

Treatment of Crypto Assets in Brazil's Balance of Payments

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I - Introduction

Transnational flows of crypto assets have grown significantly in recent years. In the case of Brazil, flows between residents and nonresidents – almost exclusively imports – rose from negligible amounts in 2017 to USD9.2 billion in the 12-month period ending in June 2023. The sharp and sudden increase in these transactions has sparked international debate on how to adequately reflect these flows in macroeconomic statistics.⁴ Discussions have addressed not only classification, but also taxonomy, data collection, and dissemination of crypto asset statistics.

This text focuses on the collection and dissemination framework of data on crypto assets similar to Bitcoin – *crypto asset without a corresponding liability designed to act as a general medium of exchange* (CAWLM) – and its treatment in Brazil's balance of payments statistics. The text does not aim at addressing the treatment of other types of crypto assets, such as stablecoins (digital assets with parity in another asset, commodity, or currency, for example, for which there is an issuing economic unit) or digital currencies issued by central banks⁵.

II – Taxonomy and Methodological Treatment of CAWLM in External Sector Statistics

Following the International Monetary Fund's (IMF) methodological guidance of 2019 on the treatment of crypto assets in external sector statistics⁶, CAWLMs are currently classified in Brazil's balance of payments under exports or imports of goods. The rationale supporting this classification is that CAWLMs are nonfinancial assets since they are assets that do not constitute liabilities of an issuing counterparty; and produced assets because they are obtained by a productive process ("mining").

According to forthcoming guidance, CAWLMs will be treated as nonproduced assets, and therefore no longer classified under exports or imports of goods, but rather under acquisition/disposal of nonproduced, nonfinancial assets, a component of the capital account⁷.

Because they are not financial assets, CAWLMs are not recorded in other external sector statistics, such as external debt, which records positions of financial liabilities, or the

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⁴ The discussions involve national agencies compiling statistics and international bodies. The description of these discussions as well as methodological guidelines on the statistical treatment of crypto assets are contained in section IV – Methodological discussions, of this text.

⁵ The treatment of these types of crypto assets of these natures has not been the subject of controversy as compilers seem to agree that they should be treated as financial assets (assets that constitute a liability of the issuer).

⁶ Treatment of Crypto Assets in Macroeconomic Statistics, Clarification Note No. 9, 2019, available at <https://www.imf.org/external/pubs/ft/bop/2019/pdf/Clarification0422.pdf>. In that text, CAWLMs are termed Bitcoin-like crypto assets (BCLA).

⁷ This change was addressed by the IMF during a seminar held on May 23 and 24, 2023.

international investment position (IIP), which records positions of financial assets and liabilities. Notwithstanding, its quasi-money characteristics have raised interest and elicited debate on the need for statistics on CAWLM position data.

