



GUIDE FOR NONRESIDENT INVESTORS



BOIS

[B]



BRAZILIAN
EXCHANGE
AND OTC

One of the world's largest financial market infrastructure companies

B3 S.A. - Brasil, Bolsa, Balcão is one of the world's largest financial market infrastructure companies, providing trading services in an exchange and OTC environment. B3 is a public company traded under ticker symbol B3SA3 on the Novo Mercado premium listing segment and its stock is tracked by the Ibovespa, IBrX-50, IBrX and Itag indices, among others. It also has a solid tradition of innovation in products and technology and is one of the largest companies in market value holding a prominent global position in the stock market industry.

B3's scope of activities include the creation and management of trading systems, clearing, settlement, deposit and registration for the main classes of securities, from equities, corporate fixed income securities to currency derivatives, structured transactions and interest rate, and agricultural commodities. B3 also acts as a central counterparty for most of the trades carried out in its markets and offers central depository and registration services.

Through its vehicle and real estate financing unit, the Company offers products and services that streamline local credit analysis and approval throughout Brazil, making access to secured loans easier, faster and safer. In vehicle financing, it is a leader in the provision of electronic delivery services of the information required for the registration of contracts and annotations of encumbrances with traffic authorities.

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INTRODUCTION

The Brazilian financial system is recognized worldwide for the scope and sophistication of the products it offers, the efficiency and safety of its infrastructure and the mature and wide-ranging regulation to which it is subject. This recognition is evidenced by the growing and consistent presence of Nonresident Investors (NRI) in the various market segments: more than 50% (fifty per cent) of all stock investments in Brazil are made by NRIs, who also account for about 40% (forty per cent) of the investments in the listed derivatives market.

B3 understands that some of its specific features and characteristics can generate doubts and investors interested in Brazil may need guidance in gathering information and figuring out where to start.

The goal of this document is to look at the Brazilian marketplace and B3's infrastructure from the NRI's perspective, to answer questions that range from the on-boarding process to the risks involved in settling transactions and posting collateral.

This document is organized as follows:

Chapter	Description	pag
I	Gives a general overview of the Brazilian marketplace both in terms of the structure and governance of the Brazilian Financial System (SFN) and the market infrastructure where B3 plays a major role.	10
II	Describes the process of becoming an NRI, which steps to take and which relationships to build, as well as the role and responsibilities of each institution with which the NRI interacts.	16
III	Explains Brazilian policies for market integrity.	34
IV	Explains the benefits and implications of having a beneficial owner account structure.	38
V	Provides summarized information on the products available for trading at B3.	42
VI	Presents the regulatory framework and the operational characteristics of foreign exchange transactions.	44
VII	Describes B3's role as an exchange, a central counterparty, a securities settlement system, a trade repository and a central securities depository. Other issues discussed in detail include applicable regulations and operational details relating to the trading platform, safeguard structures, risk and collateral management in the central counterparty, chain of responsibilities in the settlement process, treatment of failures as well as segregation of assets.	48
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I. BRAZILIAN MARKET – GENERAL OVERVIEW

1. BRAZILIAN NATIONAL FINANCIAL SYSTEM – STRUCTURE AND GOVERNANCE

The Brazilian National Financial System is comprised of financial institutions as well as supervisory and oversight bodies operating in different markets, in particular the capital, money, credit and foreign exchange markets. The building blocks of the National Financial System, as it stands today, were created by Law 4.595/1964, also known as the bank reform law, and by Law 6.385/1976, which created the nation's capital markets.

From a structural point of view, the supervisory and oversight bodies as well as the institutions that operate under the umbrella of the Brazilian National Financial System are guided by three normative entities: the National Monetary Council (CMN), the National Private Insurance Council and the Supplemental Pensions Management Council. Nonresident investment falls under the regulatory umbrella of the CMN and its supervisory bodies.

The National Monetary Council (CMN) is comprised of the Minister of Finance, the Minister of Planning and the President of the Central Bank of Brazil. It is the highest authority within the Brazilian National Financial System and responsible for formulating monetary and credit policies in general. The main Brazilian National Financial System supervisory bodies, the Central Bank of Brazil and the Securities and Exchange Commission of Brazil (CVM), are both subordinate to the CMN.

The Central Bank of Brazil (BACEN) is responsible for enforcing monetary policy, for managing international reserves and overseeing foreign capital and credit.

From the NRI's perspective, BACEN:

- Monitors the inflow and outflow of funds related to nonresident investment, as part of its role as monetary policy maker and manager of international reserves, thus requiring those movements to be registered within the BACEN systems.
- Authorizes and directly regulates institutions authorized as central counterparties, securities settlement systems and trade repositories, such as B3.

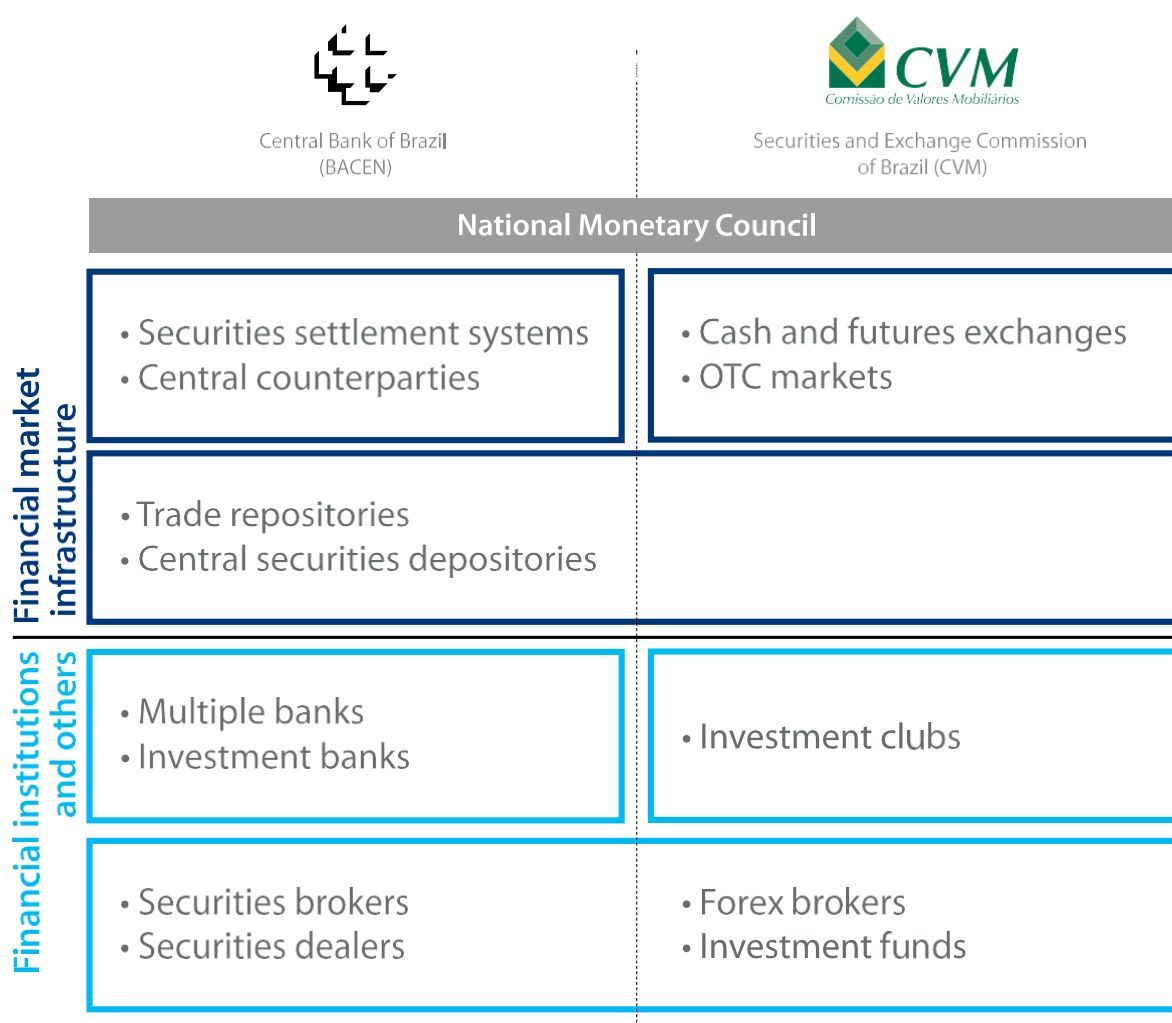
The Securities and Exchange Commission of Brazil (CVM) is responsible for regulating and overseeing the capital market, including securities issuers, exchange and OTC markets and institutions intermediating and distributing securities (brokers and banks). The CVM aims to keep the market efficient and foster development, whilst striving to protect investors in the securities market, enforcing rules regarding information disclosure and transparency.

From the NRI's perspective, CVM:

- Authorizes and regulates institutions that act as exchanges, central securities depositories and trade repositories, such as B3.
- Authorizes institutions to act as Local Custodians.

- Maintains the Foreign Investor Registration system where Nonresident Investors must be registered by the Local Custodian. The registration generates the “CVM Code” – a Nonresident Investor identification code for operating in the Brazilian capital and financial markets.

From an operational point of view, the SFN is comprised of a large set of financial institutions (banking and non-banking) that act directly in the capital, money, credit and foreign exchange markets. It is also comprised of all of the support entities such as the exchanges, trade repositories, central counterparties, securities settlement systems and central securities depositories, among others. The following chart shows the main components of this structure¹:



2. THE BRAZILIAN FEDERAL REVENUE SERVICE (RFB)

The Secretary of Federal Revenue was created by Decree 63.659/1968 and, having incorporated the Secretary of Social Security Revenue after Law 11.457/2007, became the Brazilian Federal

¹ The purpose of this illustration is to help readers become familiar with the structure of the Brazilian National Financial System. It is not an exhaustive description and does not include all of the components of that system. For further details please go to www.bcb.gov.br.

Revenue Service (Receita Federal do Brasil - RFB).

The Brazilian Federal Revenue Service is directly subordinated to the Ministry of Finance and is responsible for the administration of federal taxes and for customs control.

From the NRI's perspective the RFB:

- Maintains both the National Registration for Corporate Taxpayers (Cadastro Nacional de Pessoa Jurídica - CNPJ) as well as the National Registration for Individual Taxpayers (Cadastro de Pessoa Física - CPF). The CVM's Foreign Investor Registration is fully integrated with the RFB system so that upon registration of the Nonresident Investor at CVM, the RFB system automatically generates the "CNPJ / CPF Code" - the Nonresident Investor identification code for tax purposes.

3. BRAZILIAN FINANCIAL MARKET INFRASTRUCTURE AND THE ROLE OF B3

Following the efforts made by the Financial Stability Board (FSB) to strengthen financial market infrastructure, in April 2012, CPSS-IOSCO published a document entitled "Principles for Financial Market Infrastructures - FMIs", containing recommendations for a broad set of institutions acting in the financial system.

The institutions that comprise the market's infrastructure in Brazil are fully compliant with the international recommendations for FMIs. In fact, in many cases, their business models exceed recommendations, with features that promote stability, safety and efficiency, which we will refer to throughout this document.

In addition to the payments system, this infrastructure includes exchanges, securities settlement systems, which may or may not also act as central counterparties, and central securities depositories. These institutions also act as trade repositories for different markets, providing functions that go beyond mere registration of transactions, positions and contracts. This infrastructure also handles primary security offerings and secondary trading of securities and both exchange-traded and OTC derivatives.

B3 plays a major role in the Brazilian financial market infrastructure and is fully compliant with the FMI recommendations.

B3 is a demutualized self-listed corporation that maintains a vertically integrated structure for supporting trading and post-trade activities in the Brazilian financial market.

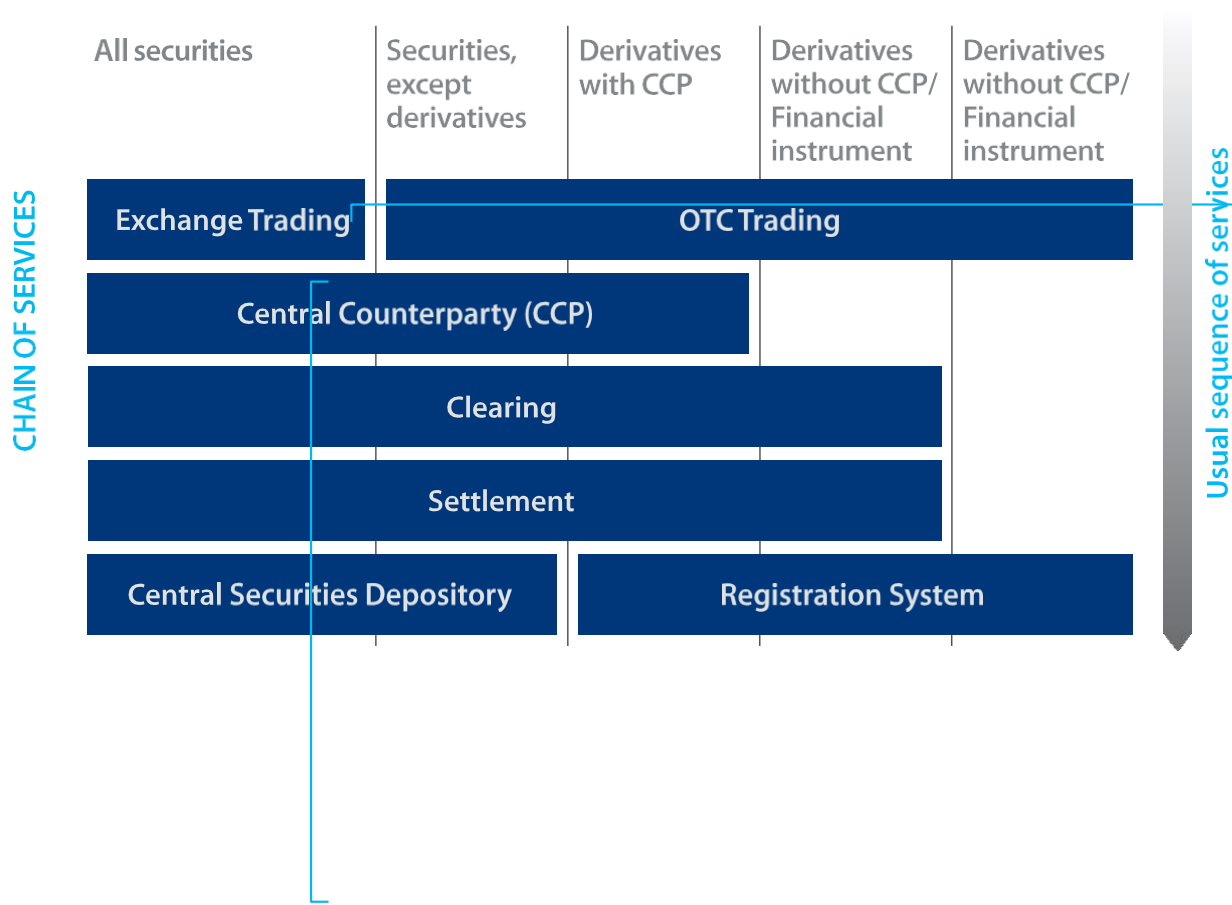
We would like to draw attention to the following topics:

- B3 is a Stock, Futures and Commodities Exchange, approved by the Securities and Exchange Commission of Brazil (CVM). B3:

- Manages an integrated multi-asset trading platform - the B3 PUMA Trading System, which encompasses equities, corporate bonds, derivatives and commodities.
- Provides pre and post-trade transparency as well as a reliable price formation.
- Is currently the single venue for exchange-traded products in Brazil.
- B3 is a Trade Repository for OTC transactions in both private fixed income and derivatives markets, approved by the Central Bank of Brazil and the Securities and Exchange Commission of Brazil .
- B3 is a Securities Settlement System and a Central Counterparty, approved by the Central Bank of Brazil. B3 expects to implement the integration of its post-trade infrastructure for equities, private fixed income and derivatives in a single clearinghouse in early 2017. The B3 Clearinghouse:
 - Maintains a solid safeguard structure, also approved by the Central Bank of Brazil, enabling it to guarantee settlement of transactions even in the case of failure of its two largest net debtors (Lamfalussy Plus).
 - Supports risk and collateral management systems that employ a recently modified procedure for calculating risks (Closeout Risk Evaluation).
 - Has direct access to the Brazilian Payment System which allows for settlement of transactions in central bank money.
 - Adopts strict delivery versus payment principles.
- B3 is a Central Securities Depository, approved by the Central Bank of Brazil and the Securities and Exchange Commission of Brazil, for a wide range of securities and for gold The B3 Central Securities Depository:
 - Maintains an account holding system for safekeeping that identifies not only the custodian but also the final beneficial owner of securities.
 - Processes corporate actions updating the beneficial owner accounts, effecting payments to custodians via its direct link to the payment system.
 - Promotes daily reconciliation of positions kept in individual accounts with the registrar and the custodians.

The following chart summarizes the role of B3 as a market infrastructure provider for different market segments:

TYPES OF SECURITIES AND FINANCIAL INSTRUMENTS



II. BECOMING A NONRESIDENT IN- VESTOR IN BRAZIL

To trade in the Brazilian financial and capital markets, Nonresident Investors (NRI) need to:

1. Designate a Legal Representative;
2. Designate a Tax Representative;
3. Designate a Local Custodian;
4. Choose a Local Broker;
5. Choose a Carrying Broker (optional); and
6. If using Direct Market Access (DMA), define the type of connectivity to B3's Trading Platform

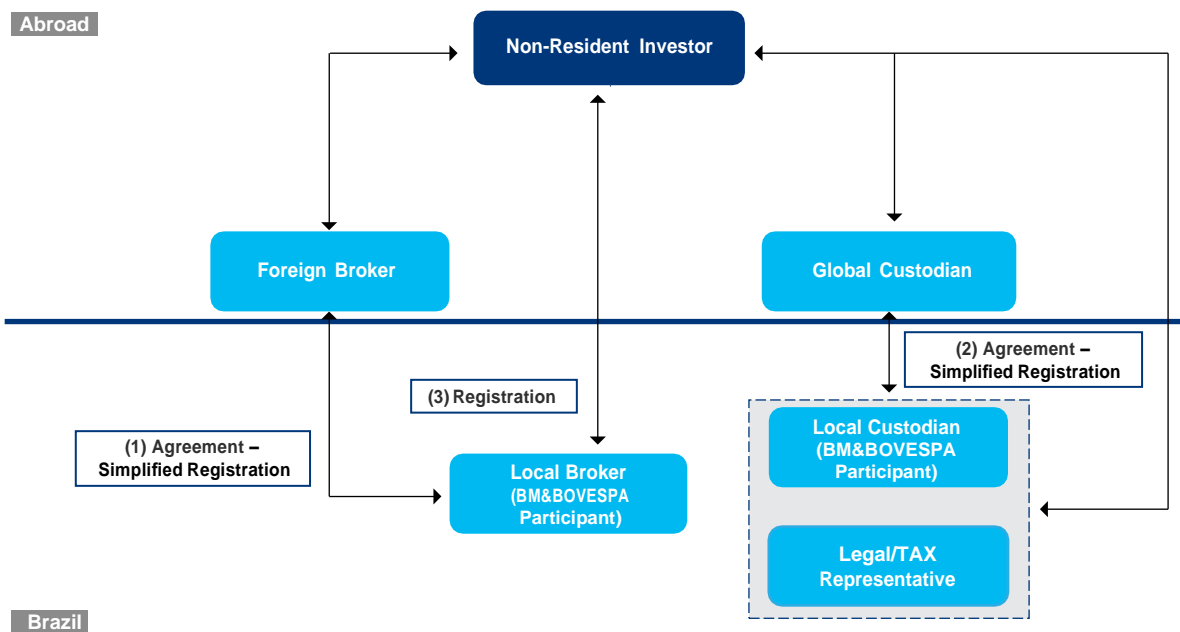
Nonresident Investors can access Brazilian financial and capital markets through a variety of relationship arrangements, for example:

- Through their asset managers/administrators, Nonresident Investors can use their relationship with foreign intermediaries to establish a relationship with the Local Broker in Brazil;
- Still through their asset managers/administrators, Nonresident Investors can establish their relationship with the Local Broker in Brazil without having to use the intermediation of a foreign broker; or
- Alternatively, Nonresident Investors can establish a direct relationship with the Local Broker in Brazil without having to use the intermediation of a foreign broker, asset manager or intermediary.

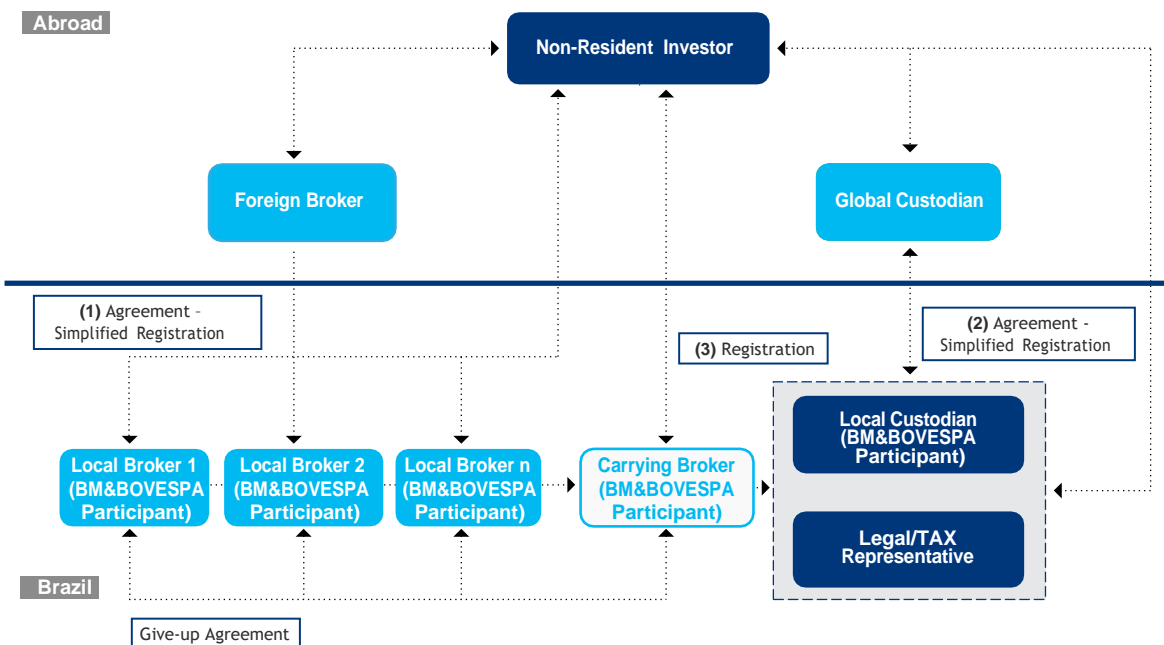
For legal representation purposes and provision of custody services, the Nonresident Investor usually uses their established relationship with their Global Custodian to access the local market.

