,019), the BCB can, as a precaution, remove from office indicted members while investigations continue. It can also prohibit indicted managers from taking managerial or administrative positions in financial institutions. The BCB can also impose restrictions on the activities of the problem institution.

The FGC complements the BCB's action, as a member of the financial safety net, performing not only the role of pay box in intervention or extrajudicial liquidation, but also the role of stabilizing agent providing financial support (e.g. loans, portfolio purchases, additional limit of insurance for certain affiliates' operations) in order to maintain the stability of the national financial system and to prevent systemic banking crisis. The FGC can conduct these operations to promote the transfer of control, split, merger or other corporate reorganization.

Recent regulatory (prudential) initiatives

Basel III: There is ongoing work by the BCB to implement the Basel III framework. The standardised approach for measuring counterparty credit risk (SA-CCR) and the capital requirements for central counterparties (CCPs) are expected to be finalised in mid-2017. The securitization and the large exposures frameworks, along with the Net Stable Funding Ratio (NSFR) and disclosure requirements are expected to be finalised by end-2017. The draft rule for Pillar 3 disclosure requirements is under development. The BCB is planning to combine phases 1 and 2 of the BCBS review of the Pillar 3 framework in future regulation.

Stress testing: At the end of 2015, the BCB's Financial System Monitoring department started the implementation of a project for the improvement of stress tests' use and application. The project entails the integration of stress testing tools in micro- and macroprudential approaches as well as banking supervisory processes. The project includes the following actions: development of bottom-up stress test (TEBU) for the largest banks; application of TEBU in the activities of the banking supervisory process; improvement of the macroeconomic top-down stress test (TEMTD); reports of the TEMTD tool by each financial institution, development of specific scenarios of TEMTD per FI, and establishment of systemic risk indicators related to TEMTD; incorporation to the supervision cycle of updated procedures of micro-prudential stress tests; elaboration of an evaluation methodology of the assumptions used in FIs' stress tests; improvement of the liquidity stress test; and establishment of an institutional governance and approval of macroprudential scenarios.

Resolution framework: In line with the FSB *Key Attributes of Effective Resolution Regimes* (KAs) issued by the FSB, the BCB has prepared a draft bill to implement a new resolution framework. Under this new resolution framework, existing tools (e.g. reorganization, good-bank/bad-bank policy and liquidation) are made more effective and new measures are introduced, such as the possibility to create bridge banks and to adopt bail-in (which will be a precondition for any injection of public funds in the institution). In addition, the draft bill contains provisions regarding cooperation and exchange of information with foreign resolution authorities in connection with the resolution of multinational firms.

The new resolution legal framework confirms the BCB, CVM and Susep as the Brazilian resolution authorities for financial institutions, financial market infrastructures (some of them, in the case of the CVM) and insurance companies respectively. In addition to the draft bill, the CMN and the BCB will also issue a number of infra-legal regulations to introduce some of the tools set forth in the KAs that do not depend on congressional approval.

The draft bill has already been discussed with Susep and CVM respectively, and is currently under review by the MoF. The next step would be to for the draft bill to get the concurrence from the Office of the President in order to be submitted to the National Congress.

Annex 2: Structure of the financial system in Brazil⁹⁹

The financial system in Brazil comprises the banking sector, non-banking financial sector, securities market, stock market, derivatives market, investment funds, the insurance sector and the pension sector. The system is composed of approximately 1,800 financial institutions, a number that has not changed significantly in recent years. The total assets of the different sectors and size relative to GDP as of the end of December 2016 are set out in Table 1.

Table 1: Total assets of financial sectors and relation to GDP (December 2016)

Sector	2011		2016	
	Assets (R\$ million)	% GDP	Assets (R\$ million)	% GDP ¹
Banking ²	4,956,697	113	8,077,708	128
Non-banking ³	94,956	2	274,633	4
Securities market	4,135,811	94	6,127,093	97
Internal public federal debt ⁴	1,866,400	43	3,112,900	49
Private fixed-income security ⁵	2,269,411	52	3,014,193	48
Stock market ⁶	2,294,410	52	2,473,127	39
Derivatives market ⁷	4,171,807	95	6,216,467	99
Investment funds ⁸	1,954,780	45	3,573,335	57
Insurance, capitalization and private pension ⁹	1,108,364	25	1,653,290	26

¹ GDP = R\$ 6,301,123 million, best estimate as of February 2017. Source: Ipeadata/IBGE; ² Banking = commercial banks, multiple banks, Caixa and investment banks, and by financial conglomerates composed by at least one of these institutions (BI + BII). Source: BCB – Financial Monitoring

³ Non-banking = Credit Unions (BIII) + NB. Source: BCB – Financial Monitoring; ⁴ Source: 2016 Annual Report - Public Debt/STN.

⁵ Source: Cetip; ⁶ Market value. Source: BM&FBovespa; ⁷ Notional Value. Source: BM&F and Cetip; ⁸ Administered assets. Include funds ICVM 409/555 and structured funds. Source: CVM; ⁹ Insurance companies, local reinsurance, capitalization and private pension. Sources: Susep, Previc, SPPS, September 2016 (most recent data available).

Banking sector: The banking sector comprised, in December 2016, 134 banking conglomerates and independent financial institutions that included commercial banks; multiple or universal banks; development banks; investment banks; the Federal Savings Bank (Caixa); credit unions and cooperative banks; and credit, finance and investment societies. The large majority of the banking sector is private owned. Table 2 sets out the total net worth, total assets, deposits and credit of the banking sector in Brazil as of the end of December 2016.

⁹⁹ Based on information provided by the Brazilian authorities.

Table 2: Banking sector in Brazil (December 2016)

Banks ^{1/}	Quantity		Net Worth		Total assets ^{4/}		Deposits		Credit operations	
	2011	2016	2011	2016	2011	2016	2011	2016	2011	2016
Public ^{2/}	13	13	34.1	30.9	42.5	47.9	46.3	52.8	48.3	57.4
Private	123	121	65.9	69.1	57.5	52.1	53.7	47.2	51.7	42.7
Nationals	65	58	40.0	49.6	39.3	37.0	37.9	35.4	35.5	31.3
National with foreign control ^{3/}	58	63	25.9	19.5	18.2	15.1	15.8	11.8	16.2	11.4

Source: BCB.

1/ Includes BNDES, CEF, multiple, commercial, investment and development banks.

2/ Includes BNDES and CEF.

3/ Multiple and commercial Banks under foreign control.

4/ Intermediation not deducted (Cosif 1.2.1.20.00-2/financed position).

In general, Brazil's banking sector is capitalized well above minimum regulatory requirements, with a relatively low level of leverage and high liquidity and profitability ratios (see Table 3).

Table 3: Solvency indexes, liquidity and profitability (December 2016)

Type of Control	Basel regulatory capital ratio (%)		Leverage ratio ¹		Liquidity ratio ²		ROE (%)	
	2011	2016	2011	2016	2011	2016	2011	2016
Public	14.3	16,1	6.7	5.9	2.0	2.8	17.9	10.2
Private	15.8	17.6	15.3	8.3	1.6	2.3	14.2	13.8
Foreign	20.7	17.8	10.4	10.1	1.8	1.9	8.5	7.6
Banks	16.3	17.1	10.1	7.6	1.8	2.4	15.6	11.2

Source: BCB – Financial monitoring. ROE = return on equity.

1 N1 Capital/Total Exposures

2 Liquidity Ratio = Total Liquidity / Stressed Cash-Flow (SCF).

The total stock of loans and leases in the banking and non-banking sectors stood at R\$3,744 billion (59% of GDP) as of December 2016. Of this amount, R\$3,182 billion (50% of GDP) was domestic lending. The banking sector held R\$3,620 billion, the credit unions R\$85 billion, and the non-banking sector R\$39 billion of the total. Bank lending is diversified, with energy sector accounting for the highest share of bank loans (11.9%). The top five sectors accounted for 48.7% of total bank lending as of December 2016.

More than one third of banking sector funding (except development banks) in December 2016 came from time and savings deposits (37.1%). This had fallen sharply from 2011 when time and savings deposits accounted for nearly half of the banking sector's funding (see Table 4).

Table 4: Funding to the banking sector (December 2016)

Banking System ¹	2011		2016	
	Values (R\$ billion)	%	Values (R\$ billion)	%
Demand deposits	153,7	6,2	154,7	4,6
Time deposits	764,5	30,7	597,7	17,6
Savings deposits	417,1	16,7	660,5	19,5
Repurchase agreement transactions ²	260,0	10,4	381,2	11,3
Loan obligations	283,9	11,4	206,7	6,1
Foreign funding	226,4	9,1	271,0	8,0
Financial bills	148,6	6,0	421,0	12,4
Credit bills (agribusiness, real estate)	64,0	2,6	378,3	11,2
Judicial deposits	110,4	4,4	201,6	6,0
Others	64,7	2,6	114,0	3,4
Total	2.493,3	100,0	3.386,8	100,0

Source: BCB database.

1 For this table, the banking sector comprises commercial banks, multiple banks, Caixa and investment banks, and financial conglomerates composed by at least one of these institutions. Development banks are not included in the analysis.

2 Transactions in which one party sells securities with a commitment to repurchase them from the counterparty in a specified date (in many cases, the repurchase takes place before that date). The amount informed refers to retail operations with clients, in which the negotiated securities are issued by non-government entities (in Brazil, mainly debentures). These transactions are considered a source of funding to the banking sector, similar to time deposits.

