

STR

*Sistema de Transferência
de Reservas*
(Reserves Transfer System)

Annual Report 2023

Prepared by
Banco Central do Brasil
Department of Banking Operations and Payments System

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Introduction

About this report

This is the seventh English version of the annual report for STR – *Sistema de Transferência de Reservas* (Reserves Transfer System) and comprises the last five years (2019 to 2023), with an emphasis on the last year.

The report presents data on the management and operation of STR and is suitable for the overall public interested in detail about STR and its relevance to the *Sistema de Pagamentos Brasileiro* (Brazilian Payments System).

“Chapter 1 – Participation” focuses on the participants of STR.

“Chapter 2 – Funds transfers” provides information on the number of transactions and values settled, as well as their evolution over the years. It also provides an in-depth analysis on the settlement of TED – *Transferência Eletrônica Disponível* (Electronic Funds Transfer) and presents the evolution of BCB Intraday Repo, a zero-cost liquidity mechanism offered by BCB – *Banco Central do Brasil* (Central Bank of Brazil).

“Chapter 3 – Performance” discloses information on STR availability to its participants and on its cost recovery.

Reserves Transfer System

STR¹ is the real-time gross settlement (RTGS) system for funds transfers in Brazil. It is the backbone of the Brazilian financial system. Its main characteristics are:

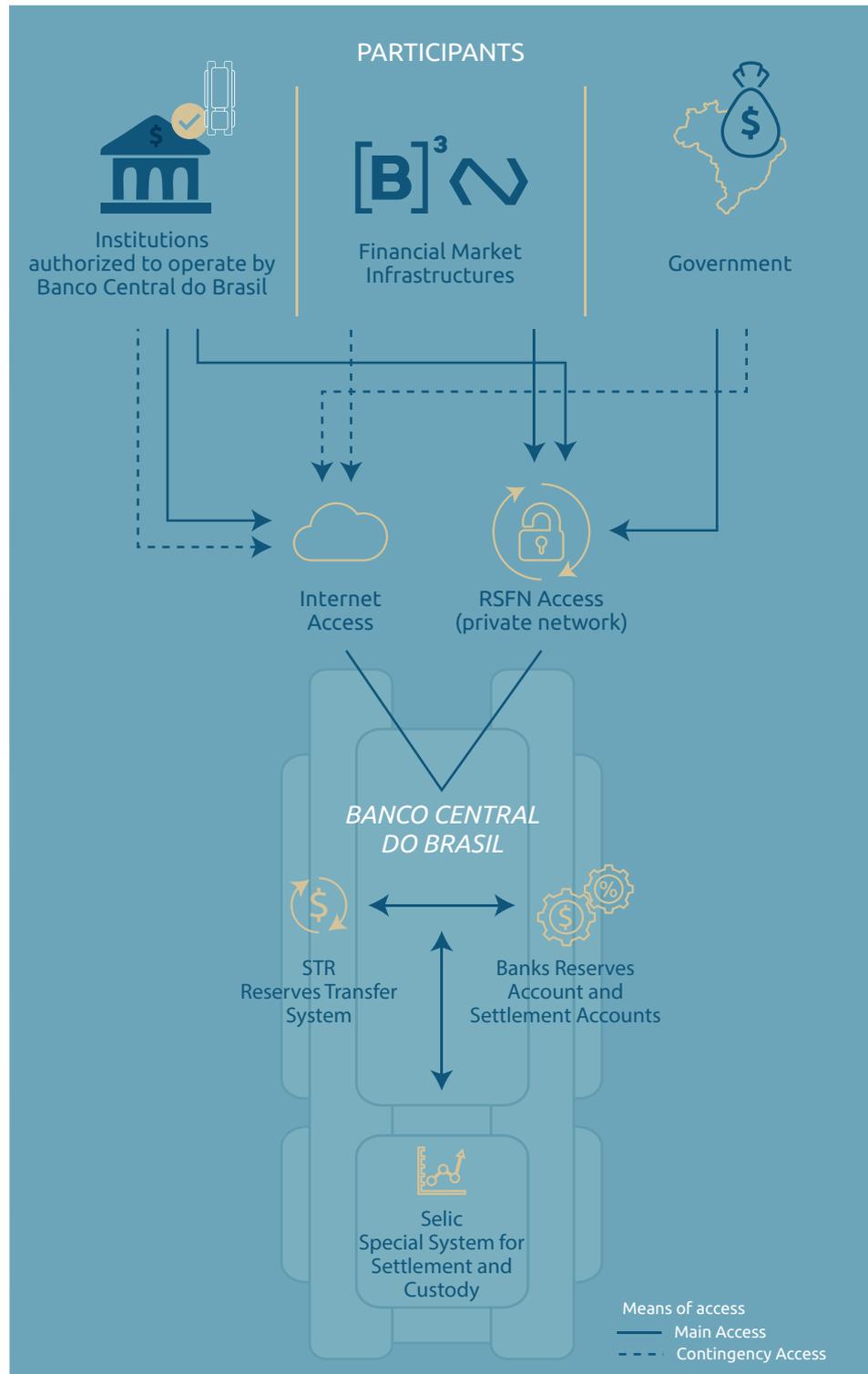
- Direct participants can issue funds transfer orders on their own behalf or on behalf of a third party (an order is always issued by the account holder).
- Overdraft is not allowed.
- Funds transfers are final (finality), that is, irrevocable and unconditional.