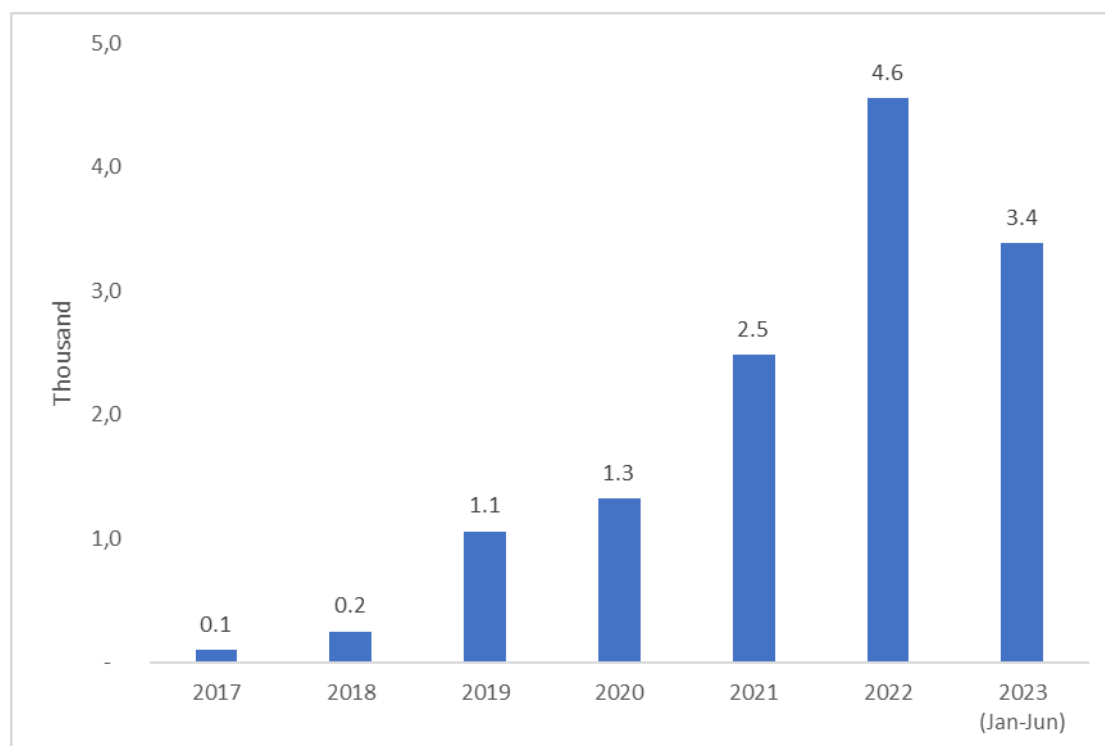
III – CAWLM Statistics

Brazil's balance of payments shows high import values and low export values of CAWLM. In the 12-month period ending in June 2023, CAWLM imports totaled USD9.2 billion, while exports totaled USD220 million. The relative absence of CAWLM exports is due, among other factors, to the high cost of electricity in Brazil, which inhibits cryptocurrency mining. This argument is backed by data from the IMF, according to which 80% of the world's Bitcoin mining is carried out in just four countries: China, Georgia, Sweden, and the US⁸.

The CAWLM market structure for Brazil comprises: the purchase of CAWLMs by large resident crypto asset exchanges from nonresidents, for distribution (sale) to resident clients, including individuals; and domestic trade, between resident exchanges or between these exchanges and their clients, including individuals.

CAWLM transactions between residents and nonresidents are measured through foreign exchange (FX) settlements, which are the basis for the International Transactions Registration System (ITRS) of Banco Central do Brasil (BCB). Figure 1 shows the evolution of the monthly average number of CAWLM FX transactions, which increased continuously from 2017 to 2022⁹.

Figure 1 – CAWLM-related foreign exchange transactions – monthly average



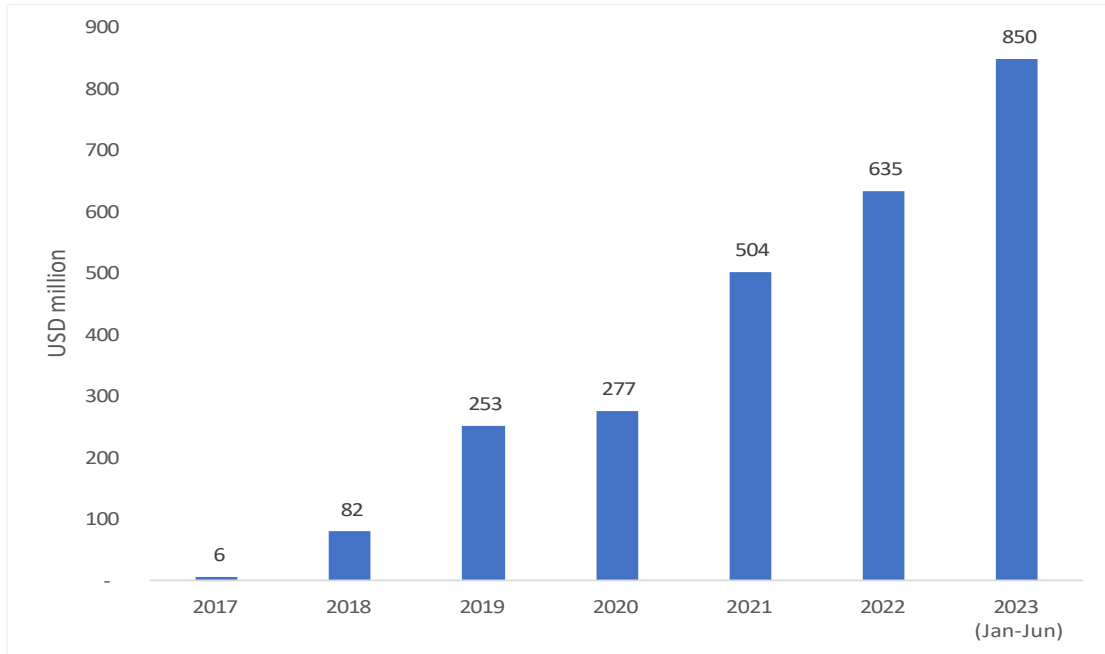
⁸ Clarification Note No. 9, 2019, mentioned in footnote 6.