Interbank market and financial market infrastructures: Banks in Brazil manage their daily liquidity basically through overnight repurchase agreements (secured) and overnight interbank deposits (unsecured). Repurchase agreements (reverse repos) are collateralized by government bonds (issued by the National Treasury) and are registered in the Selic system, which is managed by the BCB.¹⁰⁰ Cash settlement is carried out through the Reserves Transfer System (STR), a real time gross settlement infrastructure of the Brazilian Payment System (SPB). Outright and repo trading of government securities can be carried out either over-the-counter, or based on broker-dealer intermediation or centralized platforms.

As the manager of the system, BCB can monitor in real time the flow of funds and rate behaviour in the Selic market, allowing it to intervene in order to maintain the market rates close to the target established by the COPOM. Repurchase agreement auctions are carried out daily by BCB with selected dealers, early in the morning, when markets open. Banks can also use central bank liquidity facilities in order to manage their liquidity needs. Such facilities accept or provide government bonds as collateral and are designed to guide market rates towards the target.

Another instrument authorised by the BCB for exchange funds among FIs is Interbank Deposits (DIs). Such deposits are mostly unsecured (not backed by any asset) and must be registered in a Financial Market Infrastructure authorized by the BCB or the CVM. To date, Cetip

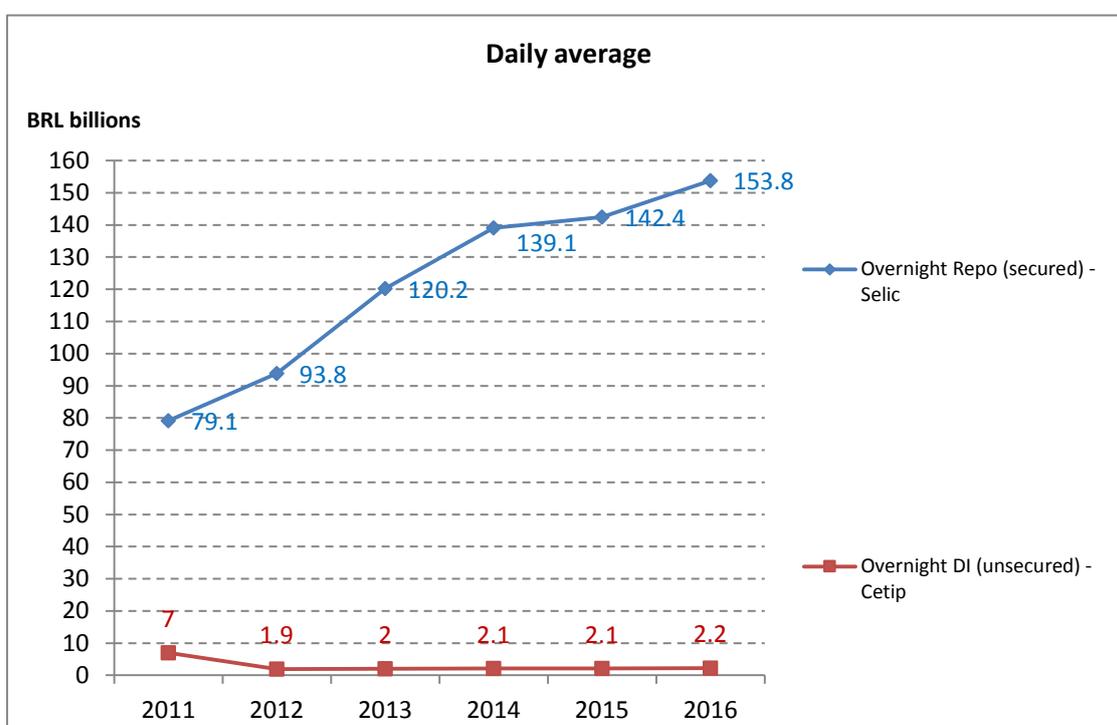
¹⁰⁰ Selic is the central depository of government bonds. The system processes the issuance, redemption, interest payments, safekeeping, and ownership control of securities, as well as the settlement of final operations and repurchase agreements, following the Delivery versus Payment (DVP) model. All securities are in the book entry form, which means that they are only issued in electronic format.

(Organized OTC Market for Securities and Derivatives) is the trade repository (TR) and clearing and settlement system authorized for DIs, and their trading occurs mostly over-the-counter. Cetip is also a central depository of corporate bonds. As a depository, Cetip processes the issuance, redemption, safekeeping and ownership control of bonds, as well as interest payments and other events, when applicable.

According to the type and time of transaction, settlement occurs on T+0 or T+1 basis. Primary market transactions involving securities registered at Cetip are usually multilaterally settled. Bilateral netting is used before settlement of derivatives, while real time gross settlement is used for securities traded in the secondary market.

Therefore, repos (through Selic) and DIs (through Cetip) are tools available for FIs to raise and invest funds among themselves that may be used for liquidity management. Chart 4 below shows the daily average transactions in the interbank money market through Cetip and Selic.

Chart 1: Interbank market



All interbank transactions are required to be settled through the SPB. Those transfers, which result from commercial and financial transactions made in local and foreign currency, affect the balance of the bank reserves account that FIs hold at BCB. In a broader sense, the SPB 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 was enacted, payment schemes and payment institutions also became part of the SPB. BCB is responsible for assuring that the SPB functions appropriately as well as for its continuous improvement.

Resolution CMN 2,882/2001 allows the BCB and the CVM to regulate, authorise and supervise the clearinghouses and payment systems. This mandate is shared between the BCB and the CVM when referring to the settlement of securities in general, being restricted to the BCB where settlement systems are used for government securities and securities issued by banks. Law 10,214/2001 establishes that the BCB has the power to define which systems are systematically important, to determine whether the entity that operates them must do so as a central counterparty, and to adopt mechanisms and safeguards to guarantee the settlement of operations. Law 12,810, of 2013, defines the activities performed by Central Securities Depositories (CSDs) and TRs, and formally empowers BCB and CVM to authorize and oversee the related entities. Following Law 12,810/13, CVM issued, in the same year, Instructions 541 and 544 regarding CSDs and TRs, complementing its Instruction 461/2007 that deals with managing entities of organized markets. In 2015, BCB issued Circular 3,743 with specific requirements and guidelines for financial market infrastructures under its oversight.

Table 5 shows the FMIs operating in the SPB.

Table 5: Financial Market Infrastructures (FMI) in the Brazilian Payments System

Name	FMI ^{1/}	Activity ^{3/}
STR - Reserves Transfer System (<i>Sistema de Transferência de Reservas</i>)	PS	Real-time settlement of Selic and other clearinghouses' operations, Electronic Funds Transfers (TED), and other critical payments, directly from participants' accounts in BCB.
CIP-Sitraf – Funds Transfer System (<i>Sistema de Transferência de Fundos – Sitraf</i>), by the Interbank Payments Clearinghouse (<i>Câmara Interbancária de Pagamentos - CIP</i>)	PS	Settlement of Electronic Funds Transfers (TED) below R\$ 1 million.
CIP-Siloc – Deferred Settlement System for Interbank Credit Orders (<i>Sistema de Liquidação Diferida das Transferências Interbancárias de Ordens de Crédito – Siloc</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 transfers (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>Cielo - Sistema de Liquidação Financeira Multibandeiras</i>)	PS	Clearing and settlement of Visa card transactions in which Cielo is the acquirer.
Rede – Domestic Clearing System (<i>Rede - 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&F Bovespa Clearinghouse (<i>Câmara BM&F Bovespa</i>)	CCP, SSS, TR	Registration, clearing, and settlement of financial derivatives and commodities market operations.
BM&FBovespa Foreign Exchange Clearinghouse (<i>Câmara de Câmbio da BM&F Bovespa</i>)	CCP, PS	Clearing and settlement of interbank foreign exchange transactions.

BM&FBovespa - Securities Clearinghouse (<i>Câmara de Ativos da BM&F Bovespa</i>)	CCP, SSS	Registration, clearing, and settlement of government security transactions.
BM&F-Bovespa - Equities Clearinghouse (<i>Câmara de Ações da BM&F Bovespa</i>)	CCP, CSD, SSS, TR	Registration, clearing, and settlement of equity and corporate bonds transactions.
BM&F-Bovespa - Registration System (<i>Sistema de Registro da BM&F Bovespa</i>)	TR	Registration of securities and over-the-counter market operations. ^{2/}
Cetip – Organized Over-the-Counter Market for Securities and Derivatives, by <i>Cetip S.A. Mercados Organizados</i>	CSD, SSS, TR	Clearing and settlement of transactions involving corporate, state, and municipal bonds and derivatives.
CIP-C3 – Credit Assignment Central (<i>Central de Cessão de Crédito - C3</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 BCB Policy Statement 27,115/2015, based on the Principles for Financial Market Infrastructures – PFMI

2/ Structured Transactions Certificates (COE), Time Deposits (CDB), Real Estate Credit Bills (LCI).

3/ Further information about each infrastructure may be seen at BCB's web page: <http://www.bcb.gov.br/?FMISYSTEMS>.

Derivatives market: The derivatives market in Brazil is largely exchange-traded and focused on interest rate contracts (see Table 6).

Table 6: Notional amount outstanding of derivatives markets (as of December 2016)

	USD billion
Cleared	1.777
Exchange Traded	1.674
Interest Rate	1.392
Currencies	275
Stocks	6
Commodities	1
Price Index	0
Others	0
OTC	103
Interest Rate	40
Price Index	35
Currencies	26
Stocks	2
Bilateral(non-centrally cleared)	532
Currencies	410
Interest Rate	79
Stocks	33
Price Index	5
Commodities	2

Source: BCB.

Annex 3: Data fields reported for different asset classes to TRs in Brazil

This annex summarises the data fields collected by the various TRs in Brazil for each asset class, as well as the corresponding rules and regulations.