STR is managed and operated by the Department of Banking Operations and Payments System, while the IT provider is the Department of Information Technology.

1 Refer to: <https://www.bcb.gov.br/en/financialstability/reservestransfersystem>.

Figure 1 shows an overview of the STR structure, with its two means of access: via RSFN – *Rede do Sistema Financeiro Nacional* (National Financial System Network) and over the Internet, using the STR-Web application provided by BCB.

Figure 1 – STR Structure

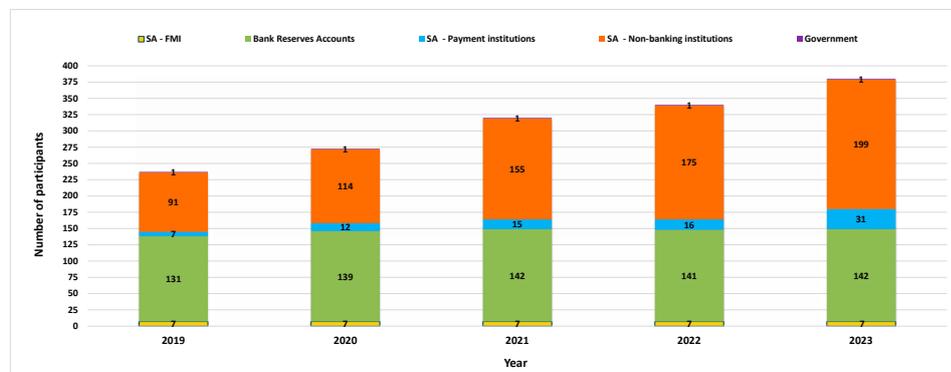


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Participation

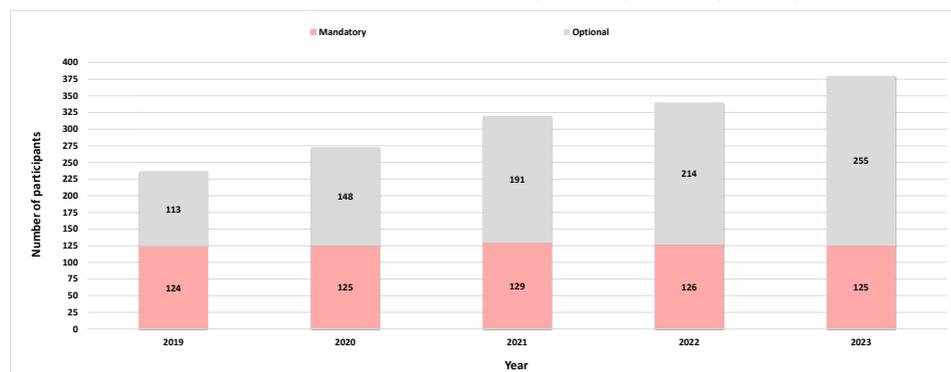
There are different types of accounts in STR.² In a nutshell, the Bank Reserves Accounts are held by banking institutions and the Settlement Accounts (SA) are held by non-banking institutions, payment institutions, and FMI (clearing and settlement service providers). There is also the National Treasury Account.