⁹ In 2022, the number of monthly transactions spiked to 4.6 thousand, due mostly to outlying operations of a new crypto asset exchange entering the market. This is explained in Section IV. Data adjusted for this outlier show stabilization in average monthly number of contracts between 2022 and the first half of 2023.

Source: BCB

The monthly average value of CAWLM FX transactions also shows an upward trend since the beginning of the series, having reached more than USD850 million in 2023 (January-June), as shown in Figure 2.

Figure 2 – Foreign exchange related to CAWLM – average monthly volume of transactions

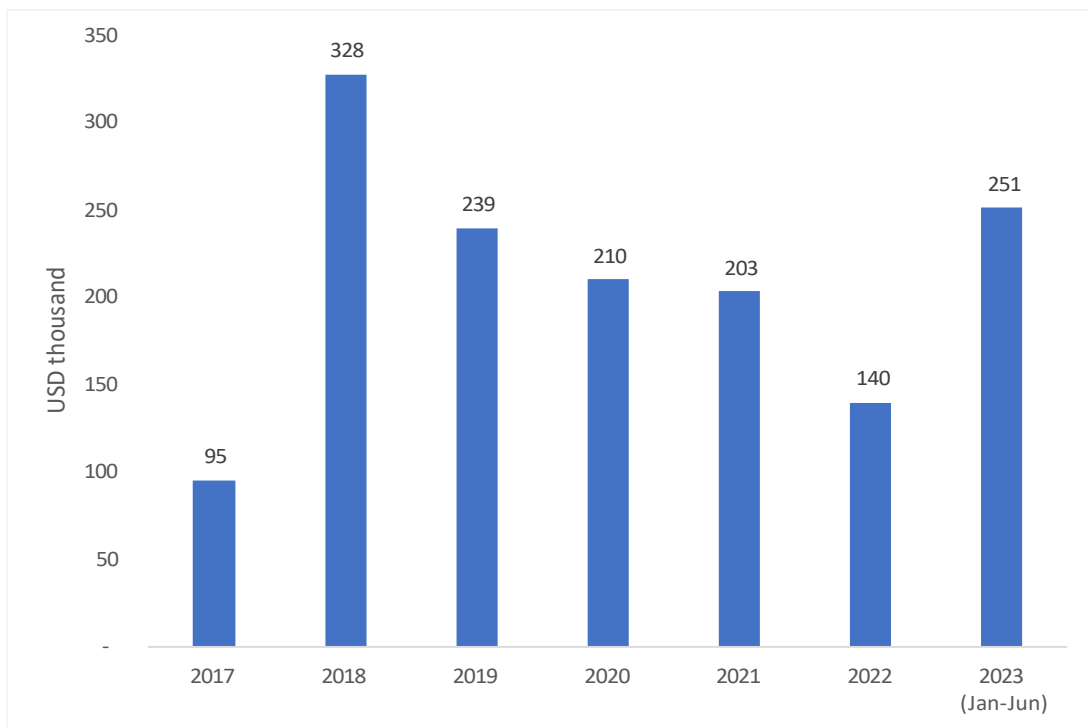


Source: BCB

The average value of transactions has remained above USD100 thousand since 2018, as shown in Figure 3¹⁰.

¹⁰ The decline in 2022 is due to outlying operations referred to in footnote 9.