Product Type	Transaction Details	Related TR	Related Rules & Regulations
OTC derivatives	<ul style="list-style-type: none"> i) Contract type (forward, option, swaps, other); ii) Counterparty identifiers; iii) Notional value (nominal amount that is used to calculate market value and payments); iv) Key dates (trade date, start date, confirmation date, maturity date, settlement date); v) A description of the payment streams of each counterparty; vi) Option information needed to model option value (e.g. type: put, call; style: European, American); vii) Value (the market price/value at the end of every business day); viii) Any other primary economic terms matched by the counterparties in verifying the contract; ix) Execution venue name and type; x) Trade or event type; xi) Price-forming trade; xii) Origination of trade; xiii) Other data elements necessary to determine market value of the transaction; xiv) Bought or sold by reporting counterparty (whether reporting counterparty bought or sold contract as defined for each asset class and product); xv) Clearing details; xvi) Settlement method (the agreed-upon way of settlement); xvii) Delivery type (deliverable or non-deliverable); xviii) Collateral information (collateral type, netting arrangements across portfolios); xix) Renegotiation. 	BM&F Bovespa, Cetip	Law 6,385/76 Resolution CMN 3,505/07 Resolution CMN 3,824/09 Resolution CMN 3,312/05
FX spot	<ul style="list-style-type: none"> i) Value (value of the currency exchanged); ii) Key dates (trade date, settlement date); iii) Price (exchange rate); iv) Currency (currency exchanged); v) Counterparties (counterparties identification); vi) Purpose of the FX spot operation; vii) Nature of the client purchasing or selling foreign currency in the country; 	FX System, BM&F Bovespa	Law 4,131/62 Resolution CMN 3,568/08 Circular BCB 3,691/13

	<ul style="list-style-type: none"> viii) Indication of existence or not of a guarantee by the Brazilian Government; ix) Nature of payer/receiver abroad; x) Relationship between the client purchasing or selling foreign currency in the country and the payer/receiver abroad; xi) Form of foreign currency delivery. 		
Credit (domestic loan operations, external loan operations, and debt assignments)	<ul style="list-style-type: none"> i) Value (total value of the loan); ii) Key dates (date the loan was granted or contractual date of assignment , maturity of the loan); iii) Price (interest rate of the loan or discount rate of the assignment); iv) Type (type of loan: commercial, student, auto, mortgage); v) Counterparties identification; vi) Guarantee/Collateral (information about the existence; type of guarantee/collateral of the loan; guarantee/collateral value and date of valuation) (not applicable to external loan operations); vii) Events (payment cash flows, renegotiation, non-payment); viii) Rating (borrower's credit risk rating) (not to external loan operations); ix) Provision; x) Borrower's type; xi) Company size; xii) Borrower's control type; xiii) Borrower's income; xiv) Conglomerate; xv) Origin of the funds (free or directed); xvi) Location; xvii) Clearing; xviii) Payroll linked loan information. 	SCR, RDE-ROF, CIP-C3	<ul style="list-style-type: none"> Resolution CMN 3,658/08 Resolution CMN 4,088/12 Law 4,131/62 Resolution CMN 3,844/10 Resolution CMN 3,998/11
Fixed income	<ul style="list-style-type: none"> i) Value (primary and secondary market transactions); ii) Unique product identifier based on taxonomy of product (only to interbank deposits); iii) Key start dates; iv) A description of the payment streams of each counterparty; v) Counterparties; vi) Guarantees/collaterals. 	Selic, Cetip	<ul style="list-style-type: none"> Resolution CMN 3,339/06 Resolution CMN 3,399/06 Resolution CMN 3,282/05 Law 12,249/10 Law 10,931/04 Law 11,076/04 Resolution CMN 4,263/13

Annex 4: Examples of the use of TR data by authorities in Brazil¹⁰¹

Supervision and oversight of market participants, trading venues and financial market infrastructure

BCB is responsible for the regulation and supervision of FIs, including their securities and foreign exchange operations. For securities market monitoring, the main source of information is data from TRs, while the monitoring of foreign exchange operations is based on data directly provided to BCB by market participants.

The most liquid securities market in Brazil is the government bond market. The monitoring of this market's participants is carried out by the BCB based on Selic data. The methodology seeks to establish the statistical pattern of operations performed by market agents and, on this basis, identifies outlier operations. The monitoring of transactions with government securities identifies sequential day-trade transactions in which significant variations in purchase and sales prices generate substantial results for at least one of the participants of the sequence. In addition, whenever the BCB identifies transactions with government securities by participants outside its jurisdiction, other government entities are reported as appropriate. For the purpose of supervision and oversight of FMIs, TR data is used to analyse basic functioning levels across periods, concentration reports, in-house back-testing for CCPs, and other analysis.

Monitoring of financial markets and general financial stability/risk monitoring

For financial markets monitoring purposes, databases are loaded on a daily or monthly basis, aggregating data from different TRs and enabling micro- and macroprudential analysis.

i) Data-rich environment

The powers vested in the BCB as the main financial stability authority allow it to gather data in order to oversee the Brazilian financial system. Third parties not supervised by the BCB also contribute with data to the monitoring effort by sending information directly to the BCB.¹⁰² Therefore, the BCB is in a position to perform microprudential on- and off-site supervision together with macroprudential oversight.

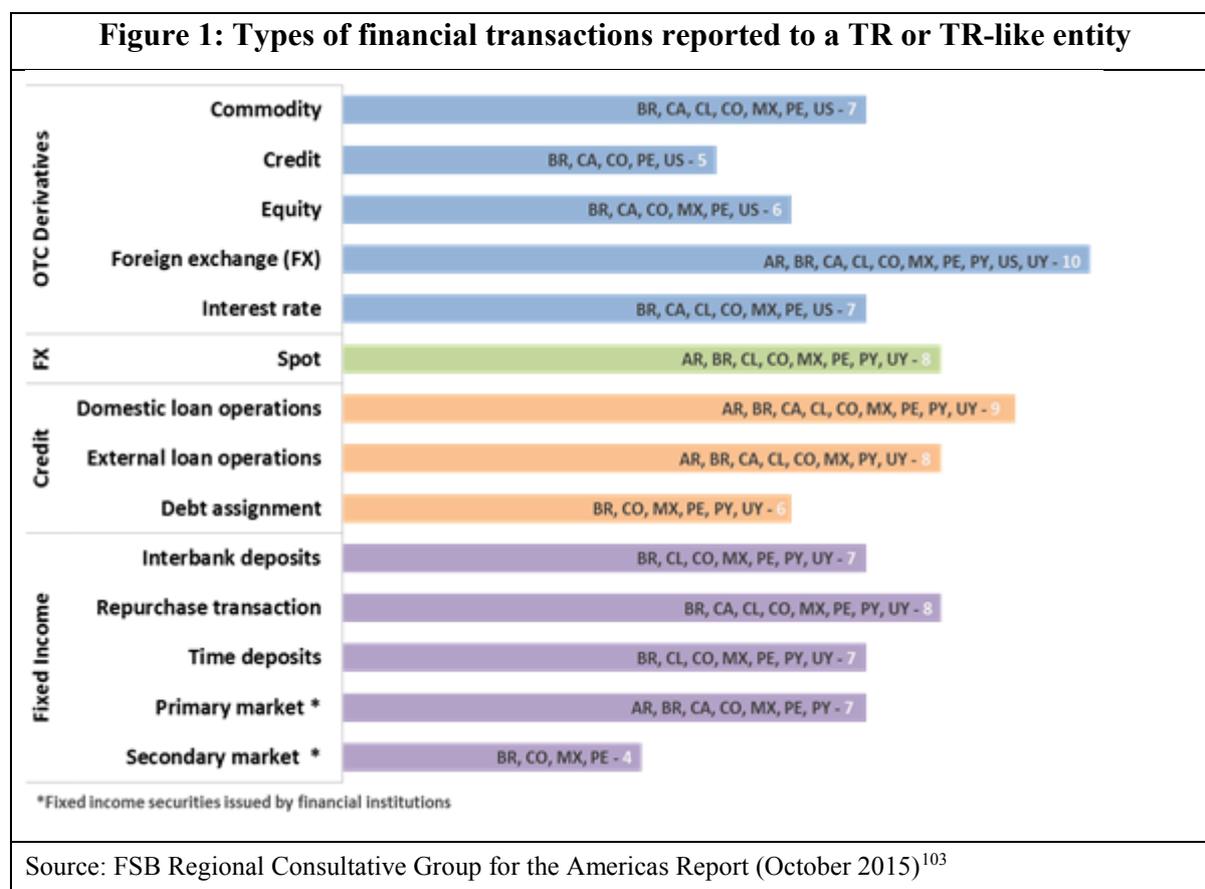
The Credit Information System (SCR) is a credit registry used both for supervisory purposes and as a credit bureau. It stores granular information of 104 million identified counterparties (99.7 million individuals and 4.5 million corporates), with over 640 million domestic individual operations from approximately 1,400 lenders representing BRL 3.15 trillion (December 2016). The SCR provides the BCB with data to support the monitoring of credit risk at both individual and systemic levels and reduces information asymmetries between borrowers and lenders, thereby contributing to the efficiency of the credit market and risk management by lenders.

In Brazil, financial market infrastructures contribute significantly to data collection and quality. In general, as a legal requirement, the validity of financial contracts depends on their registration with a TR. Figure 1 details the types of financial transactions that are reported in

¹⁰¹ Based on information provided by the Brazilian authorities.

¹⁰² The BCB also has information sharing agreements with other national regulators.

Brazil and other jurisdictions in the Americas. It is worth noting that all transaction types in Brazil that are reported to TRs identify the final investor.