Chart 1 – Shows the quantitative trend by accounts’ type



It is worth noting the significant increase of 94% in the number of accounts held by payment institutions in 2023, as well as the continued growth in the number of accounts held by non-banking institutions, which increased by 14%. As a result, the number of optional participants has reached 67% of the account holders.

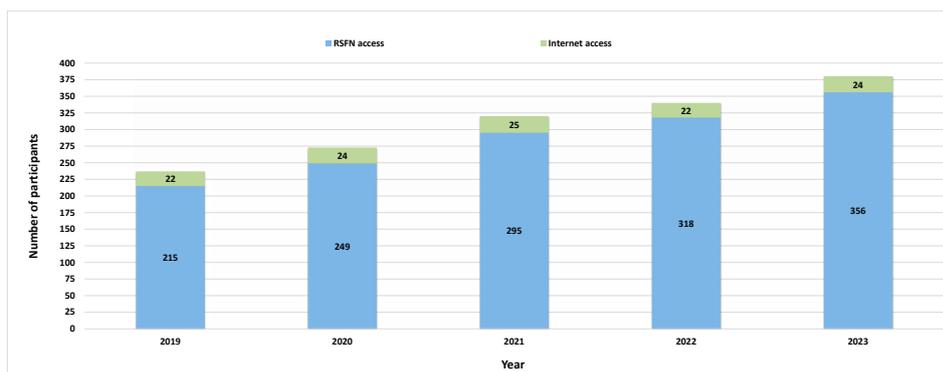
Chart 2 – Exhibits the number of mandatory and optional participants in STR



The RSFN is the main mean of access to STR, used by 94% of the participants. The access via Internet, also available as a contingency for RSFN users, was the main mean of access for 24 participants in 2023.

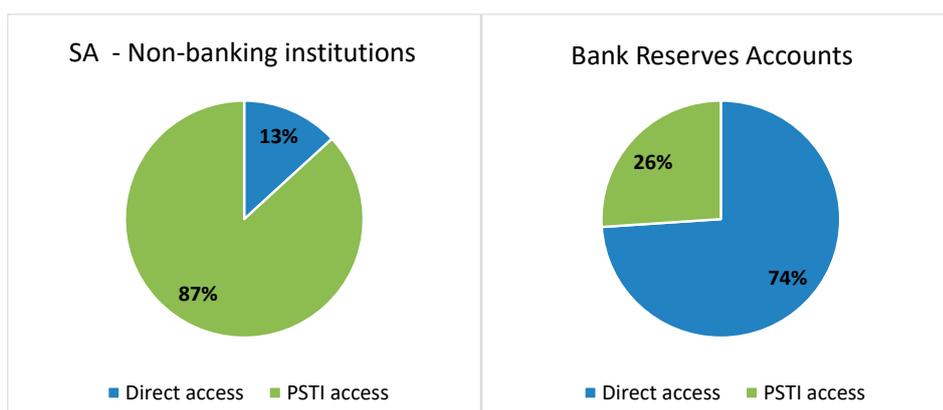
² See BCB Account Types in the Glossary.

Chart 3 – Presents the usage trend of the means of access to STR



Access to the RSNF can be direct or through a PSTI – *Provedor de Serviços de Tecnologia da Informação* (IT Services Provider), which are entities accredited by BCB to provide access to the RSNF. There are six active PSTI and two others already certified, and the cost to access STR may be reduced by using one of them. Among RSNF users, 208 (58%) use a PSTI. While 74% of banking institutions opt for direct access, 87% of non-banking institutions use a PSTI.

Chart 4 – Shows the share of RSNF users with direct access, segregated by type of account



Out of the 49 participants that joined in 2023, 7 opted for direct access, while 39 (80%) chose a PSTI. The remaining 3 chose the Internet access.