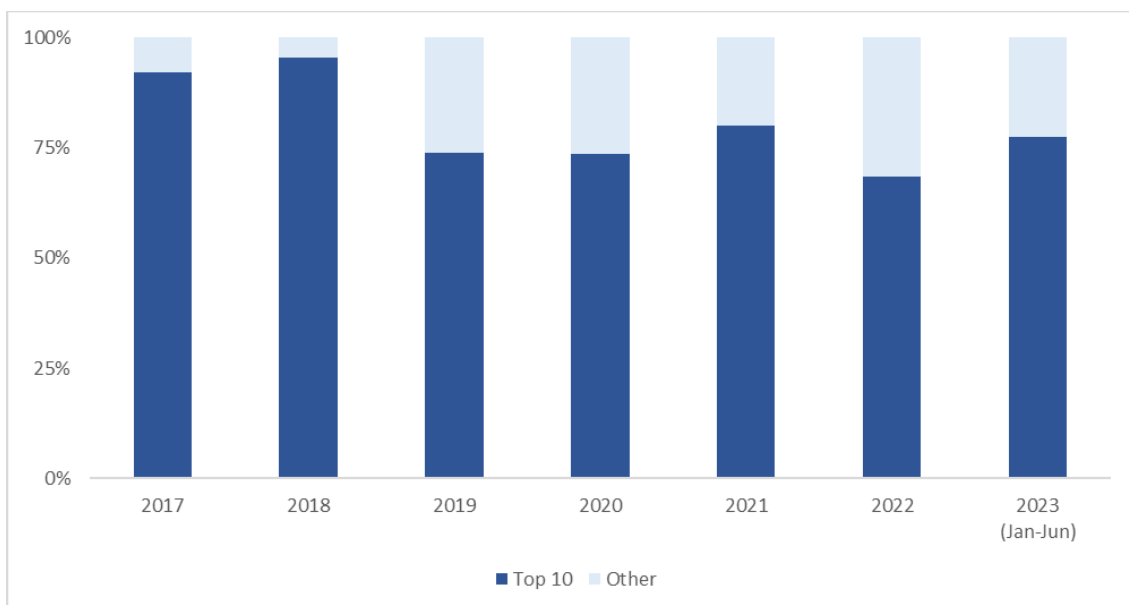
Figure 3 – Foreign exchange related to CAWLM –average value of transactions



Source: BCB

Brazil's international CAWLM trade is concentrated. The top 10 exchanges, as shown in Figure 4, conducted roughly three quarters of all transactions in the last five years. The share in value of transactions carried out by resident individuals with nonresidents, on the other hand, is almost negligible, at around 0.3%.

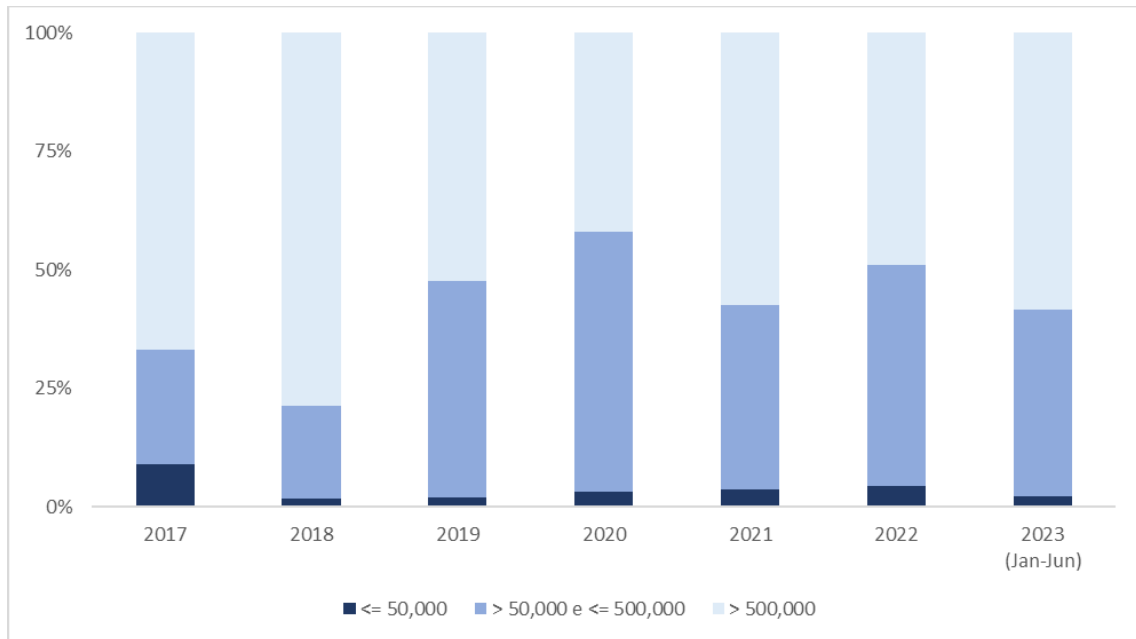
Figure 4 – International CAWLM trade – distribution of value by resident counterpart



Source: BCB

High value transactions are predominant in the FX contracts settled by resident exchanges. Figure 5 shows that since 2018 the value of at least 96% of CAWLM-related FX transactions exceeds USD5 thousand, and around half exceed USD500 thousand.