These TRs are authorised, supervised and monitored by the BCB, which holds them responsible for the quality of the information. Because they have this responsibility, TRs demand that their participants register operations in conformity with existing regulation of each financial instrument,¹⁰⁴ i.e. they act as a first line of defence to comply with regulation and to ensure data quality. The data is then shared with the BCB on a granular basis, providing supervisors with contract-by-contract information that can help them identify imprudent risk-taking as well as to design and calibrate macroprudential policies. Additionally, contract reporting facilitates resolution processes, especially the timely identification of counterparties.

This data supports both the macro- and microprudential analyses performed by the Financial System Monitoring Department (BCB). This department is responsible,¹⁰⁵ among other things, for monitoring the financial system with a macroprudential perspective, and has dedicated

¹⁰³ See <http://www.fsb.org/2015/10/reporting-financial-transactions-to-trade-repositories-in-the-americas/>.

¹⁰⁴ The Brazilian legal and regulatory framework defines financial assets and contracts in different degrees of detail. The characteristics of these instruments are codified by the Civil Code as well as other Laws and regulations, depending on the specific case. An example is CMN Resolutions changing minimum maturity for some bank liabilities.

¹⁰⁵ According to the BCB Bylaws, which are approved by the CMN.

teams to receive, manage and process data according to BCB-wide governance principles regarding information management. BCB also has teams that use this supervisory data to monitor specific risks (e.g. credit, liquidity, market) across the system, as well as to perform systemic risk analyses such as contagion cascades and top-down macroeconomic stress tests. This integrated assessment allows monitoring teams in BCB to assess the relevance of trends in each specific risk and to discuss them with on-site supervisors. Moreover, direct contact of supervisors with FIs and other market participants facilitates the understanding of conditions and trends, and complements quantitative analyses.

Supervisory data and a combination of information from supervised entities and third-party providers such as TRs may point to elevated risk in a specific institution. In such cases, the monitoring department interacts with on-site supervisors to ensure that they are aware of this potential risk, or to point to possible data quality issues. The close interaction with micro-prudential supervisors also provides the monitoring department with feedback to ensure the quality of the information used and of the macroprudential analyses carried out. If the collected data extends beyond BCB's regulatory perimeter, it can be provided by other regulators if an information sharing agreement is in place.¹⁰⁶

ii) Funding market monitoring

Financial entities' registration data and accounting information are added to TR data on funding instruments. The assessment includes levels, trends and behaviours of balances, issuance, terms, indexes and interest rates. Considering the concentration in the Brazilian financial system, special attention is given to large institutions whose behaviour may determine the aggregate market behaviour. Term analyses include terms of issues, terms to maturity and terms of redemptions, including a comparison between the actual and original redemptions terms. Due to the granularity of data available, whenever necessary, it is possible to identify the institutions responsible for significant movements in the aggregate series.

iii) Derivatives market monitoring

Substantial transformations on the original databases are required to enable position analysis (long/short) in the underlying assets. The databases provide sufficient flexibility to the monitoring team, allowing assessments to meet specific needs. Other databases are also loaded with aggregated data, permitting analysis such as a participant's gross notional amounts stocks rankings, and net positions evolution. This monitoring is made by both BCB and CVM.

iv) Credit risk monitoring

Credit risk monitoring comprises both the macro and micro-prudential approaches.

Micro-prudential monitoring is an off-site monitoring process based on the evaluation of:

- a. Intrinsic Risk (RI) – assesses inherent risk characteristics from the supervised institutions' loan portfolios.
- b. Credit Risk Profile (PRC) – establishes the institutions' credit lending profile, which indirectly may also determine a risk profile.

¹⁰⁶ COREMEC member authorities have bilateral information-sharing agreements with each other.

All situations are monitored using their historic evolution and variations trends. They are represented by numerous indexes that are generated by the combination of information available at the SCR and other databases at the BCB (e.g. accounting statements, IRS, Cetip).

Currently the monitored situations established for the RI and PRC categories are as follows:

- a. Intrinsic Risk
 - Loan Portfolio Performance: Default; Pre Default; Representativeness of Restructured Credit
 - Loan Portfolio Quality Assessment: Credit Losses; Representativeness of Non-Performing Loans; Provisions/Allowance
 - Credit Granting Assessment: Granting Features; Representativeness of Non-Performing Loans Granting
 - Credit Loss Management Capacity: Provisions Coverage
 - Credit Business Sustainability – Loan Portfolio Profitability: Net Credit Margin.
- b. Credit Risk Profile
 - Typical Credit Portfolio: Total Credit at Risk Volume; Assigned Credit Portfolio; Credit Granting; Credit Product Based Indexes
 - Alternative Credit Portfolio: Bonds with Credit Risk (debentures)
 - Credit Business Orientation: Credit Portfolio Representativeness; Credit Portfolio Leverage
 - Credit Portfolio Profile: Duration (Portfolio Mean Payment Term).

From a macroprudential perspective, credit risk assessment is organised under three complementary approaches:

- Aggregate: focused on the main macro risk indicators in aggregate and for groups of FIs (e.g. state-owned versus private controlled FIs; complex and diversified banks versus mono-product and specialised banks; retail versus wholesale banks);
- Households: comprises a broad range of risks related to this market, such as payment capacity of individuals, income burden and risks of specific loan types like housing, auto financing, pay-roll, non-pay roll and overdrafts;
- Non-financial corporations: the approach is similar to the one used for households where critical risk indicators are continuously monitored, such as indebtedness, NPLs, forbearance, credit facilities, economic sector, borrower size, foreign exchange (FX) exposure and hedging activities.

These indicators are based on micro data (loan and borrower levels) available on a monthly basis at the SCR (Credit Information System) for 99% of domestic outstanding credit amount.

Government securities, private financial instruments and derivatives granular data from TRs support the calculation of liquidity ratios, market risk stress scenarios and other systemic stress analysis, such as the identification of vulnerabilities and propagation of risks and bankruptcies (contagion). Exposures from credit operations, funding instruments and OTC derivatives

markets are used in the stress testing models, which seek to evaluate the consequences of a default both on the financial system as a whole and on individual entities.

v) Liquidity and market risks monitoring

Mainly due to the granular data received from the TRs, the SMM is able to provide the following tools and functionalities to the monitoring teams:

- Liquidity ratio (LR) – conceptually equivalent to Basel III’s Liquidity Coverage Ratio (LCR), the LR is a stress test liquidity index, calculated daily for every banking institution on a consolidated basis.
- Structural Liquidity Ratio (ILE) – a proxy for the Basel III’s Net Stable Funding Ratio (NSFR), with the complementary objective to achieve long-term resilience. ILE is calculated monthly for every banking institution on a consolidated basis. The availability of TR granular data permit its calculation prior to the implementation of NSFR (expected to occur in 2018), without requiring any additional data from FIs.
- Central Bank Reserves Cash Flow – identifies debits and credits in the reserves account at the BCB (STR data).
- Funding Profile – identifies funding products’ maturity, stability, interest rate/indexation, and concentration by main client, maturity and product type.
- Customised Liquidity Stress Scenarios – these evaluate liquidity losses under different scenarios. This tool is mainly used when a specific problem is identified, allowing the use of stress scenarios for the assessment of potential liquidity impacts and contagion of other institutions in the financial system.
- Deposits run-off – estimates losses in liquidity due to run-off of bank customers with pre-defined characteristics.
- Cash Flow Projections – projects a bank’s future contractual in- and outflows and their impact on liquidity, based on contract-by-contract information available in TRs.
- Market Risk Impacts – evaluates liquidity losses due to market fluctuations, allowing for contagion analysis. Based on detailed data from financial instruments and derivatives operations, it includes:
 - a. Daily Mark-to-Market and Margin Calls – Analysis of the largest impacts on liquidity due to the settlement variations and margin calls, for all derivatives traded on the exchange (BM&F Bovespa).
 - b. Stressed Scenarios applied to derivative’s positions – Simulated impact on liquidity buffers due to stressed scenarios (US dollar and fixed interest rate) applied to derivatives traded at BM&F Bovespa.
 - c. Sensitivity Matrix (FX and interest rate risk factors) – This tool shows which FIs may face liquidity restrictions due to combined stressed scenarios for US dollar and interest rate risks.
- Detailed Portfolio Information:
 - a. Liquid Assets Portfolio – covers every security and other liquid asset instrument in the bank’s portfolio.

- b. Derivatives Portfolio – covers every derivatives position in the bank’s portfolio.
- c. Investment Funds Portfolio – covers every investment fund assets portfolio managed by the bank, and identifies the quotas’ holders. Fund quotas held by the bank are detailed in the Liquid Assets Portfolio functionality.
- Collateral Margin Deposits – covers all collateral types deposited as margin calls at CCPs, allowing for aggregation by different variables, including instrument type.

vi) FX market supervision (monitoring and detection of unusual operations)

The FX System (Sistema Câmbio) allows market analysis and preparation of bulletins and reports on operations, currency flows and FX positions, based on the balance of FX operations registered. These analyses include rankings, profiles and evaluations of institutions in primary (operations with customers) and secondary (interbank) FX markets, as well as on customers and segments of institutions authorised by BCB to perform FX operations.

An example of information obtained from the FX system and daily monitored by BCB is the aggregated FX market position of all financial institutions authorised by the BCB to operate in the foreign exchange market, and the FX position of each financial institution, including the calculation of reserve requirements on the short position if necessary. The information from this system facilitates decisions regarding FX and monetary policies.