Among the new participants there are 3 banks and 15 payment institutions. The others are non-banking institutions, namely:

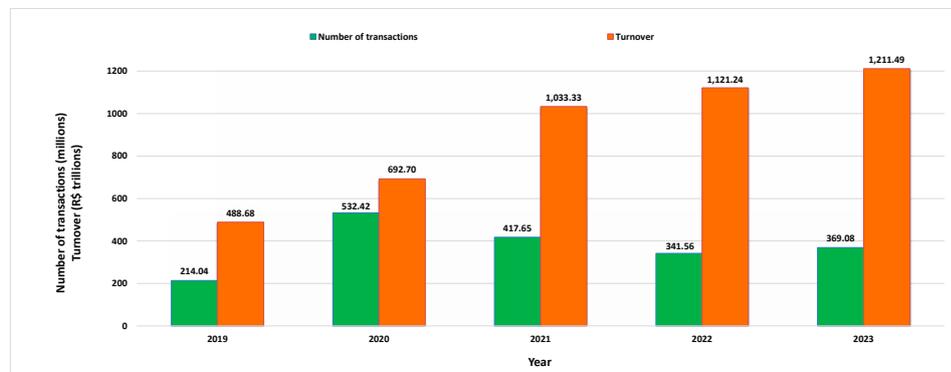
- 1 credit union;
- 2 exchange brokerage companies;
- 2 microentrepreneur credit companies;
- 1 security brokerage company;
- 16 direct credit societies (credit fintechs);
- 5 consumer finance companies;
- 3 security distribution companies;
- 1 peer-to-peer loan company.

2

Funds Transfers

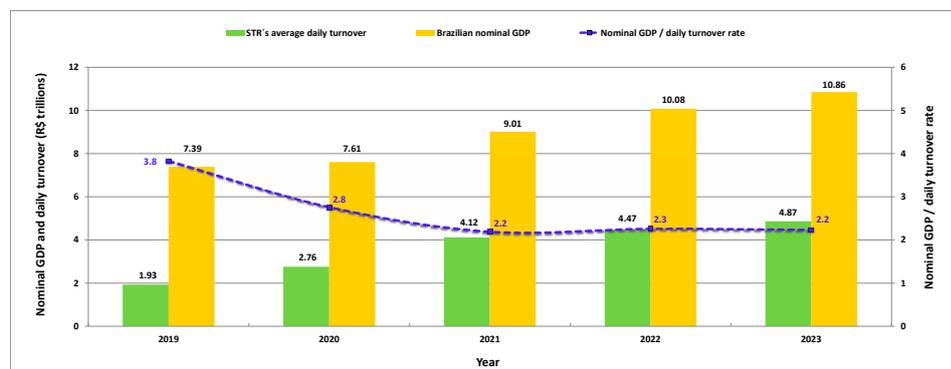
Turnover and number of transactions

Chart 5 – Shows the yearly number of transactions and turnover in STR for the last five years



The data outlines a higher turnover, explained by the larger amount moved in transactions involving government bonds (R\$90.4 trillion more than in 2022). The amount transferred on behalf of clients increased R\$1.4 trillion, while the number of transactions increased by 1.5%, leading to an increase of 3.3% in the average amount.

Chart 6 – Compares the average daily turnover for STR and the nominal Brazilian Annual GDP:

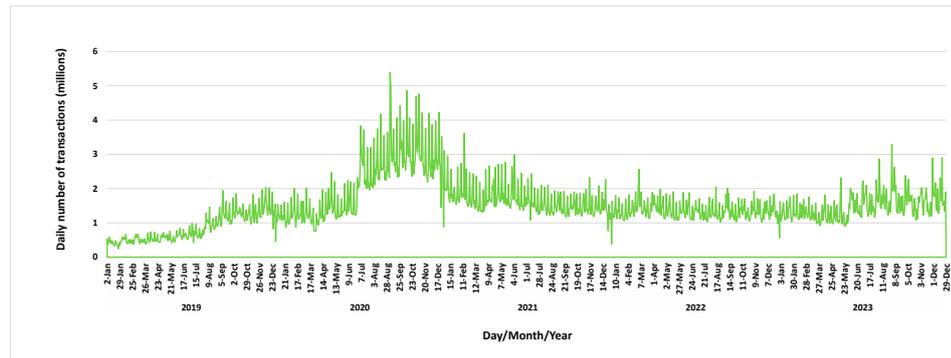


It is worth mentioning that, in 2023, STR settled the equivalent of the nominal Annual GDP³ every 2.2 days of operation.