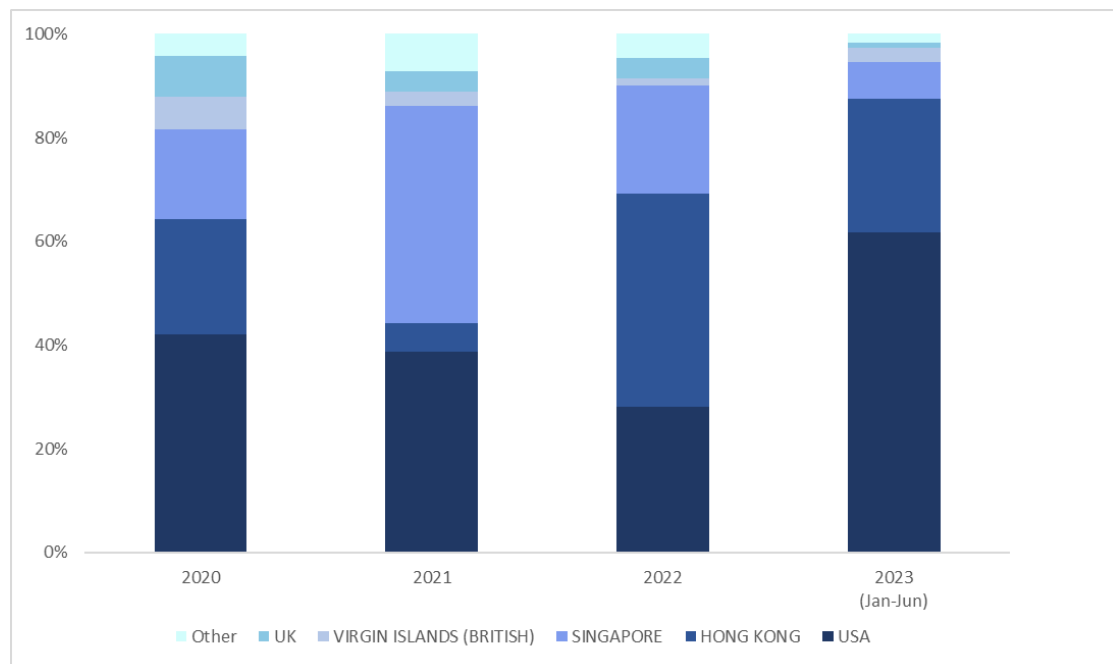
Figure 5 – International CAWLM trade – distribution by value range of transactions settled by exchanges



Source: BCB

The FX contracts provide information on the location of the account receiving the payment for the CALWM imports. As Figure 6 shows, distribution of location is rather volatile, but USA, Hong-Kong, and Singapore stand out as major locations.

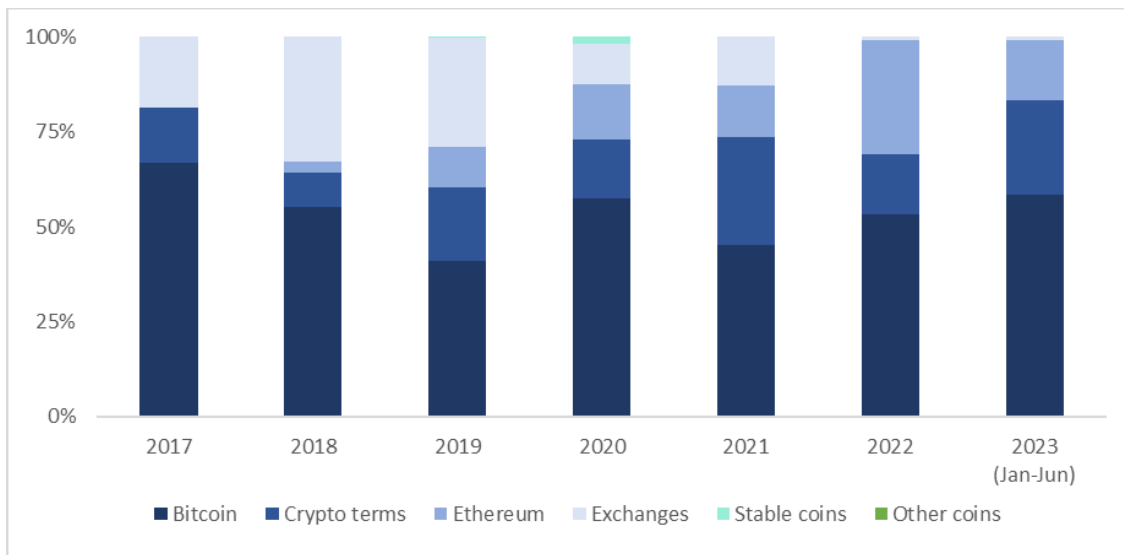
Figure 6 – CALWM imports by country of accounts of counterparts