The FX System is the main source of data for the compilation of balance of payments in Brazil. This database is also used in studies to support the adoption of regulatory initiatives. In addition, the FX System allows immediate monitoring of the behaviour of market agents, and is an important means of verifying the effectiveness of the regulatory measures. Through the FX System, the BCB also monitors the behaviour and trends of the FX market and international flows, in order to identify risk exposures and macroeconomic movements that may affect the stability of the financial system. Another example of the use of this system is to provide information required by the executive, legislative and judiciary branches. Finally, the FX System information gives support to several government activities related to anti-money laundering and combating the financing of terrorism.

vii) Stress testing and other sensitivity analysis

Granular data from TRs allow the identification of FIs’ exposures to counterparties, market risk parameters and credit risk ratings. Based on these exposures, stress testing can be performed to identify system-wide and bank-specific vulnerabilities.

Examples of stress scenario assessments:

- i. Macroeconomic stress testing: measures the effect of macroeconomic scenarios on NPLs and credit growth segmented by portfolio (i.e. corporate, retail, mortgages), on CARs, and identifies insolvent and non-compliant FIs as well as capital needs. The assessment covers impacts on both the Brazilian economy and financial system from a variety of scenarios, such as changes in US monetary policy, volatility in commodities prices (e.g. crude oil and iron ore), downgrade of the Brazilian sovereign credit rating, uncertainties in exchange rates behaviour etc.
- ii. Sensitivity analysis: measures the effect of shocks in NPLs, interest rates, foreign exchange rates and real estate prices on CARs, and identifies insolvent and non-

compliant FIs as well as capital needs. The vulnerabilities assessment can include the impact of a real estate bubble, appetite and tolerance for risk in banks' market positions and adequacy of provisioning of credit exposures.

- iii. Interconnectivity and contagion analysis: encompasses the identification of vulnerabilities and the propagation of risks and bankruptcies derived from common exposures among FIs and funds transfers as well as among real sector entities. This analysis aims at addressing systemic consequences due to specific events, such as banks' resolution, bankruptcy of large economic conglomerates, reputational and corruption issues (Operation Car Wash) etc.

The analysis tools map the vulnerabilities under different perspectives:

- 1) Interconnectivity in the financial sector – assesses the interconnectivity of the interbank market, mapping bilateral exposures on credit, derivatives, foreign exchange, funding and money market among interbank market participants.
 - 2) Interbank market contagion – assesses vulnerabilities and propagation of risk, in case of bankruptcies (or possible bank resolution) of specific FIs. This assessment evaluates the impact on CAR and consequent capital needs, as well as identifies insolvent and non-compliant FI affected by contagion.
 - 3) Interconnectivity in the non-financial sector – assesses the interconnectivity of non-financial corporations, mapping the concentration/diversification levels of the payments flows among them.
 - 4) Non-financial sector contagion – assesses vulnerabilities and propagation of risk on companies belonging to a same payment chain, as well as the impact on the financial system and on shadow banking, due to the bankruptcy of one of these companies.
 - 5) Unemployment contagion – assesses the impact on the financial system from the possibility of non-performance of the credits taken by the potentially unemployed workers from companies affected by the contagion scenario mapped in item 4.
- iv. Monitoring real estate prices among important cities in Brazil via the analysis of collateral pledged in residential mortgage and the risk characteristics of the mortgage markets informed in the SCR.

Other regulatory purposes

The BCB uses granular TR data for the formulation of regulatory policies. The SCR is used to conduct impact studies for regulatory policies and to identify early warnings of threats to financial stability that can lead to the development of regulatory policies. For instance, macroprudential policies have been implemented on a timely basis because of SCR microdata. The implementation of loan-to-value ratios for auto loans,¹⁰⁷ a macroprudential policy carried out in 2010, serves as an example of how granular data is important for regulatory purposes. BCB was able to identify the loosening of underwriting standards and the unsustainable credit

¹⁰⁷ See <http://www.bcb.gov.br/pec/wps/ingl/wps380.pdf>.

growth in the auto loan segment because it had NPL data by vintage, loan-to-value (LTV), monthly loans originated and maturities.

Revisions of prudential regulation, in particular the standardised approach for credit risk, also benefit from credit registry data and data mining tools, which allow for estimations of actual default rates and other key indicators, segmented into a series of pooling criteria.

Other regulatory purposes (including policy development) of TR data include:

- i. Data source for impact studies to support regulatory issues, such as new regulatory proposals, identification of gaps in the current regulation as well as proposals for corrective amendments.
- ii. Data source for the calibration of regulatory parameters, e.g. estimation of volatility factors in market risk components of the capital ratio.
- iii. Data source for providing information on the SFN in international surveys.
- iv. Data source to support Brazilian positions and proposals on international bodies such as the BCBS (e.g. definition of run-off factors for retail stable deposits in the LCR).
- v. Data source for calibration of the reserves requirements' rules.

TR data is also useful for regulatory improvements on specific market or product rules, helping the authorities to (for example) identify and understand market failures or regulatory arbitrage, assess previous regulatory actions, and monitor institutions' and investors' behaviours.

Annex 5: Contagion analysis – The case of the “Car Wash” operation

In constant pursuit of the development and improvement of the National Financial System’s (SFN) monitoring tools, the BCB developed a modelling of contagion to estimate risks and potential impacts caused by defaults of companies of the real economy sector in the financial system. The methodology aims to estimate the impact on the SFN, not only of the companies in question, but also of those which are part of their connection network, whether they are suppliers, service providers and employees, who would potentially be directly or indirectly affected in the event of a default. Based on evaluation of the derived impacts of financial system’s exposures to the company group, conglomerates and employees, the BCB also seeks to estimate the interbank contagion, represented by the impact of problems in a financial institution in the rest of the system.

Network and contagion in the real sector of the economy

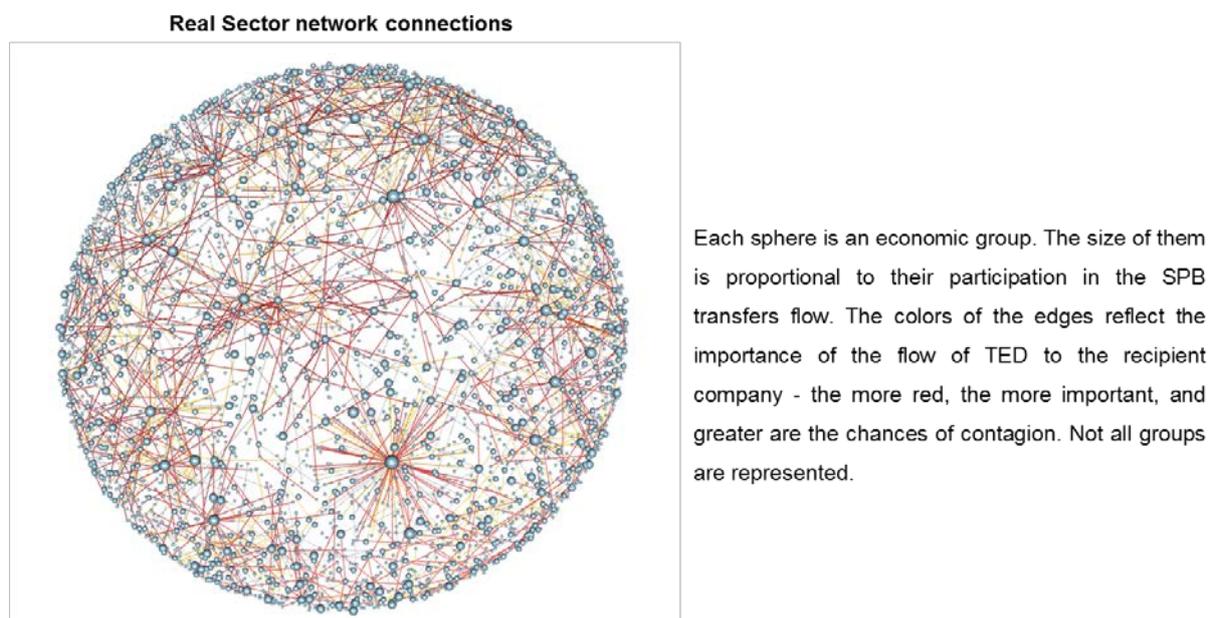
The challenges of structuring a **network of connections** in the real sector of the economy and the impact assessment of defaults that one or more companies could generate are not limited to identifying their direct and relevant connections with suppliers and service providers, but also the connections of the latter with their own suppliers and service providers, and so on.

Each company has financial and commercial relationships with different suppliers and service providers. To identify and assess the nature and relevance of each and estimate their interdependence is a complex process. One way to assess these relationships and estimate a **measure of economic dependence** among companies is based on the analysis of payment and receipts flows among companies, calculating the relevance of the payments from a company in total revenues received by another, during a certain period of time. This estimate was made using electronic transfers registered in the Brazilian Payment System (SPB). The representation of the network of real sector companies’ connections can be seen in Figure 1.

With this measure, it is possible to estimate the companies’ network of connections through their degree of dependence. The last stage of mapping the network of connections is to associate to each potentially impacted company their employed work force, for which data from the Annual Social Information Relation was used (RAIS).

When the company is a member of an economic group, the analysis can be performed on the consolidated group, not on the individual companies. The mapping of companies in economic groups is carried out using a variety of sources, such as equity interest information, from the IRS, CVM and publications in financial statements.