3 Nominal GDP is calculated at current prices, not discounting inflation effects, and is subject to revision.

Transactions distribution

Chart 7 – Shows STR’s daily number of transactions for the last five years

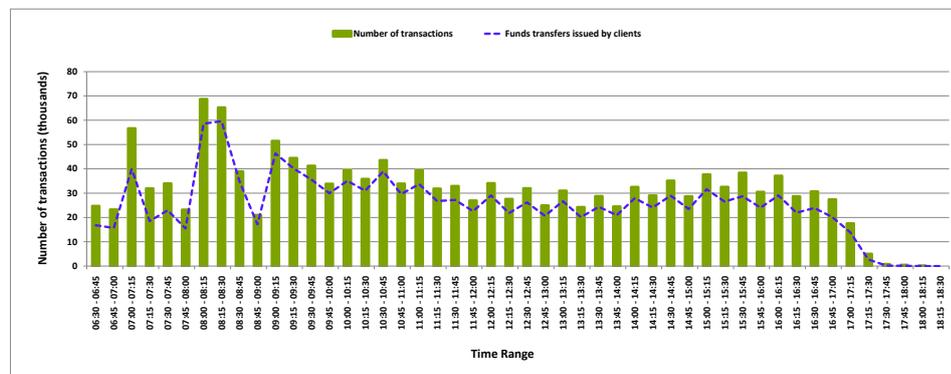


The following can be highlighted for the period:

- lower number of transactions on December 24th and on the last working day of the year, dates on which STR has reduced operating hours.
- Peak number of transactions occurring after holidays and weekends, due to the accumulation of orders scheduled to be processed on the next business day.

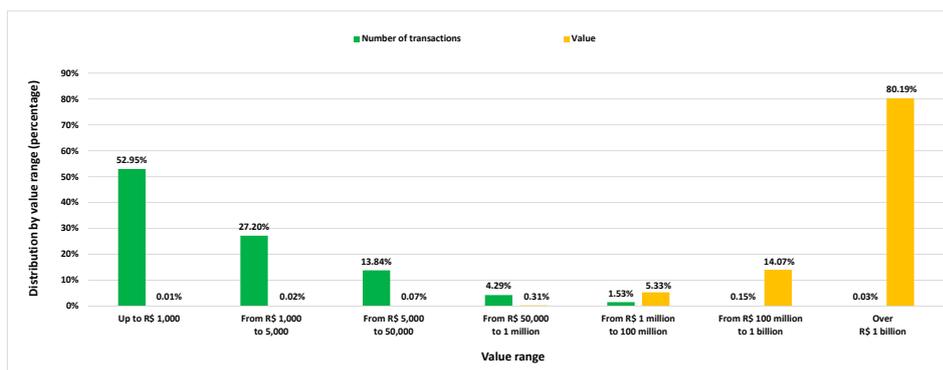
After two years of reduction in the number of messages settled in STR, due to a partial migration of transactions on behalf of clients to SPI – *Sistema de Pagamentos Instantâneos* (Instant Payments System), there was an increase in 2023, which was caused by a partial migration of funds transfers from Sitraf to STR (see “TED settlement”).

Chart 8 – Presents the average intraday transactions distribution



The chart depicts that most of the intraday pattern is explained by the transactions on behalf of clients.

Chart 9 – Shows the distribution of transactions by value ranges in 2023



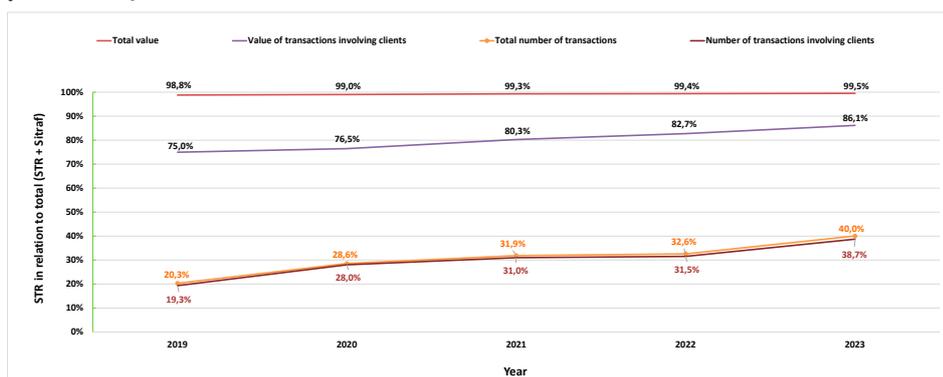
This chart highlights the inverse relationship between the number of messages and their values. In the last years the percentage of transactions below R\$1,000 has significantly decreased due to the partial migration of transactions on behalf of clients to SPI. The percentage of operations in this range fell from 79.15% in 2020, to 70.89% in 2021, to 62.73% in 2022, and to 52.95% in 2023.