The flows below illustrate the relationship arrangements described above.

Flow 1 – Nonresident Investor through Foreign Broker or directly with the Local Broker



Flow 2 – Nonresident Investor using a Carrying Broker



IMPORTANT

The Nonresident Investors (NRI) can trade through a very flexible structure of a multiple Local Brokers and, consequently, multiple Clearing Members, depending of their strategies.

The NRI can also designate different institutions to act as Legal Representative, Tax Representative and Local Custodian, since there are no regulatory requirements that those relationships be unique. On the opposite, the NRIs can seek for the better commercial and operational ar-

rangement in order to fulfill their investment objective. Nevertheless, the regulation does require that the Legal Representative is a financial institution under the responsibility of the Brazilian Central Bank and the Securities Commission.

The implication of choosing to establish a multiple representation structure is that the NRI will have to register separately with each Legal Representative and Local Custodian.

Nonetheless, it is not uncommon that the same institution or institutions belonging to the same financial conglomerate act as Legal and Tax Representatives as well as Local Custodian for the NRI.

NONRESIDENT INVESTOR - REGISTRATION PROCESS

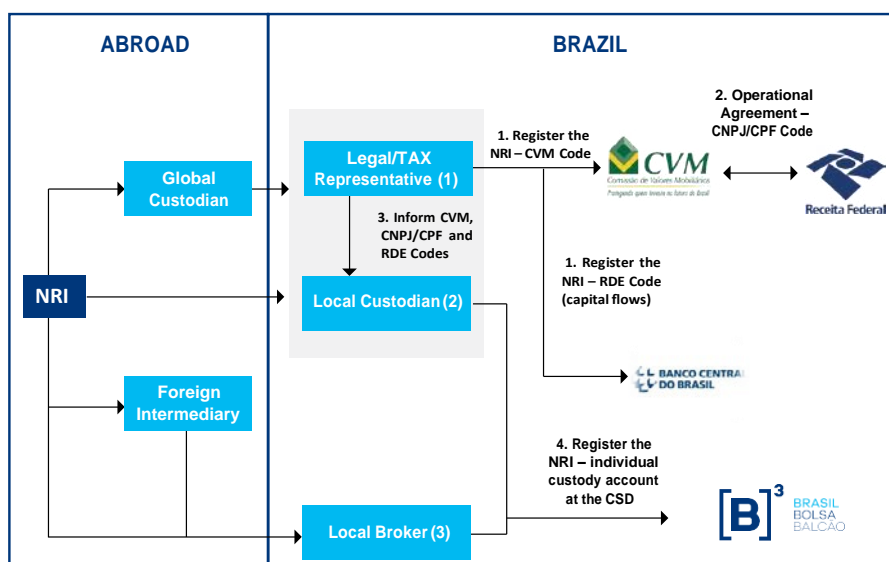
According to the Brazilian legislation, the Nonresident Investors have to be registered with:

- The Securities and Exchange Commission of Brazil (Comissão de Valores Mobiliários - CVM);
- The Central Bank of Brazil (Banco Central do Brasil - BCB)
- The Brazilian Federal Revenue Service (Receita Federal do Brasil - RFB); and
- B3.

Next in this chapter, the regulation supporting the NRI's registration and the corresponding procedures are presented. –

The flow below gives an overview of the registration process.

Nonresident Investor – registration flow



- (1) Necessarily a Financial Institution under the supervision of the Central Bank and the CVM
 (2) Authorized by the CVM and a BM&FBOVESPA Participant
 (3) BM&FBOVESPA Participant

1. LEGAL AND TAX REPRESENTATIVES

According to CMN Resolution 4.373/2014, before starting operations in the Brazilian financial market, NRIs have to designate their Legal and Tax Representatives. The chart below identifies the main regulations that are applicable to these Representatives and describes their functions and responsibilities.

LEGAL REPRESENTATIVE

 REGULATION	 FUNCTIONS
CMN Resolution 4.373/2014	<p>Registers the NRI's investment flows and balances in the Central Bank's system (SISBACEN) / Electronic Capital Registration (RDE Portfolio)</p> <p>Maintains an individualized control of capital inflows and outflows on behalf of the NRI in the RDE</p> <p>Provides the Securities and Exchange Commission of Brazil and the Central Bank of Brazil with the information requested</p> <p>Communicates the cessation of the representation contract</p> <p>Receives, on behalf of the NRI, court citations, subpoenas and judicial notifications</p>
CVM Rule 560/2015	Registers the NRI in the Securities and Exchange Commission of Brazil's Foreign Investor Registration system (CVM Code)
CMN Resolution 3.844/2010 BACEN Circular 3.752/2015	Registers the NRI in the Central Bank system (SISBACEN) (RDE Code)
Normative Instruction Federal Revenue Service (RFB) 1.634/2016	Registers the NRI in the RFB National Registration for Companies (CNPJ Code) ² .
Normative Instruction Federal Revenue Service (RFB) 1.548/2015	Registers the NRI in the RFB National Registration for Individuals (CPF Code).
Law 8.981/1995	<p>Meets all tax obligations resulting from transactions executed on behalf of the NRI</p> <p>Responds to the Brazilian tax authorities in case of information request or claims</p>

² The CVM's Foreign Investor Registration is integrated to the RFB system so that upon registration of the Nonresident Investor in CVM, the RFB system generates automatically the "CNPJ Code".

TAX REPRESENTATIVE

REGULATION

Law 8.981/1995

FUNCTIONS

Meets all tax obligations resulting from transactions executed on behalf of the NRI

Responds to the Brazilian tax authorities in case of information request or claims

In **Annex 1 – Legal Representative and Nonresident Investor Registration Procedures**, you will find the procedures for the Legal Representative to:

- Register the NRI with the Securities and Exchange Commission of Brazil (CVM) and obtain the “CVM Code” for transaction identification purposes;
- Register the NRI with the Brazilian Federal Revenue Service (RFB) and obtain the “CNPJ or CPF Code” for taxation purposes;
- Register with the Central Bank (BACEN) and obtain the “RDE Code” for designating capital inflows and outflows.

2. LOCAL CUSTODIAN

According to CMN Resolution 4.373/2014, before starting operations in the Brazilian financial market, the NRIs have to appoint one or more institutions to act as **Local Custodians** among those approved by the Securities and Exchange Commission of Brazil (CVM). **The list of authorized custodians is available at:** <http://sistemas.cvm.gov.br/asp/cvmwww/invNRes/tabecus.asp>

The Non-resident Investor (NRI) can have more than one Local Custodian in Brazil. The implication regarding the NRI’s registration process is that the NRI will have different CVM and CNPJ/CPF Codes for each Local Custodian.

It is not uncommon that Nonresident Investors designate the same institution to act simultaneously as Local Custodian and Legal Representative, although the regulation does not require such superposition of roles and the responsibilities of each function are specific and well defined. Even if the institution acting as Local Custodian is not the same acting as Legal Representative, they usually belong to the same financial conglomerate.

The chart below identifies the main functions and responsibilities, as well as the corresponding regulatory framework for Local Custodians.

LOCAL CUSTODIAN

REGULATION	FUNCTIONS
CMN Resolution 4.373/2014	<p>Holds NRI's assets and securities.</p> <p>Holds underlying assets of authorized Depositary Receipt (DR) programs.</p> <p>Registers the NRI's investment flows and updates balances related to the issuance and cancellation of DRs in the Central Bank SISBACEN/Electronic Capital Registration (RDE Portfolio).</p>
CVM Instruction 542/2013	<p>Maintains investors' identification data (registration) and supporting documentation.</p> <p>Maintains assets and securities in individualized custody accounts in the name of the final beneficial owners.</p> <p>Effects instructions received from the NRI to move assets and securities among custody accounts.</p> <p>Processes corporate actions related to the assets and securities under custody (asset servicing).</p> <p>Promotes daily reconciliation of positions held in the custody accounts on behalf of NRIs with those designated by the Central Securities Depository (CSD).</p> <p>Effects the registration of liens and/or rights related to the assets and securities under custody.</p> <p>Provides the NRIs with monthly statements containing information on their holdings, transfers of securities, and rights, within the period and corporate actions.</p>
B3 Central Securities Depository Rules and Procedures	<p>All the above.</p> <p>In B3 Central Securities Depository's Rules and Procedures, the Local Custodian is the Custody Agent.</p> <p>Registers the NRI in B3 centralized registration system, thus creating an individual account for the NRI (B3 account number).</p>
Law 9.613/1998 (Anti-Money Laundering Law)	<p>Maintains the NRI identification data and updates the information periodically or as necessary (Know Your Customer)</p> <p>Maintains the registration of assets, securities and positions held by the NRI, as well as related transactions.</p> <p>Maintains internal controls and monitoring capabilities for identifying transactions possibly associated with fraud, money laundering and other financial crimes</p>

According to CVM Instruction 542/2013, the following institutions are eligible for requiring authorization as custodians: commercial, multiple and investment banks, brokerage firms, dealers, central securities depositories and clearinghouses.

The requirements involve maintaining adequate operational and technological capabilities that enable safe and reliable registration of assets and securities under custody as well as the control of positions and the maintenance of custody accounts.

The applicant should submit its Registration Request to CVM, which has up to 90 (ninety) days to make an assessment. Authorization is granted automatically after this deadline regardless of whether or not the CVM has manifested itself.

THE NRI DEPOSIT ACCOUNT AT B3

The Local Custodian is a participant of the B3 Central Securities Depository, whose rules and procedures define it as the Custody Agent. The Custody Agent is responsible for the Know Your Customer (KYC) procedure applied to the NRI.

The Custody Agent is responsible for registering the NRI at the BM&BOVESPA Centralized Investor Registration System thus enabling the NRI to carry out transactions in B3 market segments. Upon the NRI's registration by the Custody Agent, BM&BOVESPA creates, automatically, a deposit account in the name of the final NRI (the beneficial owner) under the responsibility of the Custody Agent. The Custody Agent is fully responsible for the veracity and accuracy of the information provided about the NRI as well as for updating such information periodically (at least every 24 months).

B3 associates a unique operational numerical code to each NRI deposit account so that all transactions effected in the BM&BOVESPA environment are linked to this code. Custody Agents have the ability to define the deposit account number; otherwise a random code will be assigned by B3.

The NRI can have more than one deposit account within B3 with a one or more Local Custodians.

3. LOCAL BROKER

To start trading at B3, Nonresident Investors must also choose the Local Broker(s) that will execute their trades. The Local Brokers are subject to various regulations aiming for investors' protection, for high quality services and for efficiency. The chart below identifies their main functions and responsibilities and the corresponding regulatory framework.

LOCAL BROKER

REGULATION	FUNCTIONS
CVM Instruction 505/2013	Maintains investors' identification data (registration) and supporting documentation.
	Identifies the final beneficial owner in all trading orders, offers and transactions.
	Provides information to customers on all executed trades, holdings and positions both in cash and securities.
	Keeps controls of customers' holdings/positions in cash and securities and periodically reconciles them with executed orders and information provided by central securities depositories and clearinghouses.
	Effects payments to the NRI in the cash account maintained by the NRI with its Local Custodian.
CVM Instruction 539/2013 - suitability	Provides customers with information on products available and the corresponding risks involved.
	Unbundles fees so that the customer can differentiate between broker's fees and central securities depositories or clearinghouses' fees. (Not the same as MiFID II unbundling)
CVM Instruction 539/2013 - suitability	Ensures the suitability of products, services and transactions to the investors' objective and the investors' understanding of related risks.
	Verifies the compatibility between investors' transactions and their financial capability.
CMN Resolution 1655 and Annex	Brokers are forbidden from executing transactions that are not fully identified and registered in exchanges.
	Brokers are forbidden from carrying out transactions that can be characterized as any form of financing to investors customers.
B3 Trading and Clearinghouse Rules and Procedures	In B3 Rules and Procedures, the Local Broker is the Full Trading Participant (Participante de Negociação Pleno).
	Register the NRI with the B3 centralized registration system, creating an individual account for the NRI (B3 account number).
	Allocates trades to beneficial owner accounts in the B3's trading and post-trading systems.
Law 12.683/2012 (Anti-Money Laundering Law)	Reports trade execution and registration (OTC) to investors.
	Maintains the NRI identification data (Know Your Customer)
	Maintains the registration of assets, securities and positions held by the NRI, as well as related transactions.
Law 12.683/2012 (Anti-Money Laundering Law)	Maintains internal controls and monitoring capabilities for identifying transactions possibly associated with fraud, money laundering and other financial crimes

3.1. OPERATIONAL QUALIFICATION PROGRAM

B3 and its partners have developed the Operational Qualification Program (PQO), which is an initiative to assess and recognize the quality of the services provided by the brokerage houses and banks that are active in the markets operated by the Exchange. PQO encompasses more than 120 financial institutions and has already certified more than 12,000 market professionals.

The Operational Qualification Program includes operational characteristics and requirements which are consolidated into standard rules and guidelines available in the Program Guidelines section at: http://www.b3.com.br/en_us/b3/qualificacao-e-governanca/selos-pqo/

PQO's Standard Rules involve requirements and operational practices that are based on the Central Bank as well as the Securities and Exchange Commission of Brazil's rules and on B3's self-regulation norms, covering issues such as suitability, trade and order surveillance, prevention of money laundering activities as well as information security.

The PQO Guidelines' requirements reflect the strategic positioning and complexity of the business and the services provided by the brokerage houses and banks that are active in the markets operated by B3. They describe the trading characteristics and operational efficiency that are the basis for granting the Program's five different Qualification Seals, the latest of which is the Nonresident Investor Broker. For this specific seal, guidelines identify Full Trading Participants as well as Trading participants which have an organizational and technological structure specialized in prospecting Nonresident investors and providing them with representation, consulting and financial advisory services as well as trade execution and B3 product distribution.

Besides the Nonresident Investor Broker seal, B3 also awards four different seals which vary in accordance with the participant's specialization: Execution Broker, Retail Broker, Agro Broker and Carrying Broker.

Execution Broker: identifies the Full Trading Participant and Trading Participant that have an organizational and technological structure specialized in providing trade execution services for institutional investors in the B3 trading environments.

Retail Broker: identifies the Full Trading Participant and Trading Participant that have an organizational and technological structure specialized in providing consulting and financial advisory services, client prospecting and order execution services, as well as B3 product distribution services for individual investors and nonfinancial companies.

Agro Broker: identifies the Full Trading Participant and Trading Participant that have an organizational and technological structure specialized in providing consulting and financial advisory services, client prospecting and order execution services, as well as distribution services for B3 agricultural commodity derivatives.

Carrying Broker: identifies the Full Trading Participant and Settlement Participant that have a financial, organizational and technological structure to provide risk management, settlement, collateral management, position consolidation and custody services for institutional investors and nonfinancial companies.

3.2. CURRENTLY CERTIFIED BROKERAGE HOUSES

BGC LIQUIDEZ DTVM	MERRILL LYNCH S.A. CTVM
BRABESCO S.A. CTVM	MIRAE ASSET WEALTH MANAGEMENT (BRAZIL) CCTVM LTDA.
GENIAL INSTITUCIONAL CCTVM S.A	MODAL DTVM LTDA.
BTG PACTUAL CTVM S.A.	MORGAN STANLEY CTVM S.A.
C6 CTVM LTDA	NECTON INVESTIMENTOS S.A. CVMC
CITIGROUP GMB CCTVM S.A.	NOVA FUTURA CTVM LTDA
CM CAPITAL MARKETS CCTVM LTDA.	PLANNER CV S.A
CREDIT SUISSE BRASIL S.A. CTVM	RENASCENÇA DTVM LTDA
GOLDMAN SACHS DO BRASIL CTVM	J. SAFRA CVC LTDA
GUIDE INVESTIMENTOS S.A. CV.	SANTANDER CCVM S.A.
H. COMMCOR	SOCOPA SC PAULISTA S.A.
IDEAL CTVM S.A.	TULLETT PREBON BRASIL S.A. CVC
ITAÚ CV S.A.	UBS BRASIL CCTVM S.A.
INTL FCSTONE DTVM LTDA	XP INVESTIMENTOS CCTVM S.A
J.P. MORGAN CCVM S.A.	



Further information and updates can be found in the Certified brokerage houses section at: http://www.b3.com.br/en_us/b3/qualificacao-e-governanca/selos-pqo/

3.3. AVAILABLE PRODUCTS AND SUITABILITY

The Brazilian financial and capital markets offer a large array of products and services for local and nonresident investors. Among the Local Broker's main roles and responsibilities is to introduce these products to the Nonresident Investor (NRI), to explain how they work and to guide the NRI in evaluating their suitability considering its investment objectives.

Although the investment decision is the investor's, the Local Broker has the obligation of alerting the NRI about the risks of the different products, services and transactions, so that the NRI is able to make an informed decision.

Local Brokers must also assess whether the transactions are compatible with the financial capabilities of the NRI. This responsibility is related both to alerting the NRI about its risk exposure and to monitoring its activities to identify potential fraud or money-laundering.

To this end the Local Broker can request specific documentation to support the information provided by the NRI or its foreign representative. The CVM is also entitled to request documents supporting the NRI's registration and activities.

3.4. SIMPLIFIED REGISTRATION PROCESS FOR NONRESIDENT INVESTORS

As previously stated, Brazilian regulation requires full identification of the final Nonresident Investor (NRI). All local institutions – Legal Representative, Local Custodian and Local Broker – have to establish a contractual relationship with the final beneficial owner in order to carry out the registration process needed to start operating in Brazil. The local institutions might also need to collect documentation as proof of the information provided by the NRI in compliance with CVM Instruction 505/2011.

Nevertheless, these local institutions often do not have a direct relationship with the final beneficial owner but with an international broker or a global custodian that represents the NRI in the contractual relationship. In this case, CVM Instruction 505/2011 establishes the possibility of adopting a **Simplified Registration Process** provided some conditions are met:

In this case, CVM Instruction 505/2011 introduces the possibility of adopting a Simplified Registration Process provided some conditions are met.

In its Article 9, the CVM Instruction 505 establishes as conditions to adopt a Simplified Registration Process that:

- The NRI has to be a client of a foreign intermediary and be registered according to the applicable legislation in the country of origin.
- The foreign intermediary must contractually agree to provide the Local Broker, whenever required, with all information and documents requested by the Securities and Exchange Commission of Brazil (CVM) and other Brazilian supervisory bodies, according to the rules related to the registration of investors in the Brazilian capital markets. This information must be updated periodically.
- The Securities Commission or Regulator in the foreign intermediary's jurisdiction must have signed IOSCO's Multilateral Memorandum of Understanding (MMoU) which establishes mutual cooperation and allows for the exchange of NRI's financial information across different jurisdictions.

- The country of origin of the foreign intermediary should not be considered high risk in terms of money laundering or terrorism financing, and should not be classified as non-cooperative by international organisms in matters related to those types of crime. The list of countries considered as high risk is available at:

<https://www.iosco.org/about/?subsection=mmou>

According to CVM Instruction 505/2011, also in its Article 9, the Local Broker has to:

- Establish criteria for evaluating the level of trustworthiness of the foreign intermediary.
- Adopt the necessary measures to ensure that the information and documents will be promptly presented by the foreign intermediary when requested.
- Ensure that the foreign intermediary adopts adequate procedures to identify and register the NRI according to the specific legislation in the country of origin of the NRI.

Moreover, the CVM Instruction 505/2011 establishes, in its Article 10, the rules adopted by the entities that manage organized markets such as authorized exchanges must require that the Local Broker and the foreign intermediary sign an agreement with the following **minimum content**:

- The commitment of the foreign intermediary to provide in a timely manner the Local Broker, B3 or directly the CVM with the NRI's updated registration information in such a manner as to meet all the requirements established in CVM's regulations regarding the NRI's registration within the scope of the securities markets.
- Clause electing the governing laws of Brazil to control the agreement, and recognizing the jurisdiction of the Brazilian courts to hear and settle disputes arising out of the agreement, provided an arbitration commitment clause shall be acceptable as long as the arbitration proceedings are to take place in Brazil.
- Clause calling for compulsory termination of the agreement upon a foreign intermediary's failure to comply with the obligation to provide registration information of the NRI promptly upon request of the Local Broker, B3, a Brazilian regulatory or oversight agency.

The entities that manage organized markets such as B3 must also:

- Impose a restriction preventing any licensed intermediary from adopting the simplified registration system to record information concerning NRIs that are customers of any foreign intermediary which has defaulted on the obligation to provide timely information;
- Enforce rules prescribing deadlines and manner by which a Local Broker is to give B3 notice of the execution, termination or amendment of the agreement, as well as to communicate any breaches to the provisions of such agreement; and
- Enforce rules requiring verification of conformity of signed agreements.

IMPORTANT

Lastly, in its Article 11, the CVM Instruction 505 establishes that the same framework described for the relationship between the foreign intermediary and the Local Broker is valid for the relationship between the Local Custodian and the global custodian.

The same framework described for the relationship between the foreign intermediary and the Local Broker is valid for the relationship between the Local Custodian and the global custodian.

Local Brokers and Local Custodians should adequately keep all Contracts with foreign institutions and make them available to B3 and/or the Brazilian regulatory bodies whenever requested.

If there are any violations of the described provisions, the Local Broker will be blocked from carrying out orders on behalf of the NRI unless a complete registration process is adopted (instead of the simplified registration process).

- If the regulatory body informs B3 that the foreign institution has not provided information which it requested, B3 will formally notify the corresponding Local Broker or the Local Custodian.

4. CARRYING BROKER

4.1 CONSOLIDATING POSITIONS AND RISK MANAGEMENT

The NRI's transactions executed by the Local Broker can be settled in one of two ways.

The first option is for the NRI's transactions to be settled, through his Local Custodian, against the Local Broker's Clearing Member. At B3's Clearinghouse, as a function of the chain of responsibilities established, every Local Broker has an appointed Clearing Member who is responsible for clearing and settling the Local Broker's trades.