Figure 1



Impacts and contagion in the National Financial System

Following this step, exposures of the financial system to every enterprise of the network and to their employees are evaluated. These exposures are obtained from different sources, depending on their nature, including:

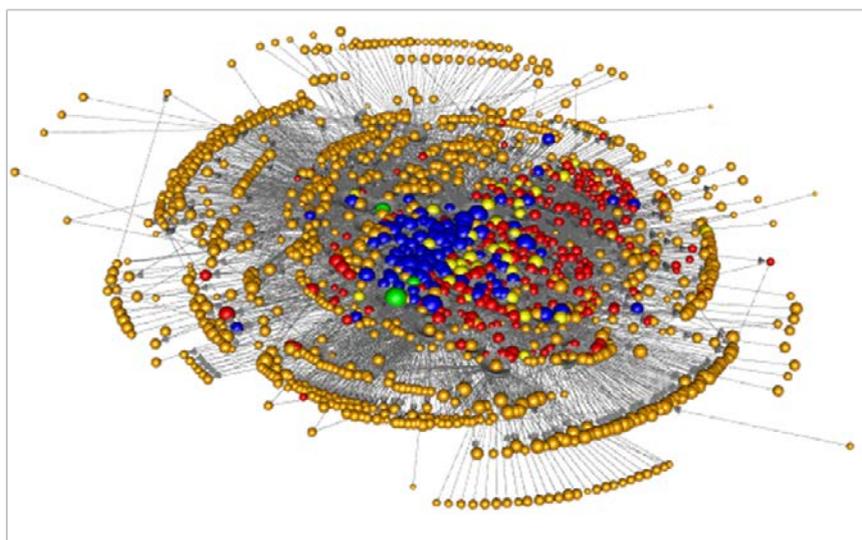
- credit and guarantees provided domestically (source: BCB/SCR);
- debentures and commercial paper (source: Cetip, BM&F Bovespa);
- foreign debt (source: BCB/RDE/ROF).

When the **network of connections in the real economy** is established and their exposures in the SFN are identified, it is possible to simulate the contagion effects caused by the simultaneous default of one or more economic groups, including the impact to their direct suppliers and service providers and all other companies that indirectly might be reliant on them in a relevant way, in addition to the employees of each of these companies.

The companies' exposures and their employees are the starting point for measuring the impact to the SFN. Through those, an estimation of the impact to each financial institution is calculated. However, if a particular financial institution does not have enough capital to withstand the simulated losses and enters in default, a new wave of contagion, now directly to the financial system, starts. The system is in equilibrium when no additional defaults of financial institutions are observed. Interconnections between FIs are shown in Figure 2.

Figure 2

Interbank Network



The blue spheres refer to Multiple and Commercial Banks. The green ones refer to Development Banks. The red are the Investment Banks. The orange are the Credit and Financial Cooperatives. Finally, the yellow refers to the Brokers and Leasing companies.

Application: estimates of the effects of “Car Wash Operation” in the SFN

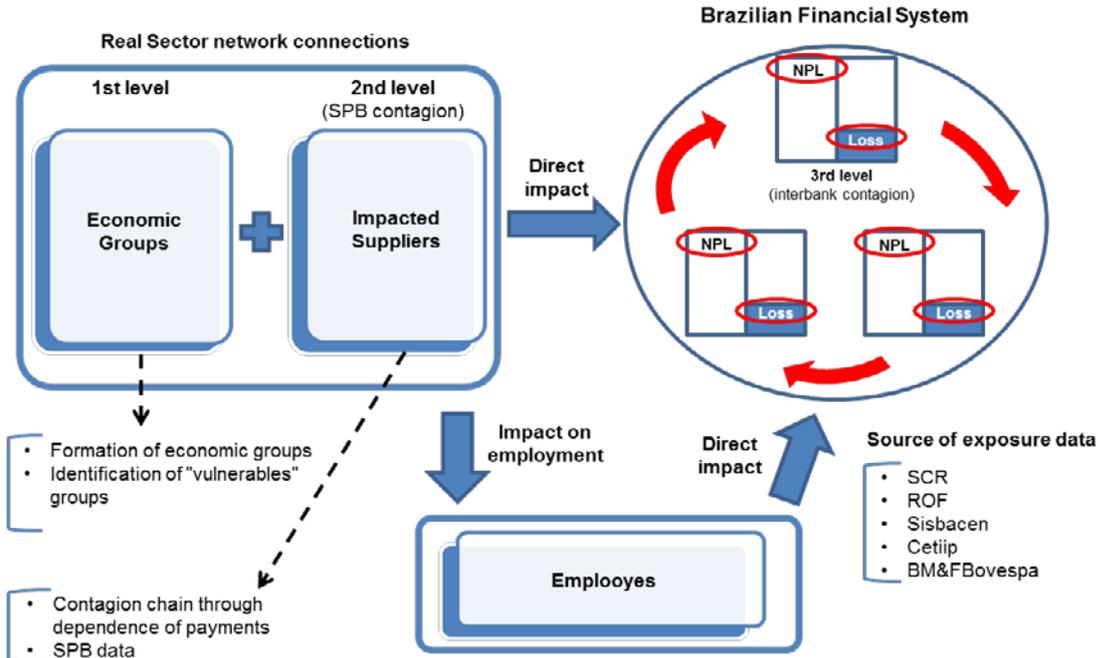
A recent application of the BCB’s contagion model is the assessment of the financial system's resilience to possible default impacts of the core companies mentioned in “Car Wash Operation” (engineering companies, contractors and economic groups to which they belong). Taking this group as a base, a subgroup of vulnerable companies called Group B was formed. The following factors were considered in order to set up Group B: (i) average risk rating in the SCR; (ii) the existence of bankruptcy protection requests; (iii) occurrence of securities payment defaults domestically or abroad; and / or (iv) high dependence on Petrobras in the revenue generation (Figure 3).

The exercise included a number of scenarios contemplating extremely conservative assumptions, such as the default of all the companies members of selected economic groups and all companies and economic groups part of the network of connections of those groups, including employees of all companies. In addition, full losses were simulated in the event of default, excluding guarantees, insurance and other forms of loss mitigation.

It is noteworthy that the economic groups operate in various sectors of the economy, and not all sectors were involved or hit by the events under discussion. In addition, the companies’ business models are mostly structured with a reasonable set of guarantees by the enterprise itself, which could significantly reduce the contagion of an extreme event.

Figure 3

Model Representation



According to the BCB, even with the high degree of conservatism, the simulations indicate that the financial system would be able to absorb the impacts of the defaults of the most vulnerable companies mentioned in “Car Wash” and its respective contagion, including the default of suppliers and their employees. Although profitability of the SFN would be significantly affected, no financial institution would be insolvent, and the impact would generate capital requirements of R\$ 130 million for financial institutions to be back within the limits of minimum capital adequacy ratios. Even boosting the default assumption for all these companies, their respective groups, network connections and employees, the SFN continues to show a high resistance, with no insolvent institution and a capital need of R\$3.4 billion for financial institutions to be back within the limits of minimum regulatory ratios, which is equivalent to only 0.4% of the current regulatory capital requirements of the entire system.

Annex 6: Follow-up of other key FSAP recommendations

This Annex presents the follow-up actions reported by the Brazilian authorities to key FSAP recommendations. The actions mentioned below have not been evaluated as part of the peer review and are presented solely for purposes of transparency and completeness.

Macprudential Institutional Arrangements and Instruments
<i>Recommendation</i> Issue regulation on credit bureaus to ensure broad availability of reliable positive information on borrowers. [BCB]
<i>Follow-up action reported</i> <p>The Positive Credit Bureau, which was regulated in Brazil by Law 12,414, of June 9, 2011 and Decree 7,829 of 17th October 2012, is composed by a set of financial data and payments relating to credit operations and payment obligations, with information on defaulted and ongoing payments, necessary to assess the financial risk of the registered borrower and stored in order to subsidize the provision of credit, the realization of forward sale or other business and commercial transactions involving financial risk.</p> <p>Decree 7,829 / 2012, which regulates the Law of Positive Credit Bureau, entered into force on 1 January 2013, defining the set of data to compose the credit history required to assess the credit risk of the registered borrower, cautioned in its art. 4 that FIs and other institutions licensed to operate by the BCB will provide information in accordance with the guidelines approved by the CMN.</p> <p>In this sense, it was issued the Resolution CMN 4,172, of December 20, 2012, which provides for the provision by FIs and other institutions licensed by the BCB, of information on the performance of individuals and legal entities to the databases mentioned in Law 12,414 / 2011, for the built up of credit history, contributing to the implementation of the Positive Credit Bureau.</p> <p>Resolution CMN 4,172 / 2012 clarifies that, the information to be provided to the databases, for the historical composition of loans and financing operations, of clients of institutions licensed by the BCB should also cover leasing operations, self-financing operations carried out through consortiums, advances and all other operations with loan provision characteristics.</p> <p>Resolution CMN 4,172/2012 and Resolution CMN 4,525, of September 29, 2016 provide that information to the composition of credit history should be forwarded exclusively to databases whose institution holds a minimum equity level of R\$ 70,000,000.00 (seventy million reais), and regarding databases managed by associated companies, the applicable accounting procedures for the consolidation of financial statements must be observed. This requirement is intended to ensure a minimum capacity for managing databases enterprises, with strong financial commitments and that the risks inherent in the operation of Positive Credit Bureau are beard. Additionally, it is necessary that investments in safety and technology are carried out in order to preserve the integrity and confidentiality of the data collected, stored, and accessed through the Positive Credit Bureau.</p> <p>Until December 2015, one hundred and twenty six banks are associated to the Positive Credit Bureau.</p> <p>In January 2016, five of Brazilian largest banks (Bradesco, Itaú-Unibanco, Banco do Brasil, Santander and Caixa Econômica Federal) created the structure of a Credit Intelligence</p>

Manager (GIC) company. The GIC will work in parallel with the Positive Credit Bureau, sharing information with the credit bureaus or selling credit information. The GIC will act beyond the Positive Credit Bureau, acting as a registry of compliant and non-compliant borrowers and services of fraud protection. The objective of the new company is that compliant borrowers pay less for credit or have more favourable terms, to reduce default rate and expand credit offers in the future. GIC will also contribute to foster competition and the quality of information in this segment. Expectations are that the company will be operational in four years. Each of the five banks will have a shareholding participation of 20% of the net worth of GIC, which will also have a Board of Directors, comprised of members of the FIs. The executives will be exclusively involved in the GIC business. The BCB will analyse the shareholding structure so as to license its operations, according to Resolution CMN 4,062 of 2012, which regulates the direct or indirect holding of equity participation in Brazil or abroad, by FIs and other institutions licensed to operate by the Central Bank of Brazil.