TED settlement

The payment system in which a TED will be settled is chosen by the sending institution, between STR (operated by BCB) and Sitraf (operated by a private FMI), with the following exceptions that require settlement in STR:

- Issued on its (institution) own behalf.
- For investment in capital or financial markets, whenever the issuer or the recipient holds a Bank Reserves Accounts or a Settlement Account.
- Value of R\$1 million or more.
- For tax collection or government payments.

Chart 10 – Shows the ratio of orders settled by STR in relation to the total (STR plus Sitraf)



We can observe that STR settled about 20% of the total number of transactions in 2019, and this percentage has doubled to 40% in 2023. The growth observed from 2019 to 2020 was caused by payment institutions that chose to settle in STR instead of Sitraf. The growth from 2022 to 2023, on the other hand, was caused by an increase in the fees charged by Sitraf, which led to a partial migration of funds transfers from Sitraf to STR.

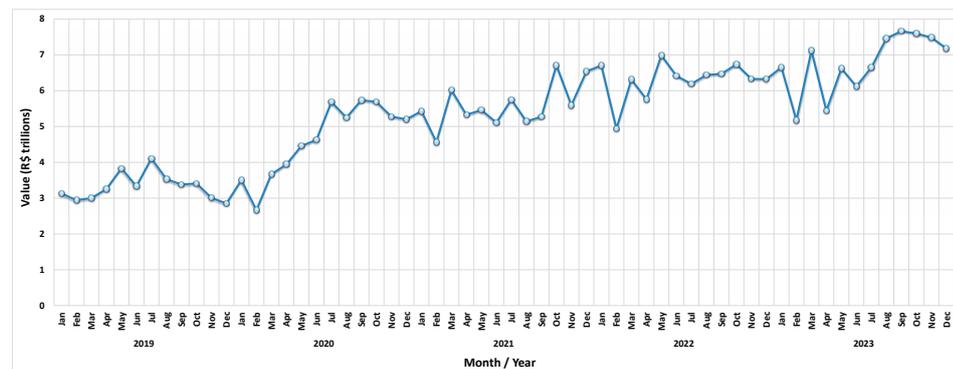
Regarding the value of all operations, the concentration in STR highlights its role in offering intraday liquidity through repo operations and settlement of large-value funds transfers in central bank money. The amount moved in operations involving government bonds in 2023, for example, reached R\$995 trillion, representing more than 82% of the total value settled by STR. Out of that, R\$162 trillion refers to intraday repo operations, as described in the next item of this report. Transfers to comply with reserve requirements reached R\$117 trillion, which represents almost 10% of the total value settled.

Intraday repo

Many RTGS systems offer some source of intraday credit to their participants in order to keep a regular flow of payments, even if there is a temporary gap between out going and incoming payments during the day.

In Brazil, this liquidity provision is offered through free of charge intraday repo transactions, collateralised by Domestic Federal Securities issued by the National Treasury. This instrument has been widely used.