Source: BCB

Figure 7 presents the breakdown by type of crypto assets¹¹. Bitcoin is the most traded crypto asset, with Ethereum showing growth recently. Transactions with stable coins (which are treated as financial assets but nonetheless appear under the same ITRS code) are of very low value, according to the information provided by exchanges that filled out the free text field.

Figure 7 – Common expressions in the free text field – crypto asset-related transactions



Source: BCB

Figure 8 shows the monthly CAWLM imports and exports statistics¹² published by the BCB. The data are currently published in the trade balance reconciliation table.

Figure 8 - Trade balance of goods: reconciliation between foreign trade statistics and balance of payments

	USD million	
	2022	2023 Jan-Jun
Exports of goods - merchandise trade statistics	334 136	165 283
Adjustments for the balance of payments	6 192	3 097
(-) Goods sent abroad for processing /returning from abroad after processing without change of ownership	- 455	- 246
(+) Goods which changed ownership from resident to nonresident without crossing the border	1 422	1 683
(+) Cryptoassets - change of ownership from resident to nonresident	127	121
(+) Small value exports via international orders and transactions carried out by a payment facilitator	5 012	1 481
(+/-) Exports of goods under merchandising	87	58
Exports of goods - balance of payments	340 328	168 380
Imports of goods - merchandise trade statistics	272 611	120 618
Adjustments for the balance of payments	23 564	10 368
(-) Goods received from abroad for processing / returning from abroad after processing without change of owners	- 494	- 218
(+) Goods which changed ownership from nonresident to resident without crossing the border	3 422	530
(+) Cryptoassets - change of ownership from nonresident to resident	7 495	4 977
(+) Small value imports via international orders and transactions carried out by a payment facilitator	13 140	5 078
Imports of goods - balance of payments	296 175	130 986

Source: BCB

IV – Data collection and compilation framework

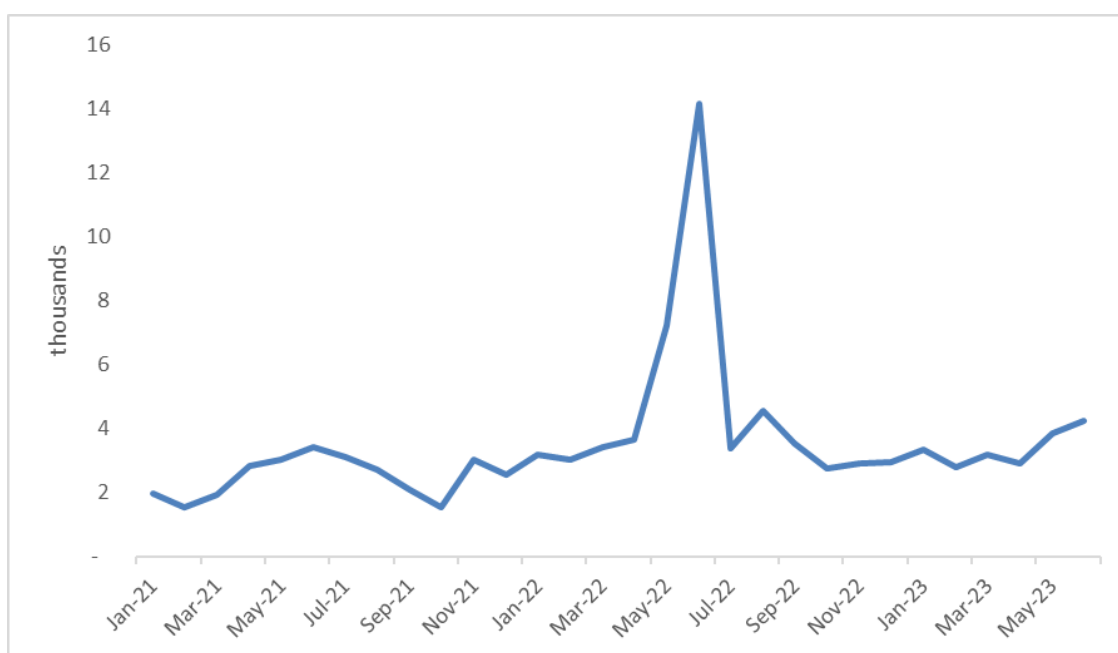
¹¹ Approximately 60% of crypto asset-related FX contracts contain the description of the asset being traded.