Besides the Positive Credit Bureau and the upcoming GIC, another source of positive information on borrowers is the Credit Information System (SCR). The access of FIs to information on SCR about potential borrowers' credit history and the size of their aggregated financial responsibilities are crucial for the sustainable development of the credit market, as it helps market participants to avoid information asymmetries and adverse selection, contributing for the adequate pricing of credit operations. By helping FIs to avoid lending further resources to over indebted borrowers and to lower interest rates for historically good payers, SCR also fosters competition on the credit market and facilitates the decline of average interest rates and banking spreads. On March 2016, Circular BCB 3,786/2016 established that the minimum level of provision of information to the SCR regarding credit operations, from the FIs, would be lowered from R\$1,000.00 to R\$200.00 or approximately USD 50.00. This change has been effective since June 2016 and it implies the receipt of records in more than 500 million transactions monthly.

A number of other interesting and important statistical datasets are still being developed based on SCR data. Information on the turnover of enterprises and the income of individuals are going to allow for the compilation of credit statistics with breakdowns by the companies' size and the individuals' income classes. The outcome is expected to shed light for example on the patterns of indebtedness of different income classes and their behaviour with regards to the payment of financial responsibilities. Such behaviour can also be crossed with information about the number of years of the borrower's relationship with the financial institution, which allows for the assessment of implications of the increased access of lower income classes and smaller enterprises to the credit market.

Recommendation

Ensure compilation and publishing of a housing price index that is based on purchases, with broad geographic coverage. [BCB]

Follow up action reported

Following Resolutions CMN 2,724 and 2,798 from 2000, later consolidated under Resolution CMN 3,658 from 2008, the BCB runs a credit data repository called SCR, to which FIs must monthly report many aspects of their credit portfolio. The information includes details to ensure that every residential mortgage operation is reported, including the appraisal value of the collateral. Using this information, in 2012 the BCB developed the "Financed Residential Real Estate Collateral Value Index (IVG-R)" – an index that tracks

the long-term trend in the value of collateral in granted real estate loans, thus following the long-term trend of home prices and indicating whether or not they are sustainable.

The IVG-R, using collateral appraisal values from real estate loan contracts, calculates the median sales price from all transactions occurred in geographical clusters distributed over different metropolitan areas. The series of medians for each cluster are smoothed using a HP filter to identify its long-term trends, and the monthly variations are then weight-averaged across clusters and metropolitan regions. These smoothed monthly variations are then combined in a chained index, calculated retroactively to march 2001, where the index is set to 100. The geography used is comprised of 11 metropolitan areas in Brazil, which integrated the measurement of the National Index of Consumer Price (IPCA): Belém, Belo Horizonte, Brasília, Curitiba, Fortaleza, Goiânia, Porto Alegre, Recife, Rio de Janeiro, Salvador and Sao Paulo.

Clearing a path for improvement, the CMN has approved Resolutions CMN 4,088 in 2012 and 4,399 in 2015, commanding FIs to register the collateral for housing and auto loans in a centralized repository. Among others, number of rooms, size and state of conservation will complement information from the SCR. For auto loans, the system has been running for some years and information is already being used by BCB. Regarding housing loans, implementation is expected to be finalised in October 2017.

Recommendation

Create a multi-partite, high-level committee, comprising all financial safety net providers, with an explicit mandate for systemic risk monitoring and crisis coordination. [CMN]

Follow up action reported

The Brazilian authorities consider that the institutional arrangement for systemic risk monitoring and coordination is adequate and does not require modification, for the following reasons.

First, the Financial Stability Committee (Comef) is well placed in the BCB, given that banks, which the BCB regulates and supervises, are the main potential sources of systemic financial risk.

Second, coordination with other regulators is ensured by the Coremec, as well as by several Memoranda of Understanding between financial regulators.

Third, top-level coordination is undertaken at the CMN, which is the highest financial system authority and congregates the officials ultimately responsible for all regulatory institutions.

Additionally, the FGC holds an important function in the Brazilian financial system, being a member of the financial safety net in times of crisis, providing liquidity and guarantees to preserve financial stability, and performing its role efficiently in times of need as substantiated by ample evidence. Nonetheless, it is a private institution and cannot have access to information under the banking secrecy laws.

Safety Nets and Crisis Management

Recommendation

Strengthen the procedures and systems of the BCB to deliver ELA. [BCB, CMN]

Follow up action reported

In 2013 the principles of a new framework for central bank emergency liquidity assistance, aligned to the FSAP Recommendation, were submitted to the Board of Governors in 2013. The proposal relies on three main pillars: a new liquidity assistance line, based on private securities and the credit portfolio, as collateral to the operation; design of a risk model, structured in accordance with central bank ELA risk policies; and restructure of the operational framework, from the perspective of adopting a pledging requisite for collateral acceptability and automatic procedures.

The Board agreed on the proposal and decided to phase in its implementation. As a result, an initiative was launched to design collateral eligibility criteria, risk policy and risk model definitions in order to enable quick acceptance of collateral other than government securities, and pre-determine haircuts for asset classes.

The design of collateral and counterparty eligibility policies is concluded. Work on haircut definitions and other risk policies are at early stage. They are expected to be done by first quarter of 2017.

In the aftermath, operational framework for the collateral pledging will be detailed. The expected timeframe for beginning a new IT system design is after all policies and detailed operational features are approved.

Regarding the legal challenges to staff, the new resolution legal framework, will enhance the protection offered to the supervising authority's employees, interveners, directors during temporary administration and liquidation by elevating the responsibility threshold, in actions related to resolution, liquidation, and emergency liquidity assistance to wilful misconduct (the Brazilian legal system does not make a distinction between mere negligence and gross negligence).

Recommendation

Revise the composition of the board of the FGC, require a strict-least cost test with a systemic override for open bank assistance (capped at 50% of FGC's cash resources), and provide an unsecured line of credit from the MF to the FGC at market interest rates. [FGC, BCB, MF]

Follow up action reported

First of all, it is important to point out that, unlike most jurisdictions, in Brazil the deposit insurance fund (FGC) is a private entity, funded and controlled by the industry. When acting to prevent or remedy a bank failure, FGC only uses private money, as it does not have access to public funds.

FGC's board composition was altered by Resolution CMN 4,222 of 2013 which revised and consolidated the norms which establish the bylaws and regulations of the FGC.

By current bylaws and regulations FGC's Board members cannot have any links to FIs, asset management firms or other companies licensed to operate by the BCB, or to companies within the conglomerate, as well as with executives under temporary leave from their functions. Members of class associations cannot be members of the board of the FGC. The term of the Board members will be of up to three years and they can only be re-elected for one additional new mandate.

Also, established by Resolution CMN 4,222, the Least Cost Principle is embedded in article 4, paragraph 2, of FGC's bylaws, which states that financial assistance transactions entered into by FGC cannot exceed the amount that would be spent by the fund in case the institution

was liquidated. Also establishes that FGC's assistance should be capped at up to 25% of the FGC's net worth, for the set of operations carried out with each member-institution or with all member-institutions of the same financial conglomerate, and up to 50% of the FGC's net worth for the total value of operations.

Article 4, paragraph 3, of the bylaws authorizes the FGC to depart from the Least Cost Principle only in exceptional circumstances, in view of adverse scenarios in the financial markets, formally recognized by the BCB, and aimed at protecting the financial system stability.

Regarding an unsecured line of credit from the MF to the FGC, article 28 of the Law 101 of 2000, the Brazilian Fiscal Responsibility Law establishes that if stated in specific legislation, public funds, including those arising from credit operations, can be used to rescue member institutions of the National Financial System, even though recovery loans or financing aimed at enabling the transfer of the shareholders control.

BCB is comfortable with this approach because FGC, as a private entity, has a number of alternatives in order to raise funds to repay for the loans it receives, e.g. the issuance of receivables to be subscribed by its participants, the establishment of extraordinary contributions etc. This tends to minimize losses incurred by the State in the recovery of systemic important banks.

Recommendation

Remove legislative impediments and strengthen the purchase and assumption and bridge bank statutes; develop the operational capacity to implement them rapidly (Box 3). [CMN, BCB, FGC]

Follow up action reported

In line with the set of guidance on Key Attributes of Effective Resolution Regimes issued by the FSB in October 2014, the BCB has prepared a draft bill to implement a new resolution framework.

Under this new resolution framework, existing tools, such as reorganization, good-bank/bad-bank policy, and liquidation are made more effective, and new measures are introduced, such as the possibility to create bridge banks and to adopt bail-in (which will be a pre-condition for any injection of public funds in the institution). In addition, the draft bill contains provisions regarding cooperation and exchange of information with foreign resolution authorities in connection with the resolution of multinational firms.

The new resolution legal framework confirms the BCB, the CVM and the Susep as Brazilian resolution authorities for FIs, financial market infrastructures (some of them, in the case of the CVM) and insurance companies, respectively.

In addition to the draft bill, the CMN and the BCB will also issue a number of infra-legal regulations to introduce some of the tools set forth in the KAs that do not depend on congressional approval.