Chart 11 – Shows the monthly evolution of the value of BCB intraday repo



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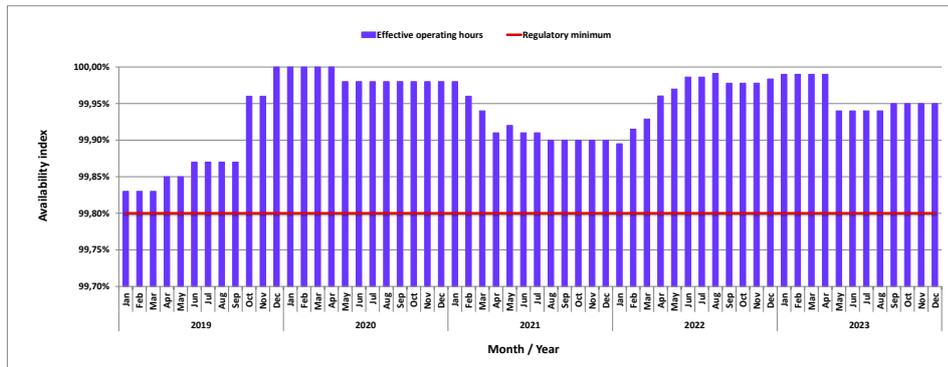
Performance

Availability index

All Brazilian FMI, including STR, must maintain an availability index of at least 99.80%.

The availability index represents the time the system was operational in the last twelve months in comparison to the time it should have been operational, considering the regular operating hours. STR's availability index is calculated monthly, and remained above the regulatory minimum throughout the last five years, reaching 99.95% in December 2023.

Chart 12 – Shows a month-by-month comparison between STR availability index and the regulatory minimum



Cost recovery policy

In order to recover its costs, STR charges fees from its participants, according to STR regulation. Fees are split in two categories:

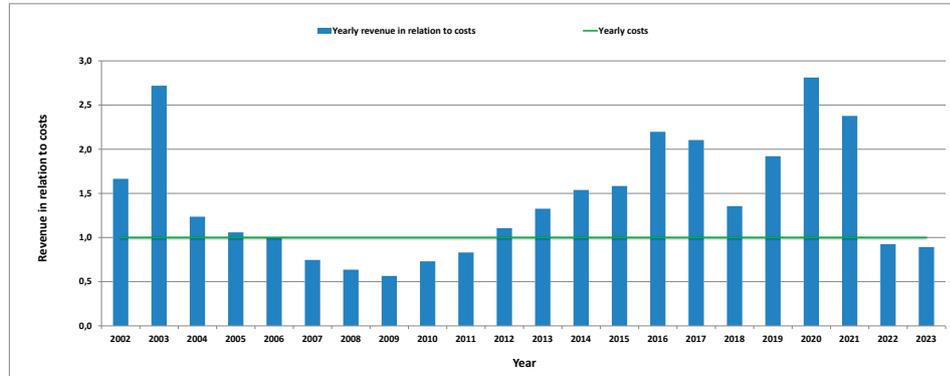
- Variable: per settled transfer order, per information provided, or per usage of the contingency service.
- Fixed: monthly fee for the usage of the STR-Web internet application as main mean of access to STR.

Expenses, in turn, are split in three categories:

- Investment: for updates, improvements or renewal.
- Management, operation and monitoring.
- Technology: software, hardware and human resources involved.

BCB performs a systematic monitoring of revenues and costs of STR, to ensure that its cost recovery objectives are effective. Considering current and accumulated operational results, as well as future projections, BCB adjusts the fees charged, making its evaluation public through technical notes. Costs remain close enough to revenues since 2022.

Chart 13 – Illustrates revenues in relation to costs since 2002



4

Evolution

Improvements in the incoming messages queue service, so that messages become available for processing as quickly as possible, are planned for 2024. It is expected a considerable reduction in the response time in situations where a large number of messages are submitted in a short period of time.

Glossary

BCB Account Types

Bank Reserves Accounts

- Mandatory for commercial banks, universal banks with commercial bank activities, and savings banks.
- Optional for development banks, investment banks, foreign exchange banks, and universal banks without commercial bank activities.

Settlement Accounts

- Mandatory for systemically important FMI.
- Optional for non-banking institutions, non-systemically important FMI, and payment institutions.

National Treasury Account

Acronyms

BCB	<i>Banco Central do Brasil</i> (Central Bank of Brazil)
FMI	Financial Market Infrastructure
GDP	Gross Domestic Product
PSTI	IT Services Provider accredited by BCB
RSFN	Brazilian Financial System Network
RTGS	Real-Time Gross Settlement
SA	Settlement Account
SPI	BCB's Instant Payments System
Selic	Special System for Settlement and Custody
Sitraf	RTGS system operated by a private FMI
STR	BCB's RTGS system
TED	Payment instrument for interbank fund transfer