¹² Data are available from 2017, although the table shows data starting from 2022.

As mentioned in Section III, crypto asset-related transactions are sourced from the ITRS, which is comprised of data from FX contracts. Among the information required in the FX contracts are the transaction codes, names of counterparts, and descriptive fields. There are no reporting thresholds for FX contracts, which are registered on a transaction-by-transaction basis. Such granularity enables a series of data quality assessments.

Figure 9 presents the number of transactions settled monthly.¹³ The peak in June 2022 is due to outlying operations of a new exchange entering the market, settling a much larger number of transactions than the market average. From the second half of the year onwards, the number of transactions falls, in line with other market participants.^{14 15}

Figure 9 – CAWLM foreign exchange transactions – monthly volume



Source: BCB

V – Assessment of Other Official Data

Since 2019, resident crypto asset exchanges and individuals are required by law to report to Secretaria Especial da Receita Federal do Brasil (RFB), the Brazilian tax revenue authority, crypto asset trade transactions. The requirements include acquisition and disposal of crypto assets, both CAWLM and non-CAWLM, between two resident (domestic market) counterparts and between residents and nonresidents (international market) counterparts. The RFB publishes¹⁶ the sum of purchases and sales of crypto assets traded both domestically and abroad. The database of reported transactions includes 65 crypto assets in the series starting in 2019. Figure

¹³ The information is available for the compilers on daily basis.

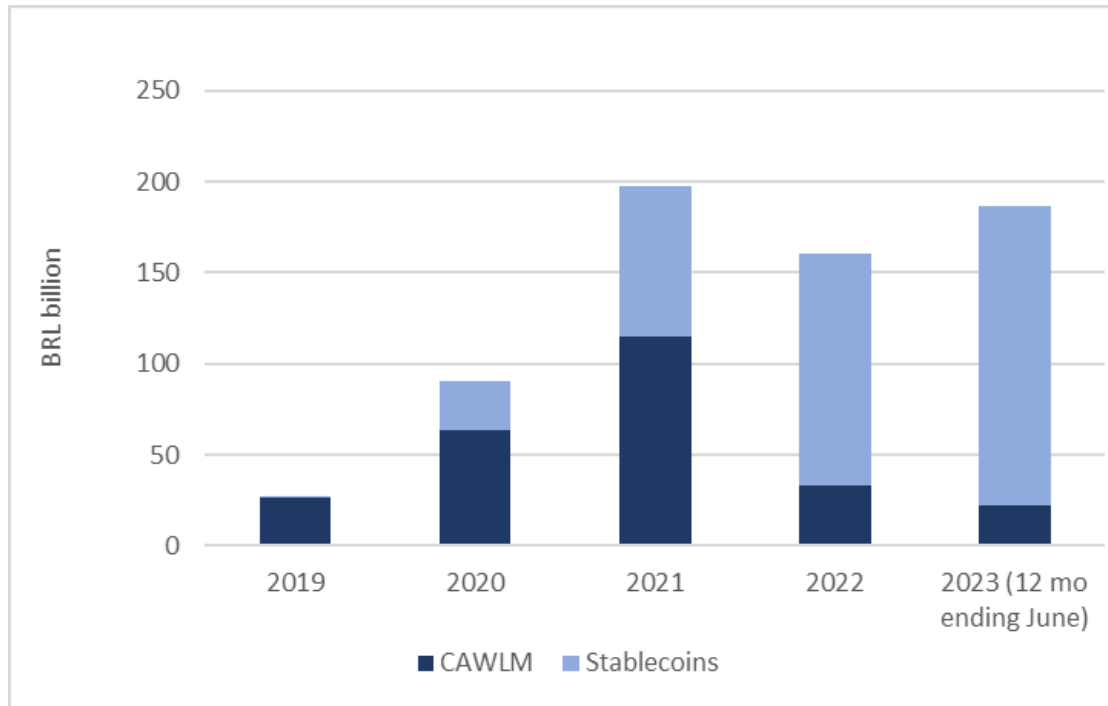
¹⁴ One hypothesis is that each FX contract settled by a resident exchange can involve several correspondent domestic CAWLM transactions with other residents. The entering exchange may have started assigning one FX contract to one resident client transaction, incurring in more transaction costs in the beginning. And after a while, this procedure was modified.