The second options requires the NRI to previously instruct his Execution Broker to transfer, to a carrying Broker, who may or may not be his Local Cuostidan, the responsibilities for clearing and settlement of a transaction, as well as the related position and risk management procedures. This second option is referred to as give-up clearing and can involve the total value of the transaction or just a part of it. The execution broker indicates the give-up during the allocation process.

The Carrying Broker is either a Full Trading Participant or a Settlement Participant that has financial capacity and organizational and technology structure dedicated to providing risk management, settlement, collateral management, position consolidation and custody services for institutional investors and non-financial companies.

Through a series of give-up agreements, the NRI can concentrate settlement as well as positions and risk management of all his transactions with a single Carrying Broker. The result is that all his positions and risk will be held in a single account under a single Clearing Member. Consequently, provided there are sufficient diversification benefits, margin requirements for the entire portfolio should be smaller than the sum of individual parts held under more than one Clearing Members.

4.2 CURRENTLY CERTIFIED CARRYING BROKERS

AGORA CTVM S.A.	FATOR S.A. CV
BANCO ABN AMRO S/A	ITAÚ CV S.A.
BANCO BTG PACTUAL S.A.	J.P. MORGAN CCVM S.A.
BRABESCO S/A CTVM	SANTANDER CCVM S.A.
GENIAL INSTITUCIONAL CCTVM S.A	UBS BRASIL CCTVM S.A.
CITIGROUP GMB CCTVM S.A.	VOTORANTIM ASSET MANAGEMENT DTVM
CREDIT SUISSE BRASIL S.A. CTVM	XP INVESTIMENTOS CCTVM S.A.

Further information and updates can be found at http://www.b3.com.br/en_us/b3/qualificacao-e-governanca/selos-pqo/

5. CONNECTIVITY TO THE B3 TRADING PLATFORM

To start trading at B3, Nonresident Investors (NRI) have to define the type of connectivity to the B3 PUMA Trading System.

The NRI can use the broker-dealer's desk or can use Direct Market Access (DMA) to the B3 PUMA Trading System, which is available in three connectivity modalities:

- DMA through a provider/vendor;
- DMA through broker co-location; or
- DMA through investor co-location.

The DMA model means direct access to the B3 electronic trading environment, allowing the NRI to enter its own orders as well as to receive market data in real-time.

5.1. DMA THROUGH A PROVIDER / VENDOR

In this modality, the NRI connects to a DMA provider² which connects to the B3 trading platform. The orders are routed via the infrastructure furnished by the DMA provider and the logical link between the NRI and the Local Broker is controlled both by B3's and the DMA provider's systems.

In this model, the Local Broker, who needs to be a Full Trading Participant, requests that B3 enables the link within the DMA provider's own network. Once the connection has been established, the DMA provider can qualify the NRI to start trading.

From a contractual standpoint, the relationships are built: i) between the NRI and the DMA pro-

² Such as Bloomberg or Reuters.

vider and ii) between the DMA provider and Local Broker/Full Trading Participant.

5.2. DMA THROUGH BROKER CO-LOCATION

In this modality, the Local Broker, who needs to be a Full Trading Participant, hires hosting units (racks) and trading equipment. The rented hosting units are accessed solely by the Local Broker to route orders and for other related management functions. The NRI connects to the Local Broker's network and orders are generated through Automated Trading System (ATS) software installed at the B3 Data Processing Center (CPD).

In this model, the Local Broker requests the co-location from B3 and qualifies the NRI to start trading.

From a legal standpoint, a tripartite contractual relationship is established between the NRI, the Local Broker/Full Trading Participant and B3.

5.3. DMA THROUGH INVESTOR CO-LOCATION

In this modality, the NRI and the Local Broker, who needs to be a Full Trading Participant, contract hosting units (racks) and trading equipment. The rented hosting units are accessed solely by the NRI to route orders and for other related management functions. The NRI's orders are generated through Automated Trading System (ATS) software installed at the B3 Data Processing Center (CPD).

In this model, the Local Broker and the NRI request the co-location from B3 and once the connectivity has been established, the NRI can start trading.

From a contractual standpoint, a tripartite relationship is established between the NRI, the Local Broker/Full Trading Participant and B3.

5.4. PRE-TRADE RISK MANAGEMENT

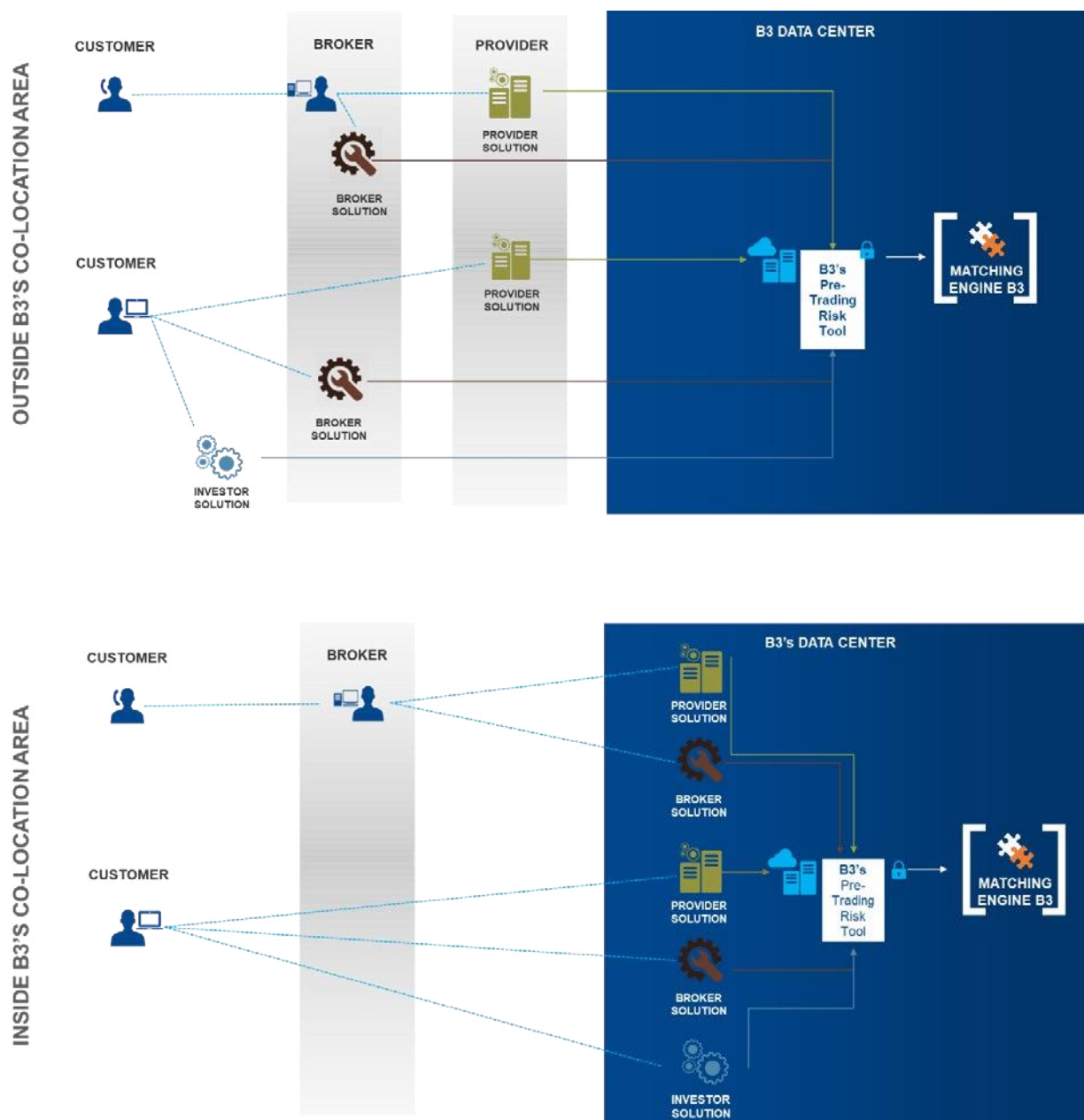
B3 has a robust risk management infrastructure supporting its role as central counterparty as it is explained in Chapter IV on the B3 Trading and Post-Trade Infrastructure.

As part of its pre-trade risk management procedures, all orders have to be tested against the limits established by the full trading participants.

- If orders are routed through a **DMA provider**, limits can be verified by the DMA provider's own pre-trade risk management tool or by B3's Line EntryPoint.
- If orders are routed through **DMA Co-location (Brokers or Investors)**, limits are necessarily verified by B3's pre-trade risk management tool – Line EntryPoint.

B3's Line EntryPoint allows the Full Trading Participants to establish limits according to different parameters (per account, per asset class and others). For further details, please refer to: http://www.b3.com.br/en_us/solutions/platforms/puma-trading-system/for-members-and-traders/tools-for-traders/trade-risk-management-line/

The illustrations below show the different types of connectivity available to the NRI.



* PTRCT – Pre-trade Risk Control Tool Brazil is called “an ID country” or a “beneficial owner country”. This means that, according to Brazilian legislation, securities and positions have to be registered at a trade repository (TR) and kept in a central securities depository (CSD) in the name of the final beneficial owner in an indirect account holding system³.

This very particular feature differentiates the Brazilian financial and capital market from the other main marketplaces around the world and has very important implications in terms of ownership rights, regulatory oversight and operational procedures in pre-settlement, settlement and risk and collateral management.

³ The definition of direct and indirect account holding systems first appeared in the context of the UNIDROIT Project on a Convention on Intermediated Securities.

III. BRAZILIAN POLICY FOR MARKET INTEGRITY AND THE CLIENT IDENTIFICATION PROCESS

1. BRAZILIAN POLICY AND REGULATION FOR MARKET INTEGRITY

The Brazilian regulators and authorities have always been engaged in assuring market integrity, including through the prevention of financial crimes. The main reference in the world for this subject is the Financial Action Task Force (FATF), an inter-governmental body established in 1989 by the Ministers of its Member jurisdictions. The objectives of the FATF are to set standards and promote effective implementation of legal, regulatory and operational measures for combating money laundering, terrorist financing and other related threats to the integrity of the international financial system. The FATF is therefore a “policy-making body” which works to generate the necessary political will to bring about national legislative and regulatory reforms in these areas.

The FATF has developed a series of Recommendations that are recognized as the international standard for combating of money laundering and the financing of terrorism. First issued in 1990, the Recommendations were reviewed in 1996, 2001, 2003 and lastly in 2012. The FATF Recommendations were endorsed by many international organisms such as the International Monetary Fund (IMF), The World Bank, the G-20, the Basel Committee on Banking Supervision and the United Nations Security Council. The 2012 review of the FATF Recommendations introduced a Risk-based Approach for addressing issues related to money laundering and terrorism financing.

When admitted to the FATF, Brazil issued Law 9,613/1998 that regulates crimes related to money laundering, assets occultation and the use of the financial system for illicit purposes. In parallel, it was created the Council for Control of Financial Activities (COAF) and the Brazilian Securities Commission (CVM) issued Rule 301/1999 which already established specific requirements for the Brazilian Local Brokers and Local Custodians in relation to the registration and identification of investors.

It is important to highlight that, since the late 1980's, the Brazilian regulation demands that all trades are identified to the level of the Local Brokers' client in the trading systems and that all securities are held in individual accounts at the Central Securities Depository, segregated from other clients' and from the Local Custodians'. This feature assures that detailed information is permanently available both for supporting the decision-taking process and for enabling a comprehensive monitoring of market participants by the financial intermediaries, the trading and registration platforms as well as regulators and the judiciary.

As a full member of FATF, Brazil assumed the commitment to submit to the Mutual Evaluation Process where the adherence to the Recommendations is evaluated. The CVM issued Rules 463/2008, 506/2011, 523/2012, 534/2013 and 553/2014 reflecting the FATF expectations in relation to Brazil evaluation conducted in 2010 based on the Recommendations version in 2003.

The last FATF Recommendations review in 2012 lead to adjustments in the money laundering and terrorism financing regulation for the securities markets. More specifically, it was introduced a Risk-based Approach and the investor identification process was improved with respect to the registration of the investor, the concept of beneficial owner and the diligence due by the Local Brokers.

CVM's revised regulation establishes that the Local Brokers and Local Custodians understand the money laundering and terrorism financing risks involved in the activities performed in the capital markets so that they are adequately mitigated thus reducing their exposure. According to the current rules, Local Brokers must publicly disclose information on the periodic evaluations as well as the measures undertaken for controlling and mitigating money laundering and terrorism financing risks.

It is worth mentioning that the directives established by the Brazilian securities regulation apply not only domestic investors but also to Non-resident Investors.

2. INVESTOR IDENTIFICATION PROCESS

Investors' Registration

The registration is the first step of client identification. Even before the obligation defined in Law 9,613/1998, the Local Broker and Local Custodian's requirement to register their clients was already set in the CVM regulatory framework.

The introduction of a Risk-based Approach by the CVM allowed for the relaxation of the time-frames for registration up-date by the Local Broker and Local Custodian: clients with a riskier profile have narrower window for registration up-date while clients with a less risky profile can enjoy a larger period between up-dates.

Regarding the Nonresident Investor more specifically, the regulation allows the Local Broker and the Local Custodian to adopt a simplified registration process for this type of investor as established in Rule CVM 505/2011 and described in the previous chapter.

Beneficial Owner Concept

Another important aspect of the investors' registration process is the concept of beneficial owner and its comprehensiveness.

The beneficial owner is part of the FATF Recommendations and is contemplated in Rule CVM 301/1999 since its revision by Rule 463/2008. Nevertheless, the comprehensiveness of the beneficial owner concept is being improved as the CVM called a public hearing for implementing detailed rules regarding the investors' identification in order to extend the beneficial owner concept.

According to FATF Recommendations, the transparency regarding the information about the beneficial owner is one of the main goals when conducting due diligences in the client's identification process (Customer Due Diligence – CDD) within the Know Your Client (KYC) policy.

Corroborating the relevance of the theme, the G-20 issued in 2014 the High Level Principles on Beneficial Owner, promoting the improvement of the transparency in both private and public sectors. Moreover, the G-20 gave mandate to the FATF and the Global Forum on Transparency and Exchange of Information for Tax Purposes, linked to the OECD (Organization for Economic Cooperation and Development) to study the theme of the beneficial owner and develop scenarios for implementing best practices in terms of transparency .

One of the main objectives of this initiative is the evaluation of the tax authorities' transparency level aiming at paving the way to promote information exchange among them, including informa-

tion related to the identity of the beneficial owner, thus allowing for a more effective action against tax evasion. The information exchange act issued by this Forum institutes the commitment of the signatory countries to exchange information about the beneficial owner taxpayers.

Also in 2016, it was published the FATF Report to G20 – Beneficial Owner reinforcing the understanding that it should continue to exercise pressure the countries for adopting standards defined by the FATF itself for the identification of the beneficial owners.

These initiatives are coordinated among FATF and the Forum member and allow envisioning the end of unrestricted bank secrecy as an instrument to avoid tax payment, especially for assets kept abroad. Also, they should promote greater transparency and potentiate the anticorruption measures as well as Money laundering and terrorism financing prevention.

Brazilian Federal Revenue Service (RFB) Normative Instruction 1,634/2016

Given this context, the Brazilian Tax Authority (RFB) regulated the beneficial owner in the Normative Instruction 1,634/2016, which defines that the registry information related to Non-resident Investor entities or companies must necessarily comprehend the persons authorized to act as their representatives and go as far as identifying the natural persons characterized as beneficial owners.

The beneficial owner is defined as the natural person in the name of whom the transaction is executed or the natural person that, ultimately, owns, controls or significantly influences the entity or company. Significant influence is characterized when the natural person owns more than 25% of the entity or company, directly or indirectly or when has the power to elect the majority of the Board of Directors even if not controlling the entity or company. This definition is equally valid for domestic and Non-resident Investors.

IV. GENERAL IMPACTS OF THE BRAZILIAN CLIENT IDENTIFICATION PROCESS

As mentioned in the previous chapter, according to Brazilian legislation, transactions must be carried out in the name of the Local Brokers' client and held in a central securities depository (CSD) in an individual account in the name of the beneficial owner (indirect account holding system).

This feature has very important implications in terms of:

- Ownership rights;
- Regulatory oversight; and
- Operational procedures in pre-settlement, settlement and risk and collateral management.

1. LEGAL CERTAINTY OF OWNERSHIP OF THE SECURITIES

The individual accounts structure maintained by B3 ensures that the ownership rights over the securities held within the central securities depository's environment can be fully identified at any time in the level of the beneficial owner.

In Brazil, the identification of the final beneficial owner is mandatory for capital markets transactions since early 1990. At present, B3 is engaged in the discussions initiated by the CVM's public hearing in order to extend the concept of the beneficial owner to the level of the natural person on behalf of whom the transactions have been executed.

In markets with an omnibus accounts holding system, securities are held in the CSD in the name of the intermediary or the custodian bank, and it is this institution that has information and control of the individual holdings.

In case the Brazilian marketplace, should an intermediary / custodian become insolvent, the client's holdings are kept segregated in individual accounts and do not co-mingle with the intermediary/custodian proprietary positions or with other clients' holdings. Consequently, there is a high level of legal certainty regarding ownership rights over the securities, and investors benefit from judiciously managed custody risk.

2. ENHANCED REGULATORY OVERSIGHT

The identification of the beneficial owner at the level of the CSD contributes to the quality of regulatory oversight. Money laundering and terrorism financing crimes, the use of privileged information, and fraud in general can be identified by the regulators very quickly and accurately.

3. PRE-SETTLEMENT PROCEDURES - LOCKED-IN FOR SETTLEMENT AND ALLOCATION REQUIREMENTS

Pre-settlement procedures in the Brazilian capital markets differ significantly from those employed in most international markets. Firstly, B3 Exchange and Clearinghouse are directly connected, sharing the same database, which contains all participants and investors. Therefore, trades executed in the B3 PUMA Trading System are automatically captured by the Clearinghouse (locked-in for settlement) and there is no need for the usual pre-settlement procedures such as comparison, affirmation, confirmation and matching.

Secondly, according to CVM regulations in alignment with the adopted account holding system, brokers have to identify the final investor at trade execution, in which case the trade is automatically allocated to the corresponding beneficial owner account.

In the case of collective investment schemes whereas the final investor is identified as a “passenger” of an omnibus account, the Local Broker can identify the omnibus account (called a Master Account in the case of B3) at trade execution and effect the final allocation to the beneficial owner (the passenger of the omnibus) within an allocation window established in B3 rules and procedures.

The fact is that no trade remains without allocation to the beneficial owner that is holder of an individual account at the CSD. Should a trade not be allocated at the end of the designated period, it is automatically allocated to the Local Broker proprietary account.

The allocation is a precondition for settlement of transactions since it identifies the accounts to or from which securities will be delivered. For this reason, Local Custodians and Local Brokers are eager for information on the final allocation from their counterparties abroad – the transfer of securities among beneficial owner accounts within the CSD cannot occur without justification.

4. DELIVERY OF SECURITIES FOR SETTLEMENT

As individual accounts at the B3 Central Securities Depository are designated in advance, the delivery of securities from the seller and to the buyer will take place directly at those accounts, which does not mean any violation of delivery versus payment principles. In the settlement process:

- Securities are debited from the seller beneficial owner account and credited to a transitory settlement account maintained by the B3 Clearinghouse within the B3 Central Securities Depository.
- Once payments are confirmed by the Central Bank of Brazil, the B3 Clearinghouse coordinates the delivery versus payment (DVP) process by debiting its transitory settlement account and crediting the buyer beneficial owner account, on the one hand, and affecting the transfer of funds to the seller's clearing member settlement bank on the other.

5. RISK AND COLLATERAL MANAGEMENT

Since trades are allocated to the final investor, the B3 Clearinghouse is able to calculate the risk at the beneficial owner level as well as the aggregated risk of a broker and/or a clearing member.

Collateral is also managed at the beneficial owner level and, in particular, most securities posted as collateral are segregated in individual accounts in the name of the beneficial owner at B3 Central Securities Depository.

V. AVAILABLE PRODUCTS AT B3

Generally speaking, Nonresident Investors can trade the same products available to domestic investors. Migration across different types of investment is also fully allowed provided the tax obligations are fully met. Nonresident Investors based in the United States (US Persons) who trade the derivatives contracts named in the list available at www.b3.com.br, Regulation, Non-resident Investor, Commodity Futures Trading Commission (CFTC), List of products that may be directly accessed by U.S. Persons, directly from the United States through a Sponsored Direct Connection (DMA) managed by the Investor (formerly DMA 3 or DMA 4) are subject to regulation by the U.S. Commodity Futures Trading Commission (CFTC) and must comply with any restrictions in accordance with the applicable rules.




As a stock, futures and commodities exchange, B3 manages the B3 PUMA Trading System - an integrated trading platform that supports a large array of instruments and strategies. The B3 PUMA Trading System provides brokers and clients with a predictable and resilient trading environment as well as risk management tools.

Table 1 below presents, in a summarized way, the different cash and derivative market products and instruments available for trading at the B3 PUMA Trading System.

IMPORTANT

The Local Broker is required to explain to all of his clients the risks, features and specifications of each product. The Local Broker can also recommend a combination of products whose resulting portfolio is more aligned with the Nonresident Investor's strategies and goals.

Table 1: MAIN PRODUCTS AVAILABLE FOR TRADING AT THE B3 EXCHANGE

	Equities	Fixed Income	Currencies	Commodities
 Cash	Stocks, investment funds' shares, ETFs, BDRs	Corporate fixed income (debentures, receivables securitization funds – FIDC, commercial papers, real state receivables certificates – CRI, agribusiness receivables certificates - CRA, and others)	U.S. Dollar	Gold
 Futures	Indexes (local and foreign)	Interest rate futures in Brazilian Reals, Interest rates in USD, Inflation indexes, Inflation spread	FX contracts against USD and the Brazilian Real	Live cattle, Corn, Gold, Arabica Coffee 4/5, Crystal Sugar, Hydrous Ethanol
 Options	Shares, ETF, spot Index, index futures (local and foreign)	Interest rate futures in Brazilian Reals, Interbank deposit index	Spot US Dollar	Live cattle, Corn, Gold, Arabica Coffee 4/5, Crystal Sugar, Hydrous Ethanol

VI. FOREIGN EXCHANGE TRANSACTIONS

Local law mandates that all foreign portfolio investment settle in Brazilian Reals (BRL). To monitor currency flows the Central Bank of Brazil requires all NRIs to conduct their foreign exchange transactions with an authorized financial institution.