Recommendation

Extend legal protection to all financial sector supervisory agencies, and elevate the threshold for actions against employees of these agencies, BCB-appointed directors, intervenors, or liquidators to gross negligence. [MF, BCB]

Follow up action reported

In addition to the AGU's legal assistance, the BCB may also grant legal assistance directly to their employees by means of the Attorney General of the Central Bank of Brazil (BCB's legal department), pursuant to "item 1-3 - Legal Assistance" of the Staff Manual of the BCB (MSP). The legal assistance covers the defence of the BCB's employees regarding acts committed in the exercise of their duties and in the public interest. This assistance may include representation before the Federal Public Prosecutor, when such persons are accused of perpetrating crimes while performing their duties. The BCB's legal department may file a petition for habeas corpus and writ of mandamus in favour of the employees. To obtain the legal assistance, the request must be reviewed in advance by the BCB's legal department and, subsequently, submitted to the Board of Governors. Should the Board of Governors approve the representation, the BCB's legal department promotes the legal defence of the agent and without any costs of legal representation to the BCB's employees. There is ample evidence that this structure is agile and favours a prompt defence of supervisors.

In addition, the new resolution legal framework above mentioned, enhances the protection offered to the resolution authority's employees, interveners, directors during temporary administration and liquidation by elevating the responsibility threshold, in actions related to resolution or liquidation, to wilful misconduct (the Brazilian legal system does not make a distinction between mere negligence and gross negligence).

This does not mean that the authorities are disobliged to indemnify any losses caused to third parties as a consequence of abuse of their powers, regardless of negligence or wilful misconduct. This is an equitable provision and an important guarantee to the rule of law.

Capital Markets

Recommendation

Extend tax incentives on infrastructure bonds to infrastructure FIDCs. [MF].

Follow up action reported

In order to foster the development of a private market for long term financing and the participation of private enterprises in long term investments projects, especially in infrastructure, the Brazilian Government edited a provisory Act in December 2013, which was converted into Law 12,844 in July 2013, extending the tax benefit on Infrastructure Bonds, on Certificates of Real Estate Receivables (CRI) and on quotas of Investment Funds, as established by Law 12,431 in June 2011, to quotas of Receivables Investments Funds Infrastructure (FIDC-IE).

The eligibility of the security is conditional to the following prerequisites: i) must be constituted as a closed-end fund and regulated by the Brazilian Securities Commission (CVM), and the receivables' originator must be a non-financial institution; ii) bonds can have prefixed rates or be inflation indexed; iii) duration has to be above 6 (six) years; iv) must hold at least 85% of its asset under management (AUM) in infrastructure bonds and certificates of real estate receivables of "priority projects", as defined by Law 12,431 in June 2011 - article 2. It should be noted that, during the first two years, the minimum investment percentage can be maintained in 67% and the maximum deadline for framing this minimum investment percentage is 180 days, starting from the first payment. The current stock - in April 2016 – is R\$ 399.6 million.

Thus, the recommendation has been put in to effect.

Recommendation

Issue stricter market-making rules (e.g., apply a narrow set of the same benchmarks to all market makers), linked to improved incentives (e.g., access to MF's securities lending facilities). [MF]

Follow up action reported

On February 2015, a new set of rules governing the Brazilian National Treasury primary dealers system was put in effect. Under these new rules, higher standards in order to market makers be entitled to green-shoe were applied: dealers are required to achieve a market share of 5% of primary issuances instead of 4% during prior regulation; secondary market share goals for 4 out of 5 selected benchmarks were set to 6% for each dealer (up to 8 out of 10 dealers for each benchmark); Although the final effect is similar, instead of reducing the number of benchmarks to be traded by each dealer, the Treasury opted for increasing the number of benchmarks that each dealer has to trade in order to gather benefits or even to keep being part of the dealers group. Lastly, primary dealers have to abide to stricter rules for spreads on benchmarks traded on electronic platforms.

Much of the incentives provided are aimed towards the improvement of electronic trading platform liquidity. In that sense, a market share bonus in primary dealer's evaluations for trades on electronic trading platforms was also given. Finally, in order to concentrate the liquidity in the electronic market in a single platform, the dealers are now evaluated based in their performance in just one platform of their choice, while previously negotiation and price dissemination in 4 different platforms was considered.

Thus, the recommendation has been put in to effect.

Recommendation

Shift BNDES operations towards co-financing with institutional investors of a broader set of companies and projects to provide market access and facilitate long-term financing. [MF, BNDES]

Follow up action reported

In the past few years, the BNDES has taken strides to facilitate long term financing.

On June 2015 it unveiled a program, developed in partnership with the Brazilian Association of Financial and Capital Markets Companies (ANBIMA), to foster the fixed income market. The program will allow companies which issue debentures linked to investment projects to have access to a higher proportion of credit from the BNDES, at the lowest financial cost offered by the development bank, the long term interest rate (TJLP).

Those measures were elaborated by BNDES and ANBIMA, with support and participation of the Ministry of Finance and the Ministry of Planning, Development and Management.

With the common understanding that the development of the capital markets in an essential part of Brazil's growth strategy, the program main focus is to direct private savings to long term financing, using the TJLP credits as a lever to propel the issue of debentures. The project aims to have an increase in the supply of fixed income securities linked to projects financed by the BNDES and subscribed in market conditions.

Measures are applicable to companies with earnings equal or over R\$ 1billion (approximately USD 250 million) and the minimum value requested for the debenture issue is R\$ 50 million (approximately USD 12.5 million). It is estimated that through linking

financing through the BNDES with debenture issuance, the financing cost for a company could decrease in up to 2 percentage points per year.

Insurance and Pensions

Recommendation

Provide SUSEP and PREVIC with the same legal status as CVM (e.g., fixed-term appointments and clear mandates for board members). [MPS, MF]

Follow up action reported

In December 2015, SUSEP sent to the MF a draft bill, with the requirements for the appointments and mandates of their board members, including fixed periods and mismatched mandates.

This draft bill was developed after extensive discussions within Susep, with contributions from representatives of its supervised entities and SUSEP's union. Currently, this draft bill is under evaluation by the MF.

Regarding Previc, there is a bill (PLS 361/2015) in progress in the National Congress that deals with the proposal of composition and mandate for the directors of Previc, improving the already existing governance in the institution.

Recommendation

Issue a secondary regulation on brokers' self-regulation, which should include a mandatory affiliation to the self-regulating entity, and closely supervise its implementation. [SUSEP]

Follow up action reported

On October 11, 2013, SUSEP Ordinance 5568 granted permission to the Brazilian Institute of Self-Regulation of Insurance Brokerage Market, Reinsurance, Capitalization and Open Pension Funds – IBRACOR to operate as a self-regulating entity.

IBRACOR, however, has not been able to operate the monitoring of all insurance brokers regardless of their membership to a self-regulating entity. According to Part I of Article 2 and item IV of article 17, CNSP Resolution 233/2011 (wording amended by CNSP Resolution No. 251/2012) based on the opinion of the attorney's office of the treasury, PGFN No PGFN / CAF / N° 2232/2011, only those insurance brokers which are associated to the self-regulating entity are applicable to its supervision.

Additionally, another legal impediment is the interpretation of art. 127-A of the Supplementary Law 137/2010, which establishes that, in order to be monitored, the broker is required to be a member of the self-regulatory entity.

Recommendation

Implement the required regulation for consolidated supervision, including the introduction of ERM and capital requirements at group level. [SUSEP, CNSP]

Follow up action reported

In June 2014, a technical group within Susep was created, in order to evaluate the compliance of Susep's work processes to the Insurance Basic Principle of IAIS No. 23

(group supervision) and to present an action plan for the implementation of necessary compliance measures to the IBP. The WG report was completed in June 2015.

Based on this report, the solvency monitoring department proposed a model for the supervision of groups, which is under consideration by the other departments in Susep. Currently, the insurance companies report monthly on Susep's FIPSUSEP the group to which they belong, according to the criteria defined in regulations. The new proposal extends the group concept for supervisory purposes and proposes a simplified criteria for monitoring provisions, capital and collateral assets. A new system for monitoring provisions, capital and collateral at the group level has already been developed.

Financial Inclusion

Recommendation

Establish a dedicated consumer financial protection unit [CMN, MOJ]

Follow up action reported

In 2012, the National Consumer Bureau (Senacon) was created, with the assignment of coordinating the National Consumer Defense System (SNDC). Its powers are defined by Law 8.078/90 and by Decree 2,181/97 and 7,738/12. The Senacon is responsible for the planning, development, coordination and implementation of the National Policy for Consumer Relations, with the main objectives of: (i) ensuring the protection and exercise of the rights of consumers; and (ii) promoting harmonization in consumer relations. It also carries out market monitoring through research, consultations and public hearings and coordination with regulatory agencies: the BCB; ANVISA; Inmetro; CVM and Anatel.

In 2013, Decree 7963 of March 15, transformed consumer protection in state policy with the creation of the Consumer and Citizenship National Plan, promoting coordinated actions among the federal agencies for consumer protection and creating the National Chamber of Consumer Relations, which integrates the Governing Council of the Presidency and will have administrative support provided by the Ministry of Justice.

For making a better and closer bridge between the BCB and the citizens in general, an important initiative in 2012 was the creation of the Institutional Relations and Citizenship area (DIREC). This area is responsible and dedicated -- as suggested by the FSB -- to coordinate citizen financial issues in the BCB, such as financial education, financial inclusion, institutional communication and citizen services in general, including the Ombudsman activities. This new area was an important step in fulfilling the strategic objective of promoting improvements in communication and in the relationship with society in general based on principles of greater transparency and social responsibility.

In this context, also in 2012, the Department of Supervision of Conduct (DECON) was established. The concept, based on the twin peaks model, was to organise a new and distinct component to address conduct (or behavioural) supervision, with a focus on adherence to standards and regulations.

For a stronger integration of activities for the improvement of financial consumer protection in Brazil, the BCB also entered into agreements with the Senacon and with the Ministério Público Federal (Federal Prosecution Service), organizing routine meetings with them to exchange information and good practices.