1. FOREIGN EXCHANGE REGIME AND LEGAL FRAMEWORK

Foreign exchange transactions are regulated by National Monetary Council (CMN) Rule 3.568/2008 and Central Bank of Brazil's Circular 3.691/2013.

According to CVM Instruction 3.568/2008:

- Brazil adopts a floating exchange-rate regime;
- No capital controls are applied by Brazilian monetary authorities; and
- Brazilian Reals are fully convertible to other currencies.

Central Bank of Brazil Circular 3.691/2013 establishes rules regarding foreign exchange transactions, most notably:

- Which financial institutions are authorized to carry out transactions in the foreign exchange market
- What the types of transactions are involving foreign exchange
- What the features are of foreign exchange contracts
- States that all foreign exchange transactions must be registered at the Central Bank's Foreign Exchange System
- Details the settlement of foreign exchange contracts.

CVM Instruction 3.844/2010 and the Central Bank of Brazil Circular 3.752/2015 both require the registration of Nonresident Investors' (NRI) foreign capital inflows and outflows as well as the updating of their balances through the Electronic Capital Registration system (RDE) within BACEN's Information System (SISBACEN. As mentioned, the Central Bank is responsible for overseeing the balance of the NRI holdings in Brazil as well as the movements affecting those holdings.

According to CVM Rule 4.373/2014, investments in the Brazilian financial and capital markets are subject to registration in the Electronic Capital Registration system (RDE-portfolio) and the designated Legal Representative is responsible for such registration.

It is worth mentioning that although the Legal Representative usually acts as Local Custodian to the NRI and carries out all FX transactions related to this NRI's activities, there is no legal requirement for the

Representative to act as Custodian. The FX transaction can be executed by any authorized financial institution, even one which is not the NRI's Legal Representative as long as the FX Contract is signed by both the FX Agent and the Legal Representative. The Central Bank of Brazil accepts scanned signatures.

2. REGISTRATION AND SIGNATURE OF FOREIGN EXCHANGE CONTRACTS

The foreign exchange contract (FX contract) is the legal instrument in which the specific conditions of currency transaction are established. The FX Contract has to be registered by the FX Agent in the Foreign Exchange System within the Central Bank of Brazil's Information System (SISBACEN).

The FX Contract must be registered on the same date the contract has been signed between the parties and registration requires identification of the account holder or passenger of an omnibus account through its RDE Code.

Some information in the FX Contract cannot be altered: the seller, the buyer, the value in foreign currency, the value in Brazilian Reals, the foreign currency identification code and the exchange rate. The FX Contract settlement date, the manner of delivering the foreign currency and the RDE Code can be modified after registration.

Once the FX Contract is registered, the FX Agent can print and sign it as legally required. The FX Contract also needs to be signed by the Legal Representative of the NRI. In cases where the FX Agent is the same institution acting as Local Custodian and Legal Representative, the institution signs the FX contract both as the FX Agent and as Legal Representative of the Nonresident Investor.

The FX Agent and the Legal Representative are both obliged to keep the original FX contract for 5 (five) years, as of the end of the year when the transaction was executed.

3. SETTLEMENT OF FOREIGN EXCHANGE CONTRACTS

According to Central Bank Circular 3.691/2013, the FX Contract is settled upon delivery of Brazilian Reals to one party and corresponding delivery of foreign currency to the other party to the contract. FX contracts are settled directly between the counterparties i.e. the FX Agent and the NRI.

Spot FX transactions are settled, as agreed between the parties, T+0, T+1 or T+2 from the date the FX Contract is registered at the Central Bank's SISBACEN. To avoid principal risk, settlement only occurs when it is a business day in both centers of the two currencies involved.

4. UPDATING THE NONRESIDENT INVESTOR'S ELECTRONIC CAPITAL REGISTRATION (RDE)

4.1. CAPITAL FLOWS

The registration of an FX Contract automatically updates the Electronic Capital Registration (RDE) of the omnibus account, individual and passenger, increasing (capital inflow) or decreasing (capital outflow) the NRI's holdings in Brazil.

Other types of transactions that can affect the NRI's RDE are the issuance or cancellation of Depositary Receipts (DR). When a DR is issued in the name of the NRI, it is equivalent to a capital outflow thus reducing the RDE balance. Symmetrically, when a NRI's DR is cancelled, it is equivalent to a capital inflow thus increasing the RDE balance.

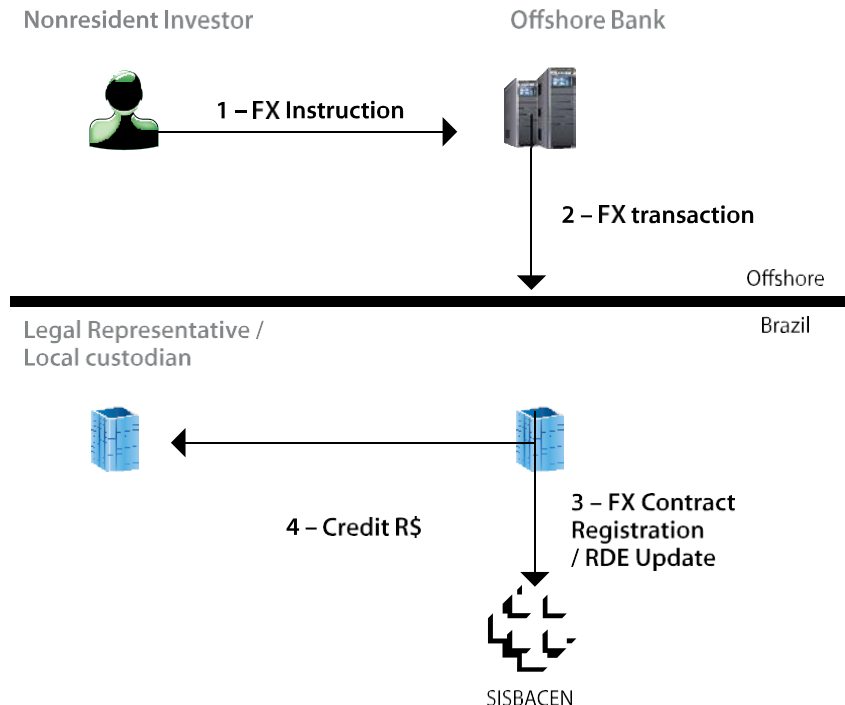
4.2 MONTHLY UPDATE

The Legal Representative updates the NRI's holdings monthly in order to reflect the value of the assets. When updating asset values on the RDE, the Legal Representative will consider market prices for the different assets in the portfolio.

5. INSTRUCTING FOREIGN EXCHANGE TRANSACTIONS FOR SETTLEMENT PURPOSES

If an FX transaction (e.g. an NRI purchasing Brazilian Reals) is conducted with the intent of providing funds for the settlement of trades, the NRI may request that the FX Agent (usually the Local Custodian) utilize the same SWIFT settlement instruction. In this case, the Local Custodian will perform the FX transaction upon matching the FX instructions with the settlement instructions.

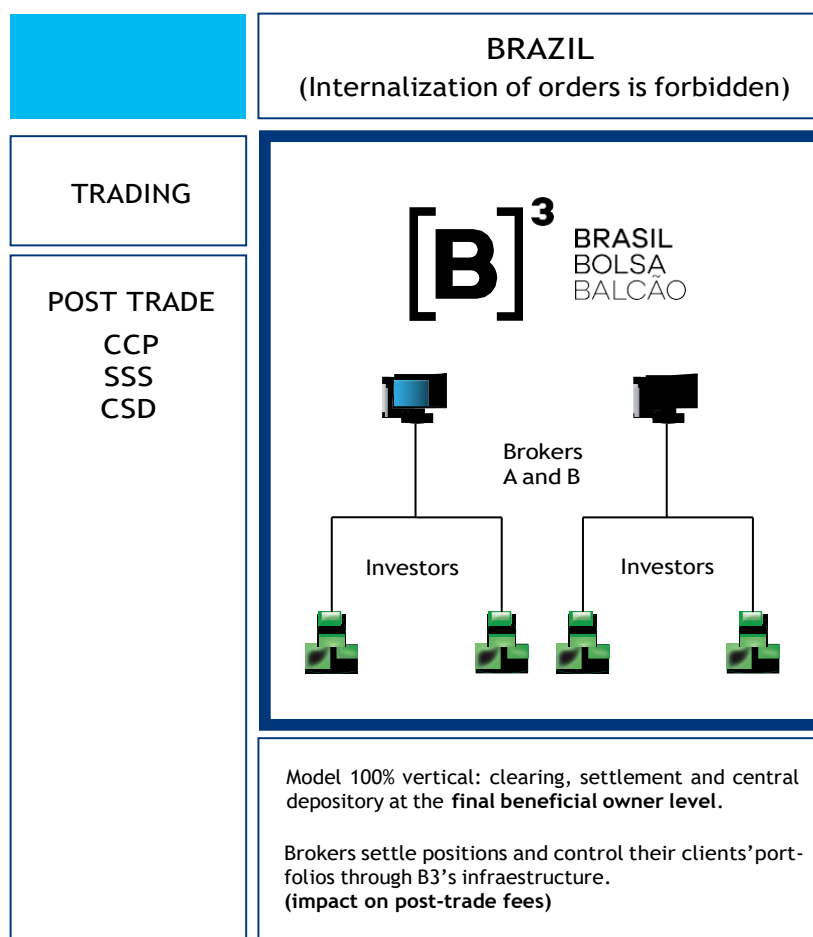
If an NRI opts to conduct a foreign exchange transaction with an FX Agent who is not its Local Custodian it will not be able to utilize the same SWIFT settlement instruction.



VII. B3 INFRASTRUCTURE

The B3 infrastructure is comprised of the following business units organized in a vertically integrated structure, illustrated below:

- A Multi-Asset Exchange
- A Trade Repository (TR)
- A Central Counterparty (CCP)
- A Securities Settlement System (SSS)
- A Central Securities Depository (CSD)

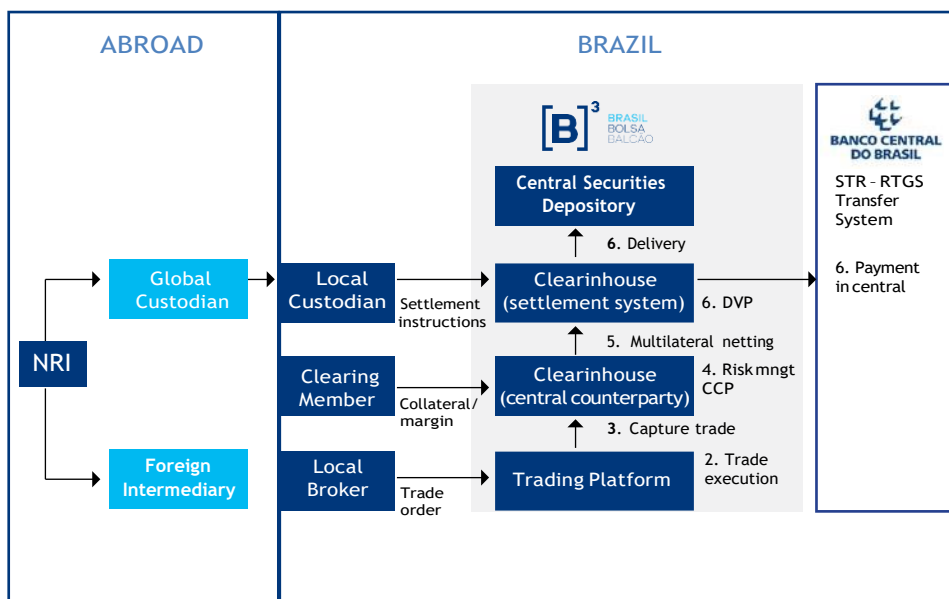


On a daily basis, according to their operations, the Nonresident Investors (NRI) will interact with each of those B3 business units through their different services providers in order to have their trades executed, to settle those transactions, to post collateral related to their activities and to have their assets and securities safely kept.

This chapter covers the different business units of B3, the relevant features from the investor's perspective as well as the legal basis supporting their activities.

It is important though to provide the NRI with an overview of the operational process and the diverse interactions involved. This is the purpose of the flow below.

NONRESIDENT INVESTOR – TRADING AND SETTLEMENT FLOW



1. B3 BUSINESS UNITS - LEGAL FRAMEWORK

According to the Brazilian legislation and regulatory framework, each of B3's businesses units has a solid legal basis and is under strict supervision of the Central Bank of Brazil (Banco Central do Brasil - BACEN), the Securities and Exchange Commission of Brazil (Comissão de Valores Mobiliários - CVM) or both. B3 has undergone a certification process with BACEN and/or the CVM for obtaining authorization for each business unit and is audited annually by these regulators.

B3 Market Supervision is an autonomous and independent self-regulatory organization responsible for monitoring B3 participants' activities and verifying compliance with capital markets' regulations.

The charts below identify each of the business units' main functions and responsibilities and the corresponding regulatory framework.

BUSINESS UNIT: CLEARING MEMBER

REGULATION	FUNCTIONS
Law 6.385/1976	<p>Regulates the securities markets and creates the Securities and Exchange Commission of Brazil (CVM).</p> <p>CVM establishes rules for exchange and organized OTC activities and defines authorization requirements and supervisory institutions.</p>
CVM Instruction 461/2007	<p>Rules and procedures for authorizing exchanges and organized OTC markets.</p> <p>Exchanges and organized OTC markets – obligations, administration, governance, auditing committee and financial information disclosure.</p> <p>Trading rules – price formation, price disclosure, trade disclosure and risk controls.</p> <p>Self-regulatory structure and governance and Loss Repayment Mechanism (MRP).</p> <p>Authorized intermediaries - obligations and responsibilities.</p> <p>Eligible securities.</p> <p>Final investors' identification at trade execution.</p> <p>Self-listing and resulting obligations.</p> <p>Information disclosure.</p> <p>Not allowed: trade internalization / dark pool</p>
Law 12.810/2013	<p>BACEN and the CVM should: establish rules for trade repository activities; define the authorization requirements; and supervise authorized institutions.</p> <p>Defines registration as bookkeeping, storage and publicity of information related to financial assets and transactions.</p>
CVM Instruction 544/2013	<p>Securities and securities transactions registration.</p> <p>Trade repositories have to be approved by the CVM as an organized OTC market.</p> <p>Additional requirement - compliance report to CPSS-IOSCO principles and recommendations.</p>
Central Bank Circular 3.743/2015	<p>Financial assets registration.</p> <p>Defines registration as issuance of financial assets out of the central securities depository environment and whose legal validity is conditioned to registration.</p> <p>Trade repositories have to be approved by BACEN as non-systemically important settlement systems.</p> <p>Rules and procedures approved by BACEN:</p> <p>Procedures for registration.</p> <p>Participants responsible for accuracy of information registered (including updates).</p> <p>Conciliation</p> <p>Safeguards related to operational risk</p> <p>Contingency and recovery plans.</p> <p>Reconciliation of registered positions with the issuers' books.</p>

BUSINESS UNIT: CENTRAL COUNTERPARTY AND SECURITIES SETTLEMENT SYSTEM (CLEARINGHOUSE)

REGULATION	FUNCTIONS
Law 10.214/2001	Regulates clearinghouses as part of the Brazilian payment system.
	Definition of multilateral netting.
	Mandatory central counterparties for systemically important settlement and payment systems.
	Central counterparties must maintain safeguard mechanisms in order to ensure certainty of settlement:
	Risk control.
	Contingency plans.
	Loss sharing agreements.
	Collateral execution procedures.
CVM Instruction 2.882/2001	Clearinghouses segregate estate.
	Clearinghouses' priority over collateral in detriment of other obligations
	Regulates the Brazilian payment system and its direct participants
	Clearinghouses as direct participants of the Brazilian payment system.
Central Bank Circular 3.057/2001	BACEN as regulator of clearinghouses, responsible for their authorization and supervision.
	Clearinghouses authorization process.
	Gross and net settlement systems definition.
	Systemically important settlement systems definition.
	Settlement in Central Bank money
	Systemically important net settlement systems acting as central counterparties
	Adequate safeguard structure mitigating credit and liquidity risks, approved by BACEN:
	Operational limits.
	Loss sharing agreements.
	Collateralization of risks by the participants.
	Credit lines.
	Settlement account at Central Bank / direct access to the payment system (STR).

BUSINESS UNIT: CENTRAL SECURITIES DEPOSITORY

REGULATION	FUNCTIONS
Law 12.810/2013	BACEN and the CVM shall: establish rules for central depository activities; define the authorization requirements; and supervise authorized institutions.
	Define registration as bookkeeping, storage and publicity of information related to financial assets and transactions.
	Central Securities Depositories have to be approved by the CVM.
CVM Instruction 301/1999	Central Securities Depository as securities' fiduciary holder in issuers' books.
	Beneficial owner account holding system (assets, rights and corporate actions).
	Centralized safekeeping of securities.
CVM Instruction 541/2013	Transfer of securities (for settlement purposes and other).
	Corporate actions processing (asset servicing).
	Daily reconciliation with issuer and Local Custodian.
Central Bank Circular 3.743/2015	Dematerialization (complete for equities and bonds) and immobilization (for some other financial equities);
	Maintenance of a structure of individual accounts in the name of the beneficial owner.
	Information disclosure to investors' about their holdings/positions.
	Central Securities Depositories have to be approved by BACEN.
	Central Securities Depository as securities' fiduciary holder in issuers' books.
	Centralized safekeeping of securities and financial assets (book entry and physical certificates).
	Transfer of securities (for settlement purposes and other).
	Corporate actions processing (asset servicing).
	Central Securities Depository responsible for asset segregation and final ownership control.
	Reconciliation of registered positions with the issuers' books.

In Annex 3 – Trading Auctions - General Rules and Procedures, you will find an overview on the trading and registration infrastructure provided by B3, as well as the rules and procedures applicable to trading auctions.

2. RISK CONTROL MECHANISMS IN B3 TRADING ENVIRONMENTS

B3 applies different mechanisms in the trading environment in order to mitigate risk dissemination to the post-trading infrastructure.

Non-resident Investors can be particularly sensitive to the rules and procedures employed by B3 to trigger and conduct auctions, since those are specific to the Brazilian marketplace. Other risk control mechanisms can raise less awareness either because they are more broadly employed in other markets or because they are seamless during the trading execution. Nevertheless, all risk control mechanisms considered equally important to B3 and belong to a general strategy to mitigate risk before, during and after trade execution.

This session has 2 (two) main objectives: the first is to briefly present the existing auctions types and their triggering mechanisms; and the second is to present the other risk control mechanisms in place, as part of the risk management framework in the trading environment.

The main mechanisms or tools in place to mitigate risk propagation to the post-trading infrastructure can be grouped in 3 (three) categories:

Risk Category	Mechanisms
Price formation	• Auction tunnels
	• Rejection tunnel
	• Protection tunnel
	• Maximum variation limit
Quantity/credit	• Pre-trade risk management tool (LINE)
Technology	• Cancel on Disconnect
	• Throttle
	• Market protection
	• Firmsoft

2.1 PRICE FORMATION RISK PREVENTING MECHANISMS

The price formation tools in place at B3 aim at preventing trade execution at prices reaching out certain ranges defined by Exchange. They contribute to improve the conditions of price formation during the trading session and to market transparency.

For each security or derivative instrument, B3 define trading tunnels corresponding to price and quantity intervals, which are applicable to both offers and trades.

B3 adopts the following trading tunnels:

- Rejection tunnels;
- Auction tunnels; and
- Protection tunnels during auction or call, except for volatility calls.

The trading tunnels are also classified as:

I - Static: the limits are static - do not change during the trading session, and previously defined by B3; or

II - Dynamic: the limits are dynamics, varying during the trading session. They can be synchronized to a reference price during the trading session or not.

The trading tunnels parameters, the minimal amplitude and the list of assets and derivatives instruments subject to those parameters are published by B3 in its website http://www.b3.com.br/en_us/solutions/platforms/puma-trading-system/for-members-and-traders/rules-and-trading-parameters/trading-tunnels-parameters/

REJECTION TUNNEL

Rejection tunnels are price or quantity variation intervals established by B3 to prevent registration of **asks** above a certain price and **bids** below a certain price.

For **assets** traded on the **exchange market**, B3 may change or revoke **rejection tunnels**, or establish a new interval for recalculation of their parameters and minimum bandwidth, even during a **trading session** or **auction**. The market may be forewarned five minutes in advance of such changes.

There are five types of rejection tunnel, as follows:

- I. **Type 1 rejection tunnel** (based on closing price, reference price or settlement price): designed to control price variation above or below a preset value;
- II. **Type 2 rejection tunnel** (based on last price, updated last price, reference price or price of the option's underlying and volatility shock): prevents **registration** of **asks** at or above a certain price and **bids** at or below a certain price;
- III. **Type 3 rejection tunnel** (based on the price of the last trade in the option's underlying): prevents exercise of call options on equities and ETFs priced above a certain limit and exercise of put options on equities and ETFs priced below a certain limit;
- IV. **Type 4 rejection tunnel** (based on quantity for a single order): rejects **orders** for more than a specified quantity;
- V. **Type 5 rejection tunnel** (based on price of underlying and remuneration rate): rejects forward declarations for equities with a remuneration rate or price above a certain limit.

Further details about the functioning of the rejection tunnels are available in the B3 [Operational Procedures Manual](#).

The current values for the rejection tunnels for all types of assets traded in B3 can be found in http://www.b3.com.br/en_us/solutions/platforms/puma-trading-system/for-members-and-traders/rules-and-trading-parameters/trading-tunnels-parameters/ in the Trading Tunnels Parameters Section.

AUCTION TUNNELS

The auction tunnels aim at guaranteeing good conditions for price formation during the trading session.

Auctions are triggered whenever an order is placed at a price that violates the tunnels limits defined by B3 in relation to:

- The opening price;
- The price of the last trade; and
- The reference price (e.g. Options Market)
- The average price weighted by the traded quantities, calculated within a given time interval.

The auction tunnels are subdivided in the following categories:

- Auction tunnel type 1: aims at trigger the auction at the moment an offer that is being closed reaches its limits based on the opening price;
- Auction tunnel type 2: aims at trigger the auction at the moment an offer that is being closed reaches its limits based on either the price of the last trade, the updated price of the last trade or the reference price;
- Auction tunnel type 3: aims at trigger the auction at the moment an offer that is being closed reaches its limits based on the average price weighted by the traded quantities, calculated within a given time interval defined by B3; and
- Auction tunnel type 4: aims at trigger the auction at the moment an offer that is being closed reaches its limits based on the average quantity traded and on the quantity in relation to the issuer's share capital.

Whenever it deems necessary the upper limits of the auction tunnels will be rounded upwards and the lower limits will be rounded downwards, according to the minimal trading variation for each asset or derivative.

The current values for the auction tunnels for all types of assets traded in B3 can be found in http://www.b3.com.br/en_us/solutions/platforms/puma-trading-system/for-members-and-traders/rules-and-trading-parameters/trading-tunnels-parameters/ in the Trading tunnels Parameters Section.

PROTECTION TUNNEL

The protection tunnel automatically prorogates the closing of an auction should the difference between the auction theoretical price³ and the price of the last trade is greater than a given price range. The objective is to prevent that auctions showing any price distortion are closed automatically.

The protection tunnel is based either on the price of the last trade, the closing price, the adjustment price or the last updated price before the beginning of the auction or of the calls (opening and closing). The protection tunnels is also based on the average traded quantity or on the issuer's share capital after the beginning of the auction.

B3 will prorogate the end of the auction or the call should one of the following situations arise:

- The theoretical price of the asset or derivative is above the upper limit or below the lower limit of the protection tunnel; or
- The theoretical quantity surpasses the protection tunnel parameters.

The parameters as well as the current values for the protection tunnels for all types of assets traded in B3 can be found in http://www.b3.com.br/en_us/solutions/platforms/puma-trading-system/for-members-and-traders/rules-and-trading-parameters/trading-tunnels-parameters/ in the Trading Tunnels Parameters Section.

MAXIMUM VARIATION LIMIT

Similar to the rejection tunnel, the maximum variation limit establish a price range that prevents the registration of offers beyond the range. Usually, the center of the price range for maximum variation is the adjustment price or the closing price.

The current values for the maximum variation limits for all types of assets traded in B3 can be found in http://www.b3.com.br/en_us/solutions/platforms/puma-trading-system/for-members-and-traders/rules-and-trading-parameters/trading-tunnels-parameters/ in the Trading Tunnels Parameters Section

22 QUANTITY/CREDIT RISK PREVENTING MECHANISM

B3 adopts a pre-trade risk management tool in order to avoid problems in trade execution due to erroneous insertion of trading orders involving very high volumes potentially leading to market disruption (fat finger).

LINE is the pre-trade risk management tool provided by B3 and its use is mandatory for full trading participants considered heavy users, since those are the ones representing a greater risk of erroneous insertion of trading orders, considering the algorithms employed.

More specifically, according to B3's Risk Management Manual, the full trading participants whose clients are investors with direct market access (DMA) in modalities DMA Brokers' Co-location and DMA Investors' Co-location and/or are classified by B3 as high-frequency investors must necessarily adopt LINE as a pre-trade risk management model.

Said model is based on the review of each order against a set of limits prior to being entered into the order book. If an order implies the violation of one or more limits it is rejected, thus not being included in the order book. The types of limits to which orders are submitted are defined by B3, whereas the values of the limits assigned to each account held by an investor and to each master account are defined by the responsible full trading participant, subject to the maximum values established by B3. Hence, the analysis is based on the identification of the account to which the trades resulting from the orders will be allocated.

B3's pre-trade risk management tool (LINE) defines for each instrument admitted to trading limits in relation to:

- MAXIMUM QUANTITY OR NOTIONAL FOR BUY AND SELL ORDERS PER INSTRUMENT;
- LONG AND SHORT POSITION LIMITS PER INSTRUMENT; and
- LONG AND SHORT POSITION LIMITS PER EQUIVALENT INSTRUMENT.

By adopting the B3 model, full trading participants are able to define the maximum risk value that fits each investor's profile, registering in the B3 pre-trade risk management system the value of limits applicable to each account and defined according to the model.

The current values for the limits employed by the LINE, the pre-trade risk management tool, for all types of instruments admitted to trading in B3 can be found in http://www.b3.com.br/en_us/solutions/platforms/puma-trading-system/for-members-and-traders/tools-for-traders/trade-risk-management-line/

23 TECHNOLOGY RISK PREVENTING MECHANISMS

Risk prevention trade execution involves a technology component in order to deal with occurrences such as disconnection of the trading session and bottlenecks caused by a high flow of orders. Technology tools can also contribute to control the trading participants' activities with respect to their own pre-established parameters.

Cancel on Disconnect

Cancel on Disconnect is a mechanism that allows automatic cancelation of all open orders upon involuntary interruption of the trading session.

The main objective is to prevent against operational risks arising from abrupt disconnections of the trading session and the broker/client not being able to interact with their order on the book.

Throttle

This tool allows for the control of the messages received from each trading participant during the trading session. In case of messaging above a certain frequency (number of messages per second), the trading participant can define if the messages should be rejected or queued in the gateway (before entering B3 systems).

Market Protection

This is a mechanism provided by B3 to the trading participants aiming at mitigating their execution risks.

The market protection tool allows the participants that are users of FIX sessions to define trading protection parameters. Whenever those parameters are reached within a predetermined time interval, they trigger the automatic cancelation of the offers available in the FIX session as well as the rejection of new offers.

Among the trading protection parameters defined by the participants are the number of executions, the gross and the net quantity traded.

It is important to highlight that those are parameters established by the broker and not by B3.

Firmsoft

Firmsoft is a contingency tool allowing for real time offer cancelation.

3. B3 POST-TRADE INFRASTRUCTURE AND THE BRAZILIAN PAYMENT SYSTEM

3.1. B3 POST-TRADE INFRASTRUCTURE

To appreciate the role of the B3 Clearinghouse and judge how safe the NRI investments are, one must understand three essential building blocks:

- The **Brazilian Payment System** - the SPB and the implications for the central counterparties and securities settlement systems;
- The **B3 Central Counterparty structure** – the chain of responsibilities, the safeguards structure, the risk calculation methodology and the collateral management system.
- The **B3 Securities Settlement System structure** – the procedures for delivery versus payment and for failures treatment.

3.2. BRAZILIAN PAYMENT SYSTEM (SPB) AND THE IMPLICATIONS FOR CENTRAL COUNTERPARTIES AND SECURITIES SETTLEMENT SYSTEMS

A recent assessment conducted by the World Bank and the International Monetary Fund (IMF) within the scope of a joint initiative entitled Financial Sector Assessment Program, considered the Brazilian Payments System compliant with international standards, based on the Principles for Financial Market Infrastructures (PFMI).¹

LEGAL BASIS

- Law 10.214/2001 - supports the role of clearinghouses as central counterparties:
 - Allows multilateral netting of obligations;
 - Establishes that clearinghouses settling transactions in systemically important markets through multilateral netting must act as central counterparties;

¹ In April 2012, the CPSS-IOSCO published the final version of the Principles for Financial Market Infrastructures (PFMI). The PFMIs harmonize and, where appropriate, make existing international standards more demanding, incorporating new principles and stipulating the minimum requirements to ensure a basic common level of risk management across different infrastructures and countries, providing more detailed guidance and broadening the scope of the standards to cover new risk-management areas and new types of FMIs.

- Establishes that central counterparties must ensure the certainty of settlement even if one party should become insolvent;
- Requires that central counterparties maintain an adequate safeguard structure;
- Ensures priority over securities received as collateral.
- CMN Resolution 2.882/2001² - defines the overall principles by which all fund transfer systems, central counterparties and securities settlement systems must abide.
- Central Bank of Brazil Circular 3.057/2001 - defines guidelines for the regulation of clearinghouses/securities settlement systems. Before becoming operational, a clearinghouse must submit its regulations to the BACEN for approval.
- B3 Rules and Procedures - detail mechanisms for risk management and the safeguard structures.

CENTRAL COUNTERPARTIES AND SECURITIES SETTLEMENT SYSTEMS WITH DIRECT ACCESS TO THE STR - CERTAINTY OF SETTLEMENT IN CENTRAL BANK MONEY

The Central Bank of Brazil owns and manages the real time large value transfer system - the STR, which settles payment instructions one by one (gross settlement).

In Brazil, clearinghouses that operate systemically important systems have settlement accounts directly with BACEN, and must use these accounts to settle the financial results from multilateral netting of participant obligations. In all market segments in Brazil, funds transferred by financial institutions to clearinghouses/securities settlement systems to settle transactions are processed in real time and are irrevocable and final, and any credits or debits are made to settlement accounts designed specifically for this purpose.

The fact that clearinghouses have direct access to the BACEN payments infrastructure and to central bank money, without any other intervening financial institution, is extremely important to guarantee the certainty and finality of settlements.

MECHANISMS FOR RISK MITIGATION AND SAFEGUARD STRUCTURES

Systemically important Brazilian clearinghouses must have risk management models capable of measuring risk at every moment with a great degree of reliability. Clearinghouses must also develop a structure of safeguards based on this risk assessment so as to ensure the certainty of settlements even in the event of default by the system's largest net debtor³.

Such safeguards may combine elements of individual collateralization, where each participant covers the risks it generates for the system (known as defaulters pay), with a mutualized settlement fund composed of participants' contributions (known as survivors pay). The proportion of individual collateralization and the net asset value of the mutualized settlement fund to the percentage of covered risk, including stress scenarios, are continuously monitored by BACEN.

BACEN has direct, real time access to settlement data for all market players, as it is able to view

² Resolution 2.282 reflects the general principles of the Bank for International Settlements (BIS) Committee on Payment and Settlement Systems. The document entitled Core Principles for Systemically Important Payment Systems was published by the CPSS in 2001, and lists ten basic principles it recommends be followed by systemically important fund transfer systems.

³ The Lamfalussy Report, BIS document on central bank netting schemes published in 1990, stipulates that central counterparty safeguards must be able to withstand failure by the largest net debtor in the system on any given day.

the clearinghouse settlement accounts and the flow of messages regarding the daily settlement of transactions carried out by all financial institutions with accounts in the STR. Under stress, such as the scenario in 2008, this feature is an essential element for BACEN to identify potential problems immediately and take whatever measures it deems necessary.

For institutions with BCEN authorization to hold accounts in the STR, an intraday credit mechanism provides an efficient and agile layer to liquidity management.

4. B3 CENTRAL COUNTERPARTY

CVM and BACEN regulations require that all equities be exchange-traded and settled through a central counterparty. Although the use of a central counterparty is not mandatory for derivatives in Brazil, the large majority of transactions goes through an exchange and is settled using a central counterparty.

B3 has a comprehensive central counterparty structure that serves multiple markets - equities, derivatives, fixed income securities, government bonds and interbank foreign exchange trading. In contrast to other important marketplaces, B3 Clearinghouse assumes the role of central counterparty immediately after the transaction is captured from the trading systems.

In order to ensure market integrity and the participants' rights, B3 Clearinghouse has to maintain a risk management system and safeguard mechanisms in compliance with CMN Resolution 2.882/2001 and BACEN Circular 3,057/2001.

The main risk incurred by B3 Clearinghouse is the possibility that its participants fail to fulfill their settlement obligations (credit risk) or are late in doing so (liquidity risk). In the case of default, should one (or more) clearing members, i.e. the direct participants of BM&F FBOVESPA Clearinghouse, fail to pay or deliver, the B3 Clearinghouse is directly exposed to market and liquidity risks. At this point, the B3 Clearinghouse has to trigger its safeguard mechanisms in order to ensure all settlements occur within the established timeframes.

The B3 Clearinghouse risk management structure contemplates a number of layers of protection that act simultaneously to ensure the central counterparty is able to ensure finality of settle-

ment even in case of participants default. The **main components of the** risk model are:

- The chain of responsibilities in the settlement process;
- The safeguard structure;
- Risk monitoring;
- The collateral management process; and
- The risk calculation model.

The complete guide is available in English at: http://www.b3.com.br/en_us/regulation/regulatory-framework/regulations-and-manuals/clearing-settlement-and-risk-management.htm
- Post-trade, B3 Clearinghouse Risk Management Manual.

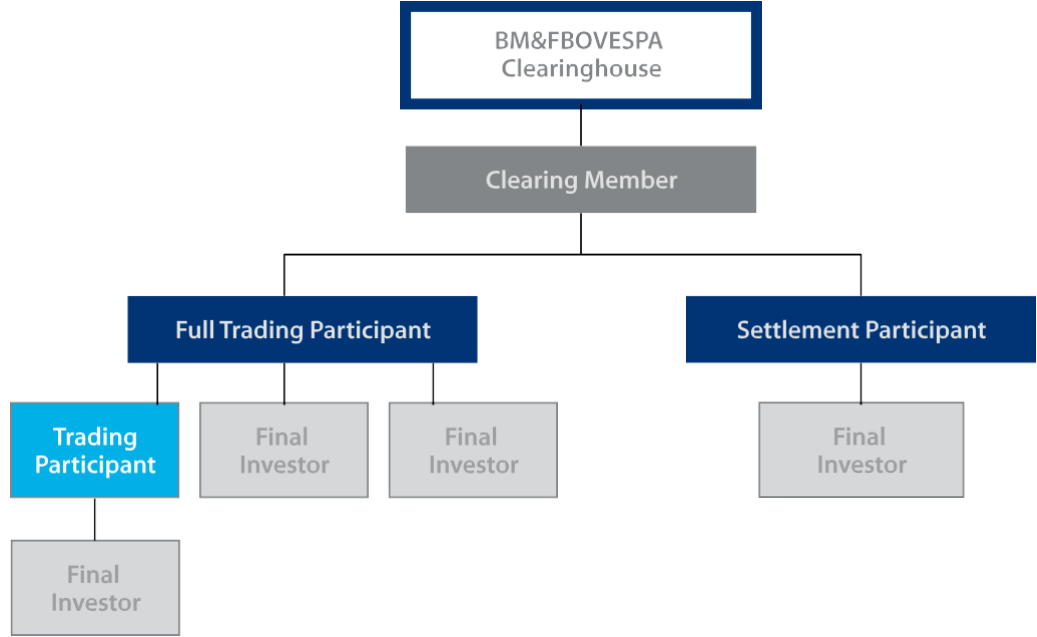
It is important to highlight that the B3 Clearinghouse has been recognized by The Board of Supervisors of the European Securities and Markets Authority – ESMA in the condition of a third-country central counterparty (TC CCP) in relation to the European Union. The recognition entails the definitive classification of the B3 Clearinghouses as qualifying central counterparties (QCCP), for the purposes of the capital requirements applicable to European financial institutions pursuant to the provisions of Regulation (EU) 575/2013 of the European Parliament and of the Council on Prudential Requirements for Credit Institutions and Investment Firms and Amending Regulation.

The qualification of the B3 Clearinghouses as QCCP is a major milestone for the strengthening and development of the Brazilian financial and capital markets as it allows foreign institutions linked to B3 participants to operate in the Brazilian market through their national subsidiaries with greater efficiency as regards applicable capital allocation requirements.

4.1. THE CHAIN OF RESPONSIBILITY IN THE SETTLEMENT PROCESS

The settlement process where B3's Clearinghouse acts as central counterparty follows a chain of responsibilities that involves: the B3 Clearinghouse, the clearing members, the Full Trading Participant or the settlement participant and the final investor, which can be a Nonresident Investor (NRI).

Based on this chain of responsibilities, presented below, the B3 Clearinghouse defines procedures in the case of a default at any level of the chain.



From the perspective of the Nonresident Investor (NRI):

- The Local Broker is a Full Trading Participant at B3.
- The Local Broker usually is or has a Clearing Member responsible for cash settlements with B3 Clearinghouse.
- The Local Custodian is responsible for confirming delivery of securities and if there is no confirmation, the responsibility lies with the Local Broker and its Clearing Member

The next table presents the responsibility of each party involved.

Table: Chain of Responsibility - Settlement Process

COUNTERPARTY	SETTLEMENT RESPONSIBILITIES	EXTINCTION OF RESPONSIBILITY
B3 Clearinghouse	<p>Downwards in the chain</p> <p>The Clearinghouse conducts business only with its Clearing Members, not with their customers.</p> <p>The Clearinghouse is therefore responsible exclusively for effecting deliveries of securities and payments of monies related to all transactions registered in the clearing accounts belonging to its Clearing Member.</p> <p>The Clearinghouse has no other responsibilities to any other parties in the chain.</p>	<p>With the Clearing Member</p> <p>Cash leg in Brazilian Reals: upon BACEN's confirmation of the debit in its settlement account and the credit in the settlement account of the Clearing Member's settlement bank.</p> <p>Cash leg in US dollars (commodities): upon transfer of funds from B3 Clearinghouse's account to the investor's account in its settlement bank abroad.</p> <p>Delivery leg: upon delivery of securities and commodities.</p>
CLEARING MEMBER	<p>Upwards in the chain</p> <p>Responsible for clearing and settlement of all trades executed by Full Trading Participants and Settlement Participants (with whom the Clearing Member has a contractual relationship)</p> <p>Downwards in the chain</p> <p>Responsible before the Full Trading Participants and Settlement Participants (with contractual relationship) for effecting deliveries and payments related to the settlement.</p>	<p>With the B3 Clearinghouse</p> <p>Cash leg in Brazilian Reals: upon BACEN's confirmation of credit in the B3 Clearinghouse's settlement account.</p> <p>Cash leg in US dollars (commodities): upon transfer of funds to B3 Clearinghouse's account abroad.</p> <p>Delivery leg: upon delivery of securities and commodities.</p>

COUNTERPARTY	SETTLEMENT RESPONSIBILITIES	EXTINCTION OF RESPONSIBILITY
FULL TRADING PARTICIPANT / SETTLEMENT PARTICIPANT	<p>Upwards in the chain</p> <p>Responsible before the Clearing Member, on behalf of the Final Investor (with contractual relationship), for:</p> <p>Effecting deliveries and payments related to the settlement; and</p> <p>Posting collateral requested by B3 Clearinghouse and by the Clearing Members, as well as for the legitimacy of the collateral posted.</p>	<p>With the Clearing Member</p> <p>The Full Trading Participant remains responsible before the Clearing Member even in case of default of the Trading Participant and the Final Investor (with contractual relationship).</p>
	<p>Downwards in the chain</p> <p>Responsible before the Trading Participants and Final Investors (with contractual relationship) for effecting deliveries and payments related to the settlement.</p>	<p>With the Clearing Member and B3 Clearinghouse</p> <p>The Settlement Participant remains responsible before the Clearing Member and the B3 Clearinghouse even in case of default of the Final Investor (with contractual relationship).</p>
TRADING PARTICIPANT	<p>Upwards in the chain</p> <p>Responsible before the Full Trading Participant, on behalf of Final Investor with whom it has a contractual relationship, for:</p> <p>Effecting deliveries and payments related to the settlement; and</p> <p>Posting collateral requested, including for the settlement fund, as well as for the legitimacy of the collateral posted.</p>	<p>With the Full Trading Participant</p> <p>The Trading Participant remains responsible before the Full Trading Participant even in case of default of the Final Investor with which it has a contractual relationship.</p>
	<p>Downwards in the chain</p> <p>Responsible before the Full Trading Participants and Settlement Participants with whom it has a contractual relationship for effecting deliveries and payments related to the settlement.</p>	

COUNTERPARTY	SETTLEMENT RESPONSIBILITIES	EXTINCTION OF RESPONSIBILITY
	Upwards in the chain	
	Responsible before the Full Trading Participant, the Trading Participant and Settlement Participant (with contractual relationship), for:	
FINAL INVESTOR	Effecting deliveries and payments related to the settlement;	
	Posting collateral requested by the Full Trading Participant, the Trading Participant, the Settlement Participant, the Clearing Member and B3 Clearinghouse, as well as for the legitimacy of the collateral posted.	

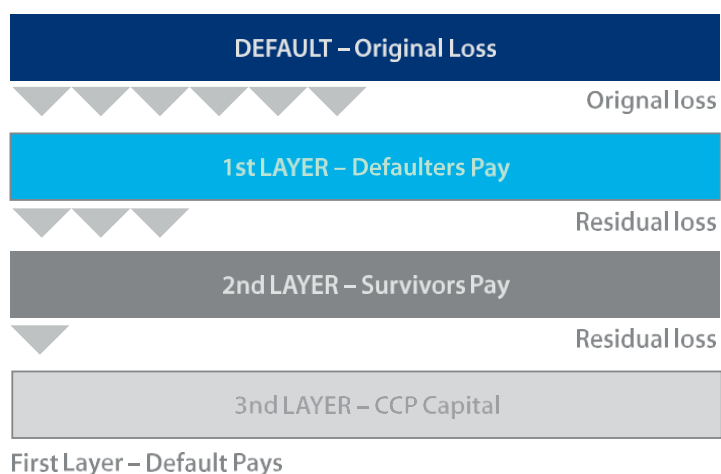
4.2 THE SAFEGUARD STRUCTURE

The default of one or more participants in the chain of responsibility may expose the central counterparty to credit, market and liquidity risks, as the clearinghouse must ensure the timely settlement of all of the trades.

The B3 Clearinghouse has a hybrid safeguard structure that combines layers of the Defaulter Pays and Survivor Pays models commonly employed in many international markets.

- **Defaulter Pays** – the participants are required to collateralize their exposures, and losses caused by the participant are covered by the participant's collateral.
- **Survivors Pay** - the participants (except the final investors) contribute to a mutualized loss sharing agreement, usually organized as a settlement fund, with the purpose of sharing the losses provoked by any of them, according to predefined rules. The main advantage of using a mutualized mechanism of loss sharing is the reduction of the total volume of collateral requirements.

The scheme below synthesizes the layers of the B3 Clearinghouse's safeguard structure:



The first layer of the safeguard structure is composed of collateral posted by: i) the final investors for guaranteeing the risks associated with their own open positions; and ii) the Full Trading Participants and the settlement participants for guaranteeing the risks associated with their clients' open positions.

Both lending transactions and those executed in the derivatives market must be collateralized by the final investor. Cash market transactions may be collateralized (i) by the final investor or (ii) by the Full Trading Participant or by the settlement participant, at the discretion of either participant and upon authorization of the clearinghouse.

The choice of whether the investor or the Full Trading Participant will collateralize the cash market transactions is a feature of the account where transactions are allocated, and it must be designated to the clearinghouse by the full trading participant or settlement participant. Such designation allows the B3 Clearinghouse to properly group the transactions for margin calculation purposes, since different calculation methods apply to the transactions collateralized by the investor and those collateralized by the Full Trading Participant or settlement participant, as described below.

i) Collateral posted by the final investor for guaranteeing its own risks

The first layer of the safeguard structure is composed of collateral posted by the final investor for guaranteeing the risk of its own open positions.

The minimum amount of collateral required corresponds to the final investor's portfolio risk, excluding the cash market transactions collateralized by the full trading participant or the settlement participant.

- The portfolio risk of the final investor is defined as the largest potential cost of closing out the positions that compose the portfolio, meaning the worst financial loss resulting from the close-out process, considering a set of risk scenarios and without considering the posted collateral.
- The residual risk of the final investor is defined as the largest potential cost of closing out the positions that compose the portfolio, considering a set of risk scenarios and the posted collateral. The residual risk is the collateral deficit in the close-out process.

ii) Collateral posted by the Full Trading Participant and the settlement participant for guaranteeing the final investor's risks

The Full Trading Participant or the settlement participant can post collateral on behalf of the final investor, their client, in order to cover the risk of open positions in the cash market.

This alternative is mainly used when: (i) the period the collateral will be committed in the clearinghouse is very short; and (ii) there is a significant presence of individual investors in the market who tend to trade relatively small volumes. In such situations the operational costs related to small-size collateralization for a large number of final investors can be economically unviable.

The adoption of the collateralization mode by the Full Trading Participant or settlement participant may be subject to criteria and limits established by B3, at its sole discretion, based on the financial and operating characteristics of participants, the characteristics of assets and the volume of transactions, among others.

iii) Collateral posted for guaranteeing intraday risks

The B3 Clearinghouse requires that Full Trading Participants, settlement participants, Trading Participants and clearing members post collateral to mitigate intraday risks related to the positions under their respective responsibilities.

SECOND LAYER - SURVIVORS PAY (SETTLEMENT FUND)

The second layer of the safeguard structure is the Settlement Fund, composed of:

- A fixed contribution made by the clearing member;
- A variable contribution made by the clearing member;
- A fixed contribution made by B3

The clearing members' fixed contributions are the minimum contribution required and are defined according to the market segments where the clearing member is active, thus preventing risk contamination among different market segments. The clearing member's fixed contribution is mutualized, meaning that it can be used to cover losses resulting from the default of other clearing members, in case all other layers have been exhausted.

The clearing member's variable contribution is proportional to its residual risk in stress risk scenario. The variable contribution is calculated on a daily basis and will only be requested if the clearing member's residual risk surpasses a predetermined fraction of the overall clearing members' fixed contributions to the Settlement Fund.

The B3 contribution is a portion of its net worth that is allocated to the Settlement Fund.

THIRD LAYER - CCP CAPITAL (B3 equity)

The third and final layer of the safeguard structure is B3's own equity.

LIQUIDITY SAFEGUARDS

The B3 Clearinghouse also manages safeguards specifically related to liquidity risk mitigation.

To guarantee the necessary liquidity in due schedules, even in the case of default of one or more clearing members, the B3 Clearinghouse imposes restrictions on the type and volume of assets accepted as collateral (eligibility and concentration). The safeguard structure is composed of mechanisms that allow the fast monetization of assets posted as collateral:

- Liquidity Investment Fund (FILCB) - composed of contributions from the clearing members and from B3
- Portion of B3's own net worth.
- Liquidity credit lines with banks.

4.3. RISK MONITORING

The B3 Clearinghouse operates an intraday risk management structure to evaluate the portfolio of all its participants, considering the continuous process of trades' novation⁴ by the central counterparty and their potential impacts on each component or layer of the safeguard structure.

PRE-TRADE RISK MONITORING

According to B3's Risk Management Manual, the Full Trading Participants whose clients are investors with direct market access (DMA) and/or are classified by B3 as high-frequency investors must necessarily adopt a pre-trade risk management model in connection with the activities of said investors. Moreover, the model defined and provided by B3 is mandatory for reviewing orders entered by:

- High-frequency investors, irrespective of the access mode; and
- Investors with direct market access in the following modes: modalities DMA Brokers' Co-location and DMA Investors' Co-location.

The pre-trade risk monitoring performed by the B3 Clearinghouse consists of risk analysis of such investors through B3's proprietary pre-trade risk management model. Said model is based on the review of each order against a set of limits prior to being entered into the order book. If an order entails the violation of one or more limits it is rejected, thus not being included in the order book. The types of limits to which orders are submitted are defined by B3, whereas the values of the limits assigned to each account held by an investor and to each master account are defined by the responsible full trading participant, subject to the maximum values established by B3. Hence, the analysis is based on the identification of the account to which the trades resulting from the orders will be allocated.

The limits of the B3 pre-trade risk management model are defined for each instrument admitted for trading and are based:

- On the characteristics of the order under analysis (order side, quantity, etc);
- On the set of orders, identified to the same account of the order under analysis, included in the order book at the time of analysis; and

⁴ Novation is a process in which the original parties of the transactions are substituted by the central counterparty who becomes the seller to all buyers and the buyer to all sellers.

- On the trades allocated to the same account and on the same date of the order under analysis.

By adopting the B3 model, Full Trading Participants are able to define the maximum risk value that fits each investor's profile, registering in the B3 pre-trade risk management system the value of limits applicable to each account and defined according to the model.

New orders as well as modifications to existing ones are subject to a minimum set of limits, defined as follows:

- **Maximum order size:** the maximum quantity (number of contracts or asset units) of an order to buy or sell an instrument;
- **Maximum size of a potential position in an instrument:** the maximum daily amount of a potentially long or short position in an instrument. This limit considers (i) the number of contracts/asset units in the order; (ii) the balance of trades executed on the date of analysis; and (iii) the orders entered by the investor and available in the trading system's order book; and
- **Maximum size of a position by equivalent instrument:** the maximum daily amount of a long or short position in an equivalent instrument.

POST-TRADE RISK MONITORING

The B3 Clearinghouse evaluates the credit exposure of its participants (all layers in the chain of responsibilities) through the monitoring of intraday risk resulting from their respective transactions. This allows the B3 Clearinghouse to have margin calls throughout the day, reducing its exposure.

The B3 Clearinghouse establishes an **intraday risk limit** for each full trading participant/settlement participant. This limit can be modified by the responsible clearing member.

The intraday risk limit is a reference value for risk exposure upon which the B3 Clearinghouse requires additional collateral from the Full Trading Participant and settlement participant, from the final investors under their responsibility and from the clearing members responsible for them.

The operational balance of a Full Trading Participant/settlement participant is a function of the intraday risk limit under a specific clearing member, the collateral posted and the risk associated with the transactions/positions. The operational balance increases with the intraday risk limit and the collateral posted and decreases when the risk associated with the transactions/positions expands.

The intraday risk limit is violated when its value surpasses the sum of the defined intraday risk limit and the collateral posted specifically for operational balance purposes.

4.4. THE COLLATERAL MANAGEMENT SYSTEM

The collateral management system is comprised of the acceptance and management of collateral posted by the participants to compose the B3 Clearinghouse's safeguard structure, including the process of collateral execution in case of a default.

The B3 Clearinghouse defines the eligible assets accepted as collateral and the applicable haircuts depending on the liquidity of each specific instrument. The list of eligible assets for colla-

teralization is available at: http://www.b3.com.br/en_us/products-and-services/clearing-and-settlement/clearing/ - Risk Management.

The B3 Clearinghouse requires the identification of the destination/purpose of posted collateral in the collateral management system. The B3 Clearinghouse also establishes, for some types of assets, limits to the amounts in which they can be accepted. The applicable limits are related to the assets' liquidity and can be consulted at http://www.b3.com.br/en_us/regulation/regulatory-framework/regulations-and-manuals/clearing-settlement-and-risk-management.htm - Post-Trade, B3 Clearinghouse, B3 Clearinghouse Risk Management Manual.

Of special interest to Nonresident Investors (NRI) is the fact that B3 Clearinghouse accepts collateral abroad in its accounts in DTCC (The Depository Trust & Clearing Corporation), Euroclear and Citibank, subject to specific limits.

4.5. THE RISK CALCULATION MODEL

The Closeout Risk Evaluation methodology (CORE) was developed for calculating the risks associated with the role of central counterparty played by B3 in a multi-asset and multi-market environment.

The problem of risk management in a central counterparty in case one or more participants' defaults is how to have access to enough resources to close-out defaulters' positions under adverse market conditions. The CORE methodology details this close-out process, evaluating losses and gains potentially incurred during the process.

The CORE methodology also:

- Offers a practical rule for the close-out of contracts and assets that are consistent with risk measurements.
- Recognizes the differences in liquidity conditions for each contract and asset.
- Distinguishes appropriately between market risk from risks associated with mismatching of cash flows along the close-out process.
- Controls the liquidity risks resulting from the payment flows related to the principle value of assets.
- Analyzes the portfolio close-out process combined with the execution of the corresponding collateral.
- Has risk calculation taking into account the natural hedges existing between the various instruments and assets, including those posted as collateral.

The amount of collateral required for guaranteeing the transactions/positions (defaulters pay and survivors pay) and the operational balance are based on the CORE methodology. Since the collateral can be posted by the final investor or by the Full Trading Participant/settlement participant, the CORE methodology employs three different calculation modules:

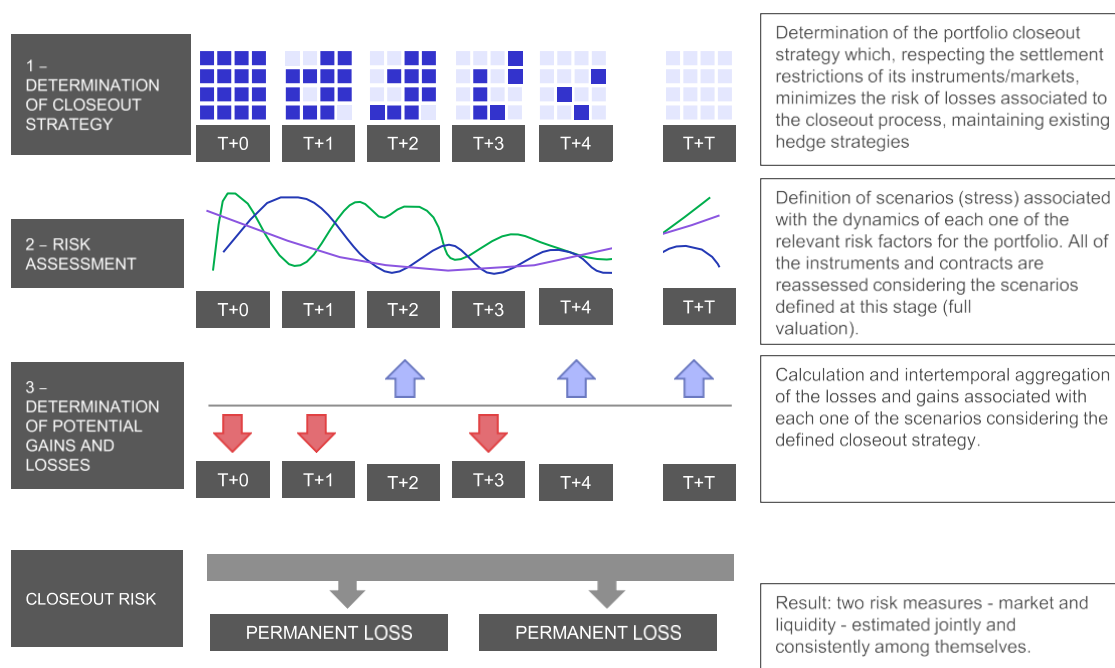
- CORE0: risk calculation for transactions allocated to the final investor.
- CORE1: risk calculation for non-allocated transactions.
- CORE2: risk calculation for transactions allocated to the Full Trading Participant/settlement participant (on behalf of final investor).

To evaluate the risk of a portfolio and its corresponding guarantees, the CORE methodology takes three steps:

- Determining an appropriate close-out strategy for the portfolio and the corresponding guarantees.
- Simulating the close-out execution strategy for different risk scenarios, calculating the cash flows resulting from the close-out process.
- Calculating risk measurements based on the cash flows estimated in the previous step.

For further details on the CORE methodology and the close-out process, please refer to http://www.b3.com.br/en_us/regulation/regulatory-framework/regulations-and-manuals/clearing-settlement-and-risk-management.htm - Post-Trade, B3 Clearinghouse, B3 Clearinghouse Risk Management Manual

The scheme below illustrates the calculation process and its phases.



4.6. CASH MARKET COLLATERALIZATION

B3 CLEARINGHOUSE	
CASH MARKET	CLEARING MEMBER, BROKER OR CLIENT
DERIVATIVES & SEC LENDING	CLIENT

Cash Market Collateralization in the B3 Clearinghouse

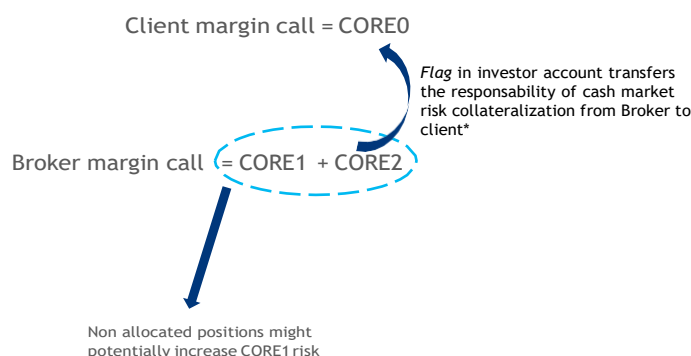
- Clearing Member, Broker or Client can pledge collateral for cash market risk
- Collateralization is an account attribute at Exchange's Registration System
- Client cash market collateralization follows same premise of derivatives and securities lending model
- Cash Market risk assessed only for the settlement cycle: from trade date until settlement
- Possibility to cover allocated short position

Portfolio Risk Assessment and Cash Market Risk

- Three types of risk: market, position/collateral liquidity and cash flow
 - Market Risk: Trade Price vs Spot Price (for cash market position)
 - Liquidity Risk: Daily Liquidity Limit
 - Cash Flow Risk: timing between trade financial amount (Trade Amount x Trade Price) and closeout financial amount (Trade Amount x Spot Price)
- Portfolios comprising all markets and products
- Positions and collateral marked in the same scenarios

If Client Cash Market Collateralization

Client margin call due to client allocated positions: all client allocated positions on derivatives, securities lending and cash market. Same collateral accepted for derivatives and securities lending can be deposited for cash market margin calls



** Clients/investors are required to contract their Clearing Members/Brokers in case they choose to configure the flag in order to transfer the responsibility of cash market risk collateralization from Broker/Clearing Member to them.*

5. THE B3 SECURITIES SETTLEMENT SYSTEM

In Brazil, transaction settlement is handled by the securities settlement systems, which may or may not act as central counterparty. The B3 Clearinghouse is approved by BACEN as a securities settlement system that acts as a central counterparty since the markets settled are systemically important according to BACEN criteria.

According to BACEN Circular 3.057/2010, regardless of whether the securities settlement system is guaranteed by a central counterparty or not, the settlement model should ensure the use of the strictest principles of delivery versus payment (DVP).

DVP is essential to eliminate principal risk, thus avoiding the possibility that any of the parties involved in the transaction might be at risk of, having fulfilled their obligations, being deprived of the acquired rights as a result of the counterparty having failed to meet its own.

5.1 SETTLEMENT ACCOUNT, ACCESS TO THE STR AND SETTLEMENT IN CENTRAL BANK MONEY

As part of the Brazilian Payment System (SPB), the B3 Clearinghouse has the prerogative of holding a settlement account directly at BACEN, which grants it access to BACEN's large value transfer system - the STR. Payments made through securities settlement systems use central bank money instead of having to use one or more commercial banks as in many other relevant marketplaces. Settlements in central bank money eliminate the credit risk inherent to settlements intermediated by banking institutions.

The settlement process involves many steps, from trade capture from the trading system to the simultaneous, final and irrevocable DVP.

5.2 ALLOCATION, GIVE-UP AND DESIGNATION OF ACCOUNT AT THE LOCAL CUSTODIAN

The allocation process is crucial for transaction settlement since it is when the Local Broker provides relevant information about the parties and accounts involved in the settlement. In the allocation process, the transactions' settlement, position and risk management can be transfer-

red and specific deposit accounts can be indicated for delivery purposes.

The Nonresident Investor (NRI) usually trades through a variety of Local Brokers but, in order to reduce operational complexity, risks and costs, it might choose to concentrate its holdings and positions in a single Local Custodian.

As mentioned before, transactions can be settled at the B3 Clearinghouse by the Local Broker's clearing member or they can be transferred for clearance and settlement by another broker/clearing member. The same applies to the related position and risk management (give-up clearing). The give-up is instructed in the allocation process by the execution broker (Local Broker) and is subject to approval by the appointed carrying/settlement broker/clearing member. The give-up can be total or partial.

As previously stated, trades must be allocated to a specific deposit account at the CSD. It is from/to that account that the securities will be debited or credited for settlement purposes. The NRI also has the possibility of indicating its account with its Local Custodian for delivery purposes. Its cash settlement, position and risk management remain under the responsibility of the Local Broker's Clearing Member. In this case, there is no give-up but, during the allocation process, the Local Broker will indicate the NRI's account with the Local Custodian for delivery.

For a detailed schedule on the allocation, give-up and account indication please refer to http://www.b3.com.br/en_us/regulation/regulatory-framework/regulations-and-manuals/clearing-settlement-and-risk-management.htm - Post-trade, B3 Clearinghouse, B3 Clearinghouse Operating Procedures Manual.

53. MULTILATERAL NETTING AND SETTLEMENT INFORMATION

Once B3 has captured the transactions from the B3 PUMA Trading System and the allocation process has been concluded, the B3 Clearinghouse proceeds with multilateral netting of the obligations, resulting in a net debit or net credit position in both securities and cash for each of the participants involved in the settlement process. The net creditors and debtors receive information on their netting obligations/rights on T+2.

54. DELIVERY OF SECURITIES TO THE B3 CLEARINGHOUSE

B3 establishes a specific timeframe for net debtors in securities to deliver the securities.

Delivery is executed by the final and irrevocable:

- Debit of the securities from the final investor's account at the B3 CSD;
- Credit of the securities to the B3 Clearinghouse's transitory settlement account at the B3 CSD.

Considering the chain of responsibilities discussed in the previous section, the absence of securities in the final investor's account at the B3 CSD is characterized as a delivery failure attributable to the responsible clearing member. The clearing member remains responsible for fulfilling delivery obligations regardless of whether other participants have fulfilled theirs.

For detailed information, please see Clearinghouse Multilateral Netting and Settlement procedures, available at http://www.b3.com.br/en_us/regulation/regulatory-framework/regulations-and-manuals/clearing-settlement-and-risk-management.htm -Post-trade, B3 Clearinghouse Operating Procedures Manual.

55. PAYMENT TO THE B3 CLEARINGHOUSE

BACEN has established a specific timeframe for net debtors in cash to effect payments. This time interval is called a settlement window.

Payment is executed by the settlement bank of the clearing member (net debtor in cash) upon instruction, through the STR, of the payment of the amount calculated in the multilateral netting to the B3 Clearinghouse. The payment is processed in the STR by the BACEN and results in the final and irrevocable:

- Debit of cash from the settlement bank of the clearing member's account at BACEN;
- Credit of cash to the B3 Clearinghouse's transitory settlement account at BACEN.

For detailed information, please see Clearinghouse Multilateral Netting and Settlement procedures, available at http://www.b3.com.br/en_us/regulation/regulatory-framework/regulations-and-manuals/clearing-settlement-and-risk-management.htm - Post-trade, B3 Clearinghouse Operating Procedures Manual.

56. B3 CLEARINGHOUSE COORDINATION OF DELIVERY VERSUS PAYMENT

Once the B3 Clearinghouse has the delivered securities in its transitory settlement account at the B3 CSD and the payment funds in its transitory settlement account at BACEN, the B3 Clearinghouse will instruct the STR and B3 CSD for the simultaneous, final and irrevocable:

- Debit of cash from B3's Clearinghouse's transitory settlement account at BACEN and credit of cash to the account of the settlement bank of the clearing member (net creditor in cash) at BACEN;
- Debit of securities from the B3 Clearinghouse's transitory settlement account at the B3 CSD and the credit of securities to the account of the clearing member (net creditor in securities) at the B3 CSD.

57. DELIVERY FAILURE

One of the important distinctions of B3 Clearinghouse is that it accepts delays in delivery, but not failure in the sense of a participant never meeting its obligations. Furthermore, as even delays are heavily penalized, participants are encouraged to settle all transactions. Delivery failure accounts for less than 0.5% of the total volume of the equity market.

In the stock market, if a participant fails to deliver securities within the stipulated deadline, B3 Clearinghouse sets in motion a sequence of events that ensures that the settlement process can be completed as soon as possible:

- Compulsory borrowing of securities from the Securities Lending Service.
- Progressive punitive fines applicable to the defaulting party.
- Buy-in procedures at the expense of the defaulting party.

COMPULSORY SECURITIES LENDING

For cash equities, B3 Clearinghouse's settlement system is linked to the securities lending system so that any failure in delivery within the appropriate timeframe immediately triggers a check of the availability of the non-delivered security in the securities lending system.

If the security is available, the system automatically registers a borrower position on behalf of the investor who failed.

The securities lending transaction is automatic and will take place regardless of any order from the defaulting investor. Communications across different time zones can compromise the information flow for authorizing the delivery of securities: the NRI has to authorize the global custodian/foreign intermediary, who has to authorize the Local Custodian/Local Broker. Nevertheless, should the investor not have the available securities at delivery time, automated borrowing will ensue.

CHARACTERIZATION OF DELIVERY FAILURE

As a result of the automated securities lending arrangements, the securities are actually delivered for settlement. The delivery failure is only characterized, and fines applied, when the securities are not available for borrowing in the securities lending system.

IMPACTS OF THE MULTILATERAL NETTING

According to the Delivery versus Payment principles, once a counterparty has not delivered the appropriate securities, it will not receive the corresponding payment. As soon as a delivery failure is characterized, the B3 Clearinghouse will:

- Recalculate the cash leg multilateral netting
 - Excluding the transaction(s) where delivery has failed; and
 - Including the applicable fines
- Send updated payment messages to the affected clearing members' settlement banks.

The pending delivery and corresponding payment will be included in the next day's multilateral netting along with any fines applicable to the defaulting party.

In the cash equity market:

- T+2: delivery failure is characterized; multilateral netting is recalculated; the applicable fines are levied and new payment instructions are sent to the settlement banks of the affected clearing members.
- T+3: delivery and payment obligations that failed on T+2; integrate the multilateral netting of T+3. Should delivery fail again on T+3, the same procedures regarding the multilateral netting apply as well as any new and accrued fines and a buy-in order is issued on behalf of the harmed buyer.

FINES

The B3 Clearinghouse imposes punitive fines on the defaulting party for not delivering securities in due time. The fines are classified as a minimum fine and an additional fine and are a percentage of the defaulted value.

A minimum fine of 0.5% is charged to the clearing member that did not deliver the securities on T+2 or T+3.

Additional fines are charged from the responsible clearing member as detailed below (within its multilateral netting result):

DATE OF DEFAULT	DEFAULT CHARACTERIZATION	ADDITIONAL FINE VALUE (% OF THE DEFAULT VALUE)
T+2	Non-operational ² delivery failure on T+2	0.5%
T+2	T+2 failures rectified on T+4 and associated with purchase transactions in follow-on offering	4.5%
T+3	Non-operational delivery failure on T+3	4.5%

BUY-IN PROCEDURES

Should delivery not be fulfilled on T+3, a buy-in order is issued on behalf of the harmed party at the expense of the defaulting party. The Full Trading Participant that will execute this order is chosen randomly and the transaction takes place at market price. The settlement of the new transaction follows the usual settlement cycle so that, in the equity market, barring any further failures in delivery, the buyer will receive the securities on T+7 of the original transaction.

The buy-in order can be cancelled if both parties agree and in accordance with B3 Clearinghouse procedures.

Delivery failures at B3 are relatively rare because as the seller cannot control the delivery process in its entirety there is a relatively high probability that failure to deliver will be resolved through automated borrowing of securities, and should this fail the securities will be bought back.

5.8. PAYMENT FAILURE

Payment failure is characterized when the clearing member's settlement bank fails to transfer, via STR, the total amount due to B3 Clearinghouse's transitory settlement account at BACEN.

Nonpayment is interpreted as insolvency on the part of the defaulting clearing member, which triggers an immediate notice sent to BACEN that will independently monitor the process through the STR. At the same time, the central counterparty will apply its own safeguard mechanisms for handling insolvency.

59. THE IMPLICATIONS OF INSOLVENCY ALONG THE SETTLEMENT RESPONSIBILITY CHAIN

Considering the responsibility chain throughout the settlement process, one important aspect the NRI must consider are the implications of the aforementioned insolvency for each party in the chain.

DEFAULT OF THE FINAL INVESTOR

Should the final investor become insolvent, the B3 Clearinghouse will initiate the closeout of the defaulting NRI's position through the execution of assets held in its deposit account and the collateral posted by it. Collateral execution follows the procedures established in the B3 Clearinghouse Risk Management Manual.

Positions and collateral of non-defaulting investors will not be affected by the default of other investors under the same full trading participant (Local Broker).

DEFAULT OF THE FULL TRADING PARTICIPANT

Should the Full Trading Participant (Local Broker) become insolvent, the securities held in the NRI's deposit account under the responsibility of the insolvent Full Trading Participant are not compromised by any pending obligations. The securities are isolated in the beneficial owner deposit account in the name of the NRI, segregated from other customers' holdings as well as from the proprietary positions of the Local Broker.

Nevertheless, the NRI will have to transfer its positions and holdings to another Full Trading Participant (Local Broker) following procedures established by B3 Central Securities Depository.

In relation to the settlement process, deliveries that are to be made to accounts under the insolvent Local Broker can be restricted by the Clearing Member and only be completed when a new account is established in the name of the NRI.

If the securities are held with a Local Custodian that is different from the Local Broker, the securities belonging to the NRI are not impacted at all.

DEFAULT OF THE LOCAL CUSTODIAN

Should the Local Custodian become insolvent, the securities held in the NRI's deposit account under the responsibility of the insolvent custodian are not compromised by any pending obligations. The securities are isolated in the beneficial owner deposit account in the name of the NRI, segregated from other customers' holdings as well as from the proprietary positions of the Local Custodian.

Nevertheless, the NRI will have to appoint another Local Custodian before the CVM thus altering the NRI's CVM Code and CNPJ/CPF Code. Furthermore, the NRI will have to transfer its positions and holdings to the newly appointed Local Custodian following procedures established by the B3 Central Securities Depository.

In relation to the settlement process, deliveries to accounts under the insolvent Local Custodian can be made to the NRI's deposit account with the Local Broker until the Local Custodian's appointment has been regularized.

DEFAULT OF THE CLEARING MEMBER

Should the Clearing Member become insolvent, the Local Broker has to appoint a new Clearing Member according to procedures established by the B3 Clearinghouse. Once more, the positions and holdings of the NRI are not compromised by any pending obligations.

Nevertheless, the Local Broker will have to appoint a new Clearing Member and transfer all positions under the Local Broker's responsibility (including collateral) following procedures established by the B3 Clearinghouse.

In relation to the settlement process, deliveries to accounts under the insolvent Clearing Member are made to the NRI's deposit account with the Local Broker or the Local Custodian, as per usual, and payments are made by the B3 Clearinghouse to the Local Broker or a newly appointed Clearing Member.

DEFAULT OF B3

If the B3 Clearinghouse becomes insolvent, all the positions **will be closed out** and a single multilateral net result will be calculated for each Clearing Member if either of the following occurs:

- The filing by B3 of a judicial recovery claim or of an application for approval of an extrajudicial recovery plan;
- A judicial declaration of the bankruptcy of B3, provided the effects thereof are not suspended or revoked within fifteen (15) consecutive calendar days.

The Clearing Member positions **may be closed out** and a single multilateral net result calculated:

- If the B3 Clearinghouse fails, totally or partially, to pay the multilateral net balance owed to the Clearing Member on the settlement date or within the twenty (20) consecutive business days of the settlement date.

6. B3 CENTRAL SECURITIES DEPOSITORY

Distinctive characteristics to the Brazilian Central Securities Depository (CSD) business model provide investors and issuers with a safe and efficient environment.

6.1. DEMATERIALIZATION AND BOOK-ENTRY RECORDKEEPING

In contrast to most other important markets around the world, securities in Brazil have been fully dematerialized since the nineties. Custody positions are registered in book-entry format, as

are updates of corporate actions. Reconciliation mechanisms and controls involve automated electronic procedures and are completed over short intervals of time. To enable this, Brazilian legislation recognizes CSD's records as being legally valid.

The issuance of physical certificates is rare and not mandatory. In these cases, regulations require that certificates be immobilized and registered in centralized systems authorized by BACEN and the CVM.

6.2 BENEFICIAL OWNER ACCOUNT HOLDING SYSTEM

As mentioned before, Brazilian regulations require that all securities be registered in individual deposit accounts held by the Local Custodian with the CSD, under the beneficial owner's name. B3 keeps individual accounts to segregate investors' positions from custodian's positions, the proprietary position of the CSD and that of any other investors. Derivatives positions are also kept in the name of the beneficial owner.

The beneficial account holding system, also known as the transparent system, is considered the most advanced for CSDs under CPSS-IOSCO recommendations. According to these recommendations, "CSDs must be capable of segregating investor positions from their own proprietary positions and the positions of their participants, the custodians. In exceptional situations and as permitted by the legal framework, CSDs must segregate investor positions from each other".

The advantages of the beneficial owner account holding system are numerous, as already mentioned:

- **Legal certainty of asset ownership** – the structure of individualized accounts enables CSDs, BACEN and the CVM to identify perfectly the ownership rights associated with any asset at any moment in time. **In case of liquidation of any intermediary**, including the Local Custodian or the Local Broker, the Nonresident Investors' assets and positions are entirely preserved and segregated from anyone else's.
- **Enhanced regulatory oversight** – crimes such as money laundering and terrorist funding, the use of privileged information and fraud in general can be identified by the regulators very quickly and accurately. There have been cases in which suspicions regarding the use of proprietary information allowed regulators to identify the transactions even before settlement on T+2.
- **Improved self-regulation** – individual account holding systems also enhance the role of CSDs as self-regulatory organizations (SROs). Situations such as market manipulation, artificial prices and/or position concentration above legal limits may be quickly mapped.

In markets that use the omnibus accounts holding system, positions are registered in the CSD in the name of the custodian bank which in turn has control of the individual positions. If the custodian becomes insolvent, even though client positions are kept separately from their proprietary position, there is reasonable legal uncertainty regarding asset ownership, and investors may sustain significant losses due to the risk of poorly managed custody risk.

In countries that use an omnibus model, regulators and self-regulatory organizations do not have access to centralized information, which makes market oversight more difficult and also increases investor's custody risk.

63. SECURITIES INTEGRITY - DAILY RECONCILIATION WITH ISSUERS

Another important element to ensure the safety of NRIs is the integrity of the securities deposited in the CSD. Accurate record-keeping and reconciliation procedures must mitigate the risk of securities being created or disappearing. At any time the total volume of securities issued minus the number of securities registered on the issuers' record books must equal the number of securities deposited at the CSD.

B3 reconciles the securities deposited at the CSD with the issuers' record books, as recommended by CPSS-IOSCO. This reconciliation is automatic and based on the daily exchange of electronic files between the CSD and the issuers.

B3 also reconciles the CSD records with those kept by the Local Custodian on a daily basis, bearing in mind not only the balance but also any movements between accounts. The entire reconciliation process happens at the level of the beneficial owner in their individual accounts.

64. MANAGEMENT OF CORPORATE ACTIONS – PAYMENTS IN CENTRAL BANK MONEY

A core element of the CSD's activities is the servicing of payment flows associated with corporate actions announced by the issuers. Although each instrument and corporate action requires a specific treatment, two overall aspects are of interest from the NRI's perspective:

- The B3 CSD updates investor positions for all of the deposited securities, and makes payments to beneficial owners. Thus not only are the securities held under individual deposit accounts, but the rights associated with them are handled in the same way.
- In relation to corporate actions involving the cash payments, the payments carried out by B3 CSD go through the Large Value Transfer System within the Central Bank of Brazil (named STR) and, consequently, are made in central bank money. Therefore, funds are immediately available to the settlement banks of B3's Custody Agents (the NRI's Local Custodian). The settlement banks may credit the funds to the Local Custodian in only a few minutes, and credit the beneficial owner (the NRI) in its cash account in Brazil on the same day.

VIII. SECURITIES LENDING

Market Functioning

Brazil's securities lending market has some characteristics that set it apart from most other international markets.

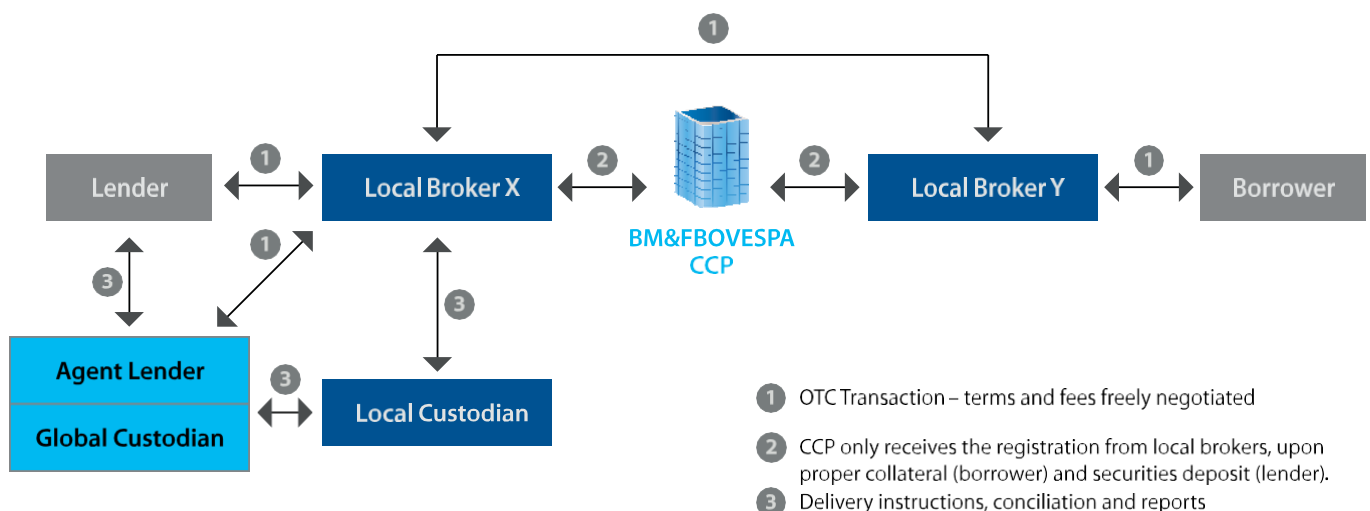
CVM Instruction 441/2006 requires that securities lending transactions must be:

- Centrally registered at a securities clearinghouse and central securities depository;
- Intermediated by the participants of a securities clearinghouse;
- Settled by a central counterparty that should require and manage collateral posted by its participants in order to ensure settlement.

Aligned with the beneficial owner account holding system employed at the B3 CSD, the securities involved in lending transactions are registered in the borrowers' individual deposit account, segregated from any other investors' holdings as well as from the participant's and those of B3 itself. Thus, all advantages related to ownership control and safety also apply to the securities lending program managed by B3.

Investors that participate in the securities lending program do so through a Custody Agent and/or an authorized broker-dealer. The intermediary is responsible for registering the loan and posting collateral with B3. If a broker-dealer is used, B3's rules require it to hire a B3 clearing member ("Clearing Member"), which is responsible for the settlement of all the transactions of such broker-dealer, including securities lending transactions.

The securities lending market is traditionally bilateral in many jurisdictions. As a result, holding collateral to support securities loans is a role generally performed by bank custodians in the bilateral lending market. However, the use of a central counterparty in securities lending transactions means that the central counterparty holds collateral for its own benefit to protect it against default by borrowers because the central counterparty takes the risk of guaranteeing the settlement of transactions it intermediates, which is the approach adopted by B3.



Risk Management

The securities lending market is guaranteed by the central counterparty, which provides certainty of settlement of loan agreements. For this purpose, the B3 Clearinghouse conducts a centralized risk assessment of the participants and investors and manages the collateral they post to cover their risk.

Loans are made against collateral in order to protect the lender against possible default by the borrower on its obligation to pay the lending fee and return equivalent securities at the end of the loan. B3 requires the borrowers to post collateral before taking any borrowing position (pre-margin model) so as to ensure a successful outcome for securities loans. Consistent with the B3 Clearinghouse Rules and Procedures, in performing its role of central counterparty, B3 uses a layered financial safeguards system designed to ensure transactions are cleared and settled, including securities lending transactions previously discussed in chapter 4.2 of this document. Collateral is then managed in a centralized way according to a single risk methodology. The level of collateralization is monitored in real time and should the need arise B3 has the power to demand additional collateral, including intraday. Collateral is also managed at the beneficial owner level.

B3 is responsible for marking the value of the loan and collateral to market. When collateral is insufficient to satisfy the lender's claim in the event of default, B3 must use other resources available to it in accordance with the procedures described in its rules. If a borrower fails to return a security, that borrower is subject to a 0.20% daily fine due and payable to B3, and twice the agreed interest rate, which B3 will then transfer to the lender upon receipt. If the borrower does not remedy the delivery failure by the business day following maturity of the loan B3 will issue a buy in order to the broker-dealer for the lender instructing it to purchase securities fungible with the loaned securities in the market and any costs incurred in that transaction will be charged to the borrower and credited to the lender. If the lender (or its intermediary) fails to pay those costs, B3 will execute on the collateral posted by or on behalf of that lender to satisfy its claim.

Main Features

Securities lenders earn a freely negotiated fee for lending securities. The fee is paid to lenders net of withholding income tax.

There are two types of agreements available for registration:

1. **RECALLABLE** by the Lender: Early settlement by the Borrower or by the Lender
2. **RETURNABLE** by the Borrower: early settlement by the Borrower

When a security is loaned, the title and the ownership are transferred to the borrower, meaning that the issuer will not be making direct payments to the lender. However, the borrower refunds the lender for payouts, at the same amounts and on the same dates as for the cash distributions that are paid out by the issuer. Therefore, the lenders retain rights to payouts or other corporate actions.

The ultimate borrower and ultimate lender have discretion to negotiate all other economic terms prior to the securities loan being novated to B3. B3 requires that certain matters be addressed, including:

- the type, class and quantity of the security;
- the interest rate;
- the maximum term for the securities loan and any grace period allowed for the return of the securities;
- whether the loan is callable and/or terminable at will by the borrower;
- the commission to be received by the broker-dealers; and
- the market price of the security.

The lending agreement can be carried out to its maximum term (maturity), can be terminated any time before the maximum term, depending on the type of agreement registered, or, alternatively, the agreement can be scrolled through the extension of the maximum term.

The lender is not required to pay any service, placement or other exchange fees in connection with such loan. All the fees due to the lender and to the exchange are paid by the borrower.

Payment for the loan is calculated in the form of a fee rate calculated as follows: Rate of interest to the borrower x number of securities x average quote for the security. The fee rate is calculated on a compounded basis of a 252 business days count convention. The lending fee will be paid on the agreement's expiration date or earlier, either by maturity or settlement.

The recall is available whenever a loan is registered with this feature. Recalled securities loans are required to settle at "T+2" or, if the recall notice is provided after 9:30 AM local time, "T+3," with the date the recall notice was delivered serving as "T".

The securities eligible for securities lending transactions include shares issued by public companies admitted for trading on B3 and other securities at the Clearinghouse's discretion. The securities involved in lending transactions must have been previously deposited in the Clearinghouse's Depository Service. The securities must be free and clear of any security interest that may restrict their circulation and their holders must have contractually consented to transactions of this kind.

Currently, eligible securities include stocks admitted for trading on the stock market, ETFs and sponsored Brazilian Depositary Receipts (BDRs).

Automatic Loans

Automatic Loans are the compulsory loan of securities utilizing the securities lending service (BTC), triggered by the clearinghouse to deal with delivery failure detected after the end of the securities delivery period. It is one of the mechanisms used by the clearinghouse to mitigate liquidity risk associated with securities delivery in spot transactions. Thus, in the event of failed delivery by a short seller of cash market equity securities, the automatic securities lending program is activated to track unfilled loan orders whose features as to size and loan term adequately accommodate the short seller's delivery obligation. Where more than one such loan order is outstanding, the system selects those which offer lower lending fee rates.

Thus, a short seller in default of its obligation to deliver securities will take a borrowing position in like securities so as to deliver them to the buyer, consummating the original trade. From this standpoint, securities lending plays a major part in the efficient functioning of settlement processes and the securities markets.

Taxation

The Lender receives remuneration subject to tax as fixed income in accordance with the rates below:

Holding Period Rate

To 180 days 22.5%

From 181 to 360 days 20%

From 361 to 720 days 17.5%

More than 720 days 15%

The tax rates are withheld by B3 taking into consideration the lender's tax condition:

Local based Investor and TaxHaven: decreasing rates above

Foreign Investor (4.373): 15%

Financial Institutions: not subject to withholding tax

Investment Funds: exempted

More information on the main features of the securities lending service provided by B3 is available at the link below:

http://www.b3.com.br/en_us/products-and-services/securities-lending/

IX. TAXATION

1. LEGAL FRAMEWORK AND TAX RESPONSIBILITY

According to Law 8.981/1995, Nonresident Investors have to designate a Tax Representative, responsible for fulfilling all tax obligations resulting from transactions executed on behalf of the Non-resident Investor represented.

The Brazilian legislation does not require the Tax Representative to be the same institution designated as Legal Representative (as established in Rule CVM 4.373/2014) – a Non-resident Investor can have different institutions acting as Legal Representative, Tax Representative and Local Custodian.

Nevertheless, it is not uncommon that Nonresident Investors designate the same institution to act simultaneously as Local Custodian, Legal Representative and/or Tax Representative. Even if the institution is not the same, they usually belong to the same financial conglomerate. Moreover, most institutions acting as Local Custodians in Brazil offer packages of services that include legal and fiscal representation, besides custody services.

The institution chosen as Tax Representative is responsible for explaining the applicable tax regime for each type of transaction to the Nonresident Investors and, as Local Custodian, for withholding the corresponding taxes. In case of doubts or claims related to taxation of their operations in Brazil, the Nonresident Investors should contact the Local Custodian for clarification.

2. TAXATION OF FINANCIAL INVESTMENTS

There are basically two types of taxes levied on financial investments in Brazil: income tax (IR) and IOF- a tax on credit, insurance, foreign exchange or securities transactions.

Nonresident investments can be registered in Brazil under Law 4.131/1962 (direct investments) or under Resolution 4.373/2014¹ (investment in portfolio).

Revenues earned by Nonresident Investors and originated from portfolio investments are basically subject to two types of taxes:

- Income tax (IR); and
- Tax on credit, insurance, foreign exchange or securities transactions (IOF)
 - IOF forex (or “IOF câmbio”);
 - IOF securities (or “IOF títulos”).

¹ CVM Instruction 4.373/2014 replaced CVM Instruction 2.689/2000.

Income tax on Nonresident Investors' earnings results from two triggering events:

- Accrual; and/or
- Capital gains.

Nonresident Investors' jurisdiction will also determine different tax treatments depending on whether the country of origin is considered a tax haven.

In accordance with Brazilian legislation, tax havens are those jurisdictions in which income is taxed at a rate lower than 20% or those where domestic laws do not permit access to information related to shareholding composition of legal entities or their ownership. The NRIs from tax havens are subject to the same tax rates as Brazilian investors, unless specific bilateral agreements have been established determining otherwise.

The list of tax havens may be found in article 1 of Brazilian Federal Revenue Service (Receita Federal do Brasil - RFB) Rule 1.037/2010.

IMPORTANT

The NRI's Tax Representative, usually the Local Custodian, is responsible for explaining to the NRI the tax regime applicable to its investments in Brazil – the nature of the taxation and the rates (tax havens or not). In case of doubts about its investments' taxation, the NRI should contact the Local Custodian directly for clarification.

In Annex 4 – Income Tax and IOF for Nonresident Investors, you will find more detailed information on the tax regime applicable to NRIs.

- 1 The CVM's Foreign Investor Registration is integrated to the RFB system so that upon registration of the Nonresident Investor in CVM, the RFB system generates automatically the "CNPJ Code".
- 2 The concept of non-operational delivery failure corresponds, in general terms, to the situations where the delivery was not affected due to errors or dependency on other settlements. For further information, please refer to the B3 Clearinghouse Rules and Procedures - Settlement.

ANNEX 1 - LEGAL REPRESENTATIVE AND NONRESIDENT INVESTOR REGISTRATION PROCEDURES

1. REGISTRATION OF THE LEGAL REPRESENTATIVE WITH THE SECURITIES AND EXCHANGE COMMISSION OF BRAZIL (CVM)

Institutions willing to act as Legal Representatives of Nonresident Investors (NRI) need to register with the Securities and Exchange Commission of Brazil (CVM).

The applicant should send a digital copy of the Registration Request, duly signed, to the email address gje-internet@cvm.gov.br. The Registration Request should identify the individual (name, tax code – CPF and email address) that will represent the NRI throughout its registration process at CVM.

Once the appointment of the Legal Representative is confirmed, CVM will automatically send an email to the address of the appointed individual containing the password for accessing their systems (CVMWeb and SIE-WEB). The Legal Representative can then register the NRIs, update the NRI information and send reports to the CVM.

2. REGISTRATION OF THE NRI WITH THE SECURITIES AND EXCHANGE COMMISSION OF BRAZIL (CVM) - ACCOUNT HOLDING AND THE “CVM CODE”

To invest in the Brazilian capital markets, the NRI can either be:

- A proprietary account holder - the NRI can only trade on its own behalf; or
- An omnibus account holder - the NRI can trade on its own behalf and for other NRIs registered under his omnibus account as passengers; or
- A passenger of an omnibus account.

IMPORTANT

In Brazil, differently from many markets, the omnibus accounts identify the legal representative, the holder of the omnibus account, but also each and every passenger of the omnibus. The implications of the beneficial owner identification are discussed in chapter 4.

Also, the NRI can be an account holder and/or a passenger of one or more accounts. In this case, the NRI will have a different CVM Code for each account.

The Legal Representative registers the NRI in the CVM system SIE-WEB by entering the NRI data as described in CVM Instruction 560/15. The Legal Representative then has to include the NRI in an omnibus account or constitute a proprietary account on its behalf. As soon as possible, the Legal Representative should inform the CVM of the Electronic Capital Registration identification code – the RDE by email to gie-internet@cvm.gov.br.

The CVM system generates an operational code for the NRI – the “CVM Code” – which must be informed in all trades carried out in the name of each passenger of an omnibus account, thus allowing:

- The identification of the final beneficial owner of all transactions; and
- The segregation of orders between the omnibus account holder and the passengers and among all the passengers.

3. REGISTRATION WITH THE BRAZILIAN FEDERAL REVENUE (RFB) – THE “CNPJ OR CPF CODE”

Based on an operational agreement between the Securities Commission (CVM) and the Federal Revenue Service (RFB), once the NRI is registered in the CVM’s Foreign Investor Registration system the RFB system generates automatically the Non-resident Investor identification code for taxation purposes – the “CNPJ or CPF Code”^A.

It is worth noting that should the NRI have more than one Legal Representative. In this case, according to Article 5 of the Normative Instruction RFB 1,634/2016, “the investment funds constituted abroad and the entities domiciled abroad that register in the CNPJ exclusively to invest in the financial and capital markets must obtain one registration code for each financial institution representative, responsible for the fulfillment of the investors’ tax obligations in the country, all National Monetary Council (CMN) regulations considered.”

According to the RFB, the Legal Representative should keep hold of the following documents :

- Legal representation contract;
- Registration confirmation issued by the CVM of the omnibus account in which the NRI is a participant;
- The information by the CVM with the CVM Code and the CNPJ or CPF Code.

^A CNPJ for legal persons and CPF for natural persons.

4. REGISTRATION WITH THE CENTRAL BANK - THE “RDE CODE”

The Central Bank of Brazil (BACEN), as monetary authority, has the duty to oversee the balance of the NRI holdings in Brazil in order to guarantee that the funds eventually sent abroad do not exceed the available amount held by the NRI. Therefore, BACEN has to be informed about capital inflows and outflows and balances have to be constantly updated in order to reflect the current value of the NRI holdings in the country. Operationally, this monitoring is done through the Electronic Capital Registration identification code - the RDE Code within BACEN's Information System (SISBACEN).

The Legal Representative has to register the NRI in the SISBACEN /RDE Portfolio in order to obtain the RDE Code which will be used for all foreign exchange transactions corresponding to capital inflows in portfolio investments or outflows for repatriation of funds. The RDE will also be used to update the NRI holdings. It is important to understand that the RDE Code is issued to the omnibus account and is shared by all passengers.

It is important to clarify that although the capital inflows and outflows have to be reported and updated, there is no restriction whatsoever to the size or periodicity of those flows, i.e. the NRI can freely bring capital to Brazil and send it back provided that the total amount repatriated does not exceed the NRI's total holdings.^B

^B See information regarding this subject (portugueses only) at <http://idg.receita.fazenda.gov.br/> - Orientação, Tributária, Cadastros, CNPJ, Orientações para Pessoa Jurídica Domiciliada no Exterior

ANNEX 2 - B3 TRADING AND REGISTRATION INFRASTRUCTURE

1. B3 EXCHANGE

According to Brazilian capital markets' regulations, equities can be traded either on an exchange or in an organized OTC market. Simultaneous trading in both environments is forbidden. As a result, equities traded solely on exchanges in Brazil. Derivatives are mainly exchange-traded but OTC transactions are allowed provided they are centrally registered (see the section below). Corporate fixed income instruments can be exchange-traded as is the case with B3, but are mainly OTC traded and centrally registered. Government bonds and forex are primarily interbank markets.

CVM Rule 461/2007 establishes the rules applicable to authorized exchanges in Brazil. The main aspects and requirements covered by the regulation are related to the price formation, pre and post trade transparency, investors' protection and the self-regulatory role of exchanges.

B3 operates a multi-asset trading platform – the B3 PUMA Trading System.

The B3 Exchange Rules and Procedures, approved by the CVM, are available at.

The main aspects covered are:

- Rules and functioning of the trading session (including rules for the after-market, day trading, market makers and circuit breakers).
- Rules and procedures for opening and closing the trading session.
- Rules and procedures for auctions.
- Types of orders and offers.
- Price formation criteria.

B3 also relies on a self-regulatory independent structure, B3 Market Supervision (BSM), responsible for market surveillance and periodic auditing of participants. BSM manages an Indemnification Mechanism that can be claimed by investors who feel they have been harmed by B3's Full Trading Participants and custody agents.

Local Brokers who are Full Trading Participants at B3 are solely responsible for executing trades on behalf of investors as well as for allocating transactions to the final beneficial owners.

B3 grants Execution Broker Certification to Full Trading Participants that demonstrate excellence in trade execution considering multiple criteria evaluated annually.

2. B3 TRADE REPOSITORY

In Brazil, the majority of derivatives transactions go through an exchange, with settlement being guaranteed by the central counterparty. For derivatives traded in OTC markets, regulations^A determine not only that they be registered with an exchange or organized OTC market, but also that they be approved by this entity to avoid artificial price formation and fraud in general. Regulations also require that all of the data regarding registered contracts be permanently available to the regulators, the CVM and BACEN.

While mandatory registration of OTC derivatives is a proposal that has been gaining favor in international discussions, it is still rare in international marketplaces. The same is true for sharing data about registered contracts. In Brazil, exchanges and organized OTC markets have maintained Trade Repository^B services for many decades now.

Data on registered OTC derivatives is shared through the Derivatives Exposure Center (Central de Exposição a Derivativos - CED), an initiative led by the Brazilian Bank Federation (Federação Brasileira de Bancos - FEBRABAN), which has 13 members, all of which financial institutions. Within the limitations imposed by secrecy laws, the CED lists the positions of companies that are registered in B3's Trade Repository, and have voluntarily adhered to the system. It is worth noting that only the regulators have access to the data in the system, and although participation is voluntary, CED records cover 90% of the registered contracts in this country.

Transparency is thus one of the characteristics of OTC derivatives handling in Brazil.

During the 2008 crisis, in a number of international systems, the lack of transparency contributed to expanding the crisis in confidence of the time, as nobody knew for sure the actual extent of the problem. In Brazil, at the height of the turmoil in international markets, Brazilian regulators tracked the exposure of a wide range of institutions, including some non-banking organizations such as security brokers and dealers^C. In fact, the measures that international markets resorted to as solutions for problems linked to the absence of transparency are already consolidated in the Brazilian market.

B3's Trade Repository is also used for registering fixed income securities transactions, since Brazilian regulation also requires that private fixed income primary and secondary distributions be registered in an exchange or organized OTC market.

^A CMN Resolution 2.042/1994 states that derivatives contracts that are traded or registered with an exchange or organized OTC market must be approved by such markets, which is regulated by CVM 467/2008.

^B Trades can also be registered in CETIP.

^C Data is available to the regulators quite quickly or in real time, in the case of B3.

ANNEX 3 - TRADING AUCTIONS - GENERAL RULES AND PROCEDURES

Auctions can be considered as a special trading procedure in which a given transaction is submitted to the interference of participants for a certain period of time.

All securities and derivatives traded at BM&FBOVESPA can be submitted to regular auctions that are triggered by parameters of quantity, price (quotation) and negotiability. The auction is opened with the theoretical price and for a given period of time is subjected to the interference of the trading participants.

1. THE AUCTION'S THEORETICAL PRICE (FIXING)

The criteria for defining the theoretical price are:

- First criteria: the auction's price is fixed at the value where the greatest quantity of securities or derivatives are traded;
- Second criteria: in case the first criteria gives more than one price, the prices that generate the least imbalance in the buy and in the sell offerings; and in the interval between those prices, the theoretical price is the one closest to the price of the last trade or, in its absence, the adjusted closing price.
- Third criteria: in case the first and second criteria give more than one price, the auction's price is the one closest to the price of the last trade or, in its absence, the adjusted closing price.

The main characteristics of the theoretical price fixing can be summarized as follows:

- Offers at the same price^A are not subjected to pro-rata procedures;
- The trading system uses a range of prices and not only one single price to define the theoretical price, the later will be the closest one to the price of the last trade or the adjustment price;
- Buying offers with a price greater or equivalent to the theoretical price and selling offers with a price lower or equivalent to the theoretical price cannot be canceled or have their quantities reduced; it is only allowed to increase the offer's price or quantity;
- Buying offers with a price greater than the theoretical price and selling offers with a price lower than the theoretical price will be executed in their totality; and
- Buying and selling offers with prices equivalent to the theoretical price could be executed in their totality, partially executed or not executed at all according to the auction's theoretical quantity.

For more information on the characteristics of the theoretical price fixing, please refer to

^A Some exceptions may apply, please consult BM&FBOVESPA Operational Procedures Manual

BM&FBOVESPA Operational Procedures Manual.

PRIORITY IN EXECUTION

For executing trades subject to auctions, the trading system will employ the following priority criteria:

- First offers executed are the offers to the market. If, in the auction's opening, the offers to the market are not fully executed, the remaining balance will be eliminated; and
- Offers limited by price are executed next, considering the chronological order of registration.

2. AUCTION EXTENSION

The auctions can be extended in some circumstances such as the ones indicated below:

- Changes in the theoretical price;
- Changes in the theoretical quantity;
- Registration of a new offer that alters the quantity executed of an offer previously registered;
- Changes in the non-executed balance (quantity); and
- Triggering of the protection tunnel.

The time parameters for the duration of the auctions as well as their prorogation are available at BM&FBOVESPA Operational Procedures Manual and Circular Letter releases).

3 AUCTION PARAMETERS

a) PARAMETERS OF QUANTITY

AVERAGE TRADED QUANTITY

The transactions with assets that fall within the average traded quantity criteria in the last 30 (thirty) trading sessions will follow the auctions' rules below:

Quantity	Auction duration
5 (five) to 10 (ten) fold the average traded quantity	At least 05 (five) minutes
More than 10 (ten) fold the average traded quantity	At least 1 (one) hour

Further details on the procedure applying to the auctions triggered by the average traded quantity criteria can be consulted in BM&FBOVESPA Operational Procedures.

QUANTITY IN RELATION TO THE ISSUER'S SHARE CAPITAL

The transactions with assets that fall within the criteria for quantity in relation to the issuer's share capital would follow the auctions' rules below:

Quantity	Auction duration
Standard lot between 0.5% and 0.99% of ordinary shares	At least 05 (five) minutes
Standard lot between 1% and 2.99% of ordinary shares	At least 1 (one) hour
Standard lot between 1% and 2.99% of preferred shares	At least 15 (fifteen) minutes
Standard lot between 3% and 4.99% of preferred shares	At least 1 (one) hour

The transactions with assets that fall within the quantity criteria below will be submitted to auctions of at least 15 (fifteen) minutes of duration after the disclosure of the auction note as indicated in the following table.

Quantity	Previously to the disclosure of the auction note
Standard lot between 3% and 6% of ordinary shares	24 (twenty four) hours
Standard lot above 6% of ordinary shares	48 (forty eight) hours
Standard lot between 5% and 20% of preferred shares	24 (twenty four) hours
Standard lot above 20% of preferred shares	48 (forty eight) hours

QUANTITY OF OPTIONS

In equity options transactions and options transactions involving domestic ETF's quotas the criteria of average traded quantity or the criteria for quantity in relation to the issuer's share capital consider the quantity of options in relation to the share capital of the issuer of the option's underlying asset as described below:

Quantity	Auction duration
5 (five) to 10 (ten) fold the average traded quantity	At least 05 (five) minutes
Standard lot more than 10 (ten) times the average traded quantity	at least 2 min

Quantity	Auction duration
Standard lot between 0.5% and 0.99% of ordinary shares	At least 05 (five) minutes
Standard lot between 1% and 2.99% of ordinary shares	At least 1 (one) hour
Standard lot between 1% and 2.99% of preferred shares	At least 15 (fifteen) minutes
Standard lot between 3% and 4.99% of preferred shares	At least 1 (one) hour

The transactions with options that fall within the quantity criteria below will be submitted to auctions of at least 15 (fifteen) minutes of duration after the disclosure of the auction note as indicated in the following table.

Quantity	Previously to the disclosure of the auction note
Standard lot between 3% and 6% of ordinary shares	24 (twenty four) hours
Standard lot above 6% of ordinary shares	48 (forty eight) hours
Standard lot between 5% and 20% of preferred shares	24 (twenty four) hours
Standard lot above 20% of preferred shares	48 (forty eight) hours

In transactions involving options on Indexes, the criteria for triggering the auctions are:

Options on Index	Quantity	Auction duration
Option on Ibovespa	Equal or above 5.000 (five thousand) options	At least 02 (two) minutes
Options on Ibrx-50	Equal or above 5.000 (two thousand) options	At least 02 (two) minutes

For specific rules regarding ETFs, BDRs and Units, please refer to BM&FBOVESPA Operational Procedures.

b) PARAMETERS OF QUOTATION

The quotation parameters for triggering auctions in transactions involving shares and options as well as the special procedures employed by B3 can be found at http://www.b3.com.br/en_us/regulation/regulatory-framework/regulations-and-manuals/trading.htm. Operational, Operational procedure manual - Bovespa segment stocks and stocks derivatives.

The transactions involving user defined strategies (UDS) are subject to auctions of, at least, 05 (five) minutes, where interference is allowed of at least 01 (one) standard lot.

c) NEGOTIABILITY

The transactions with assets that fall within the negotiability criteria will follow the rules indicated below:

Negotiability	Auction duration
Asset not traded in the last 05 (five) trading sessions	At least 15 (fifteen) minutes
First trade with the asset on the date the asset is admitted for trading	At least 15 (fifteen) minutes
First trade with the asset in case there has not been trades on the date the asset was admitted for trading	At least 1 (one) hour
First trade with the asset after a corporate action	At least 05 (five) minutes

ANNEX 4 - INCOME TAX AND IOF FOR NONRESIDENT INVESTORS

1. INCOME TAX ^A

Nonresident Investors who are not domiciled in tax havens are subject to a special, more favorable regime compared to local investors:

- There is no income tax on capital gains from transactions carried out in stock, commodities, futures and similar exchanges (RFB NI 1.585/2015, Article 63).
- The income tax rate on earnings from FIP equity funds, FIP fund of funds and emerging business investment funds (FIEE) is reduced to zero, as long no more than 5% of the fund portfolio is made up of non-convertible debt securities, and the investor has no participation nor receives earnings proportional to more than 40% of the shares issued (Law 11,312/2006, Article 3).
- The income tax rate on earnings from government bonds purchased after February 16, 2006, or from shares in investment funds exclusively for international investors who have at least 98% invested in government bonds is reduced to zero (Law 11.312, 2006, Article 1^B).
- The income tax on earnings from equities or securities purchased as of January 1 2011, that were the object of a public offering or issued by a non-financial legal entity, as well as real estate receivables certificates (CRI), issued to raise funds for investment projects, including research, development and innovation, is reduced to zero, so long as: such equities or securities are remunerated based on (i) a pre-determined interest rate linked to the price index or the reference rate (TR), and the parties have not agreed in full or in part to use floating rates, or (ii) equity funds that have at least 85% invested in such securities (or 67% in the first two years)^C (Law 12.341/2011, Article 1).
- The tax rate on earnings from credit right investment funds (FIDC) incorporated as a closed condominium and regulated by the CVM is reduced to zero, so long as the credit rights portfolio originator or assignor is not a financial institution and funds are allocated to investment projects, including research, development and innovation. Furthermore the expected profitability of the FDIC funds must be referenced to a fixed interest rate that in turn is linked to the price index or reference rate (TR)^D (Law 12.431/2011, Article 1).
- The income tax on earnings from shares in funds with at least 85% of their net equity (67% in the first two years) invested in debentures issued by a special purpose entity focused on investments in infrastructure and research and development is reduced to zero^E (Law 12.431, Article 3, header).

^A Based on the chapter Tax Advantages for International Investors in Brazil of the document The Benefits of Investing Directly in Brazil, published by the Brain Brazil in 2017 and available at <http://brainbrasil.org/wp-content/uploads/2017/01/TheBenefitsOfInvesting.pdf>

^B These advantages do not apply to government bonds, forwards and securities lending transactions.

^C Some additional terms apply to the term, the prohibition on buy-back and resell commitments, registration and resource allocation.

^D Additional conditions regarding the term, the allocation of fund resources, related parties, registration, resource allocation and minimum information to be disclosed to investors apply.

^E More specifically, the law states that the purpose of the debentures must be to “raise funds to implement investment projects in infrastructure and intensive economic production in research, development and innovation that are considered to be a priority by the Federal Executive Power”.

The zero income tax rate on earnings from investments in government bonds is relatively recent (2006) and an example of improving tax legislation, to the extent that it benefits international investors directly. It has a positive impact on the cost of Brazil's government debt as investors consider net (after tax) returns on their investment. By waiving income tax on interest paid, the Brazilian government in effect reduced the interest rate demanded by international investors, decreasing the overall cost of the nation's public debt.

Regarding the benefits granted on debenture funds that focus on infrastructure, it is worth mentioning that if the debenture issuer fails to invest the amounts in the issue deed, or does not invest in the projects listed, international investors are not subject to any sanctions and their exemption rights are protected. The issuer of the security and the FDIC/CRI assignor will be penalized, but the legal security of the investment and the tax regime to which it is subject are assured. (Law 12.431/2011, Article 1, Paragraph 8)

Rates for international investors are also better than those offered local investors in the following situations:

- Income from equity investment funds, swap transactions, whether or not these are exchange registered, and non-exchange futures markets, where they are charged a 10% income tax rate, as opposed to the 15% investors residing in Brazil are charged (NI 1.585/2015, Article 89, I).
- All other earnings, including those from fixed income exchange or OTC transactions pay 15% income tax, regardless of the term (NI 1.585/2015, Article 89, II).

Regarding this last item, it is important to point out that investors domiciled in Brazil are taxed at a decreasing rate, depending on how long the investment is held as showed in the table below:

Rate	Period of investment
22.5%	fewer than 180 days
20%	between 180 and 360 days
17.5%	between 360 and 720 days
15%	more than 720 days

It should also be noted that although FIP equity funds focus on equity investments, they are also authorized to invest in convertible debt securities, and the income from these is also tax exempt if they are distributed by FIPs that meet the requirements listed above. Income tax is also waived for corporate dividends paid to both Nonresident Investors and those domiciled in Brazil.

In a more general way, it is also worth remembering that for investors not residing in a tax haven, income tax on earnings from investment funds is levied only when funds are redeemed.

2. TAX ON CREDIT, FOREIGN EXCHANGE AND INSURANCE FINANCIAL TRANSACTIONS (IOF)^F

The IOF tax is governed by Law 8.894/1994 and Decree 6.306/2007. It primarily affects Nonresident Investors (NRI) in foreign exchange transactions related to the capital inflow and outflow due to the IOF applied on foreign exchange transactions. This is a non-fiscal tax. In other words, it is used not to raise funds but as a Central Bank of Brazil tool to manage monetary policy.

Legislation enables reducing the IOF rate to zero for foreign exchange transactions of NRI who will:

- Invest in exchange traded variable income instruments;
- Purchase publicly offered stocks that are registered with the CVM or exempt from such registration, or to subscribe to stock issued by companies whose stock is registered for trading on an exchange;
- Invest in FIP equity investment funds, or in FIP fund of funds or emerging business investment funds (FIEE);
- Invest in equity or securities, receivables investment funds (FIDCs) and debenture funds set up to raise funds for investment projects, including those that focus on research, development and innovation as stipulated in Articles 1 and 3 of Law 12.431 (mentioned under income tax above);
- Invest in real estate investment funds (FII);
- Foreign exchange transactions to remit any interest on equity or dividends received by an international investor

The IOF also penalizes extremely short term investments. The IOF applies to earnings from investments that are liquidated or have a maturity date before completing 30 (thirty) days. The IOF rate decreases linearly along this period, as shown in the table below.

1 day: 96%	7 days: 76%	13 days: 56%	19 days: 36%	25 days: 16%
2 days: 93%	8 days: 73%	14 days: 53%	20 days: 33%	26 days: 13%
3 days: 90%	9 days: 70%	15 days: 50%	21 days: 30%	27 days: 10%
4 days: 86%	10 days: 66%	16 days: 46%	22 days: 26%	28 days: 6%
5 days: 83%	11 days: 63%	17 days: 43%	23 days: 23%	29 days: 3%
6 days: 80%	12 days: 60%	18 days: 40%	24 days: 20%	30 days: 0%
6 days: 80%	12 days: 60%	18 days: 40%	24 days: 20%	30 days: 0%

^F Based on the chapter Tax Advantages for International Investors in Brazil of the document The Benefits of Investing Directly in Brazil, published by the Brain Brazil in 2017 and available at <http://brainbrasil.org/wp-content/uploads/2017/01/TheBenefitsOfInvesting.pdf>



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