¹⁵ For this particular exchange, replacing second quarter data for its average monthly number of transactions in the second half of 2022, the total monthly average for the year (see Figure 1) would fall from 4.6 thousand to 3.5 thousand, thus eliminating the outlier.

¹⁶ <https://www.gov.br/receitafederal/pt-br/assuntos/orientacao-tributaria/declaracoes-e-demonstrativos/criptoativos> < “Dados abertos (Planilha eletrônica)” >

10 shows the reported data, grouped by CAWLMS and stablecoins. CAWLM transactions peaked in 2021 and are currently below 2019 levels (more clearly so if measured in USD). Stablecoin transactions, on the other hand, have been on a continued upward trend.

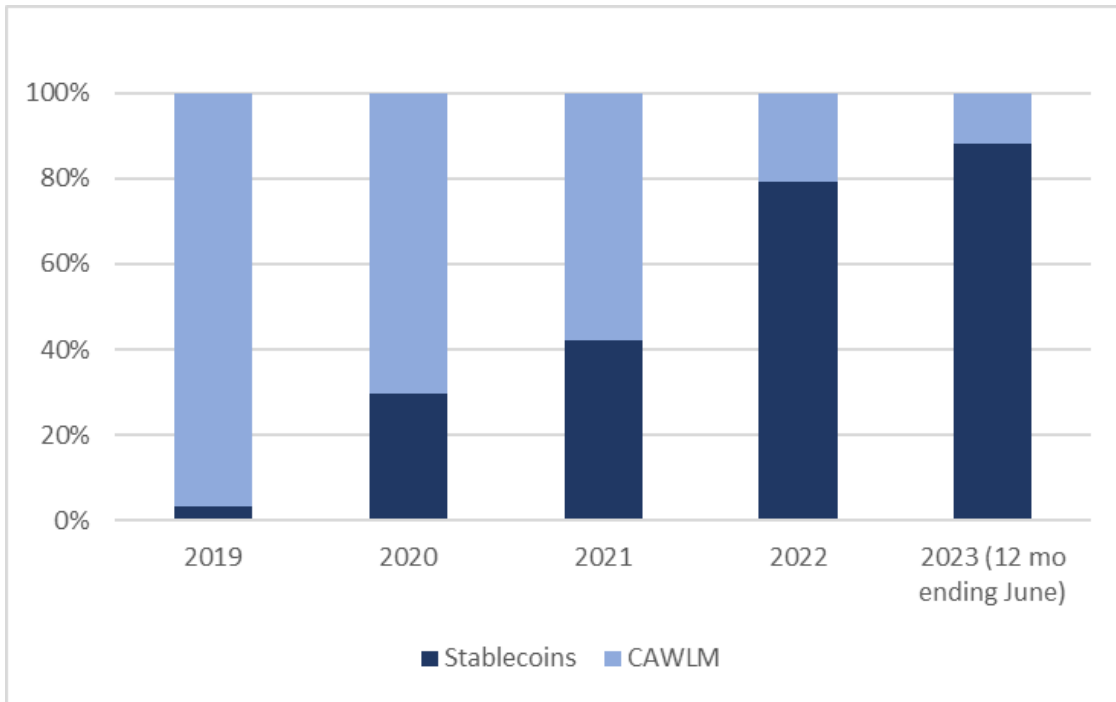
Figure 10 – Annual sum of purchases and sales of crypto assets – RFB data



Source: RFB. Elaborated by BCB

Figure 11 shows the total purchases and sales of crypto assets by type. Stablecoin transactions overtook CAWLM transactions in 2022 and currently represent roughly 90% of the value of transactions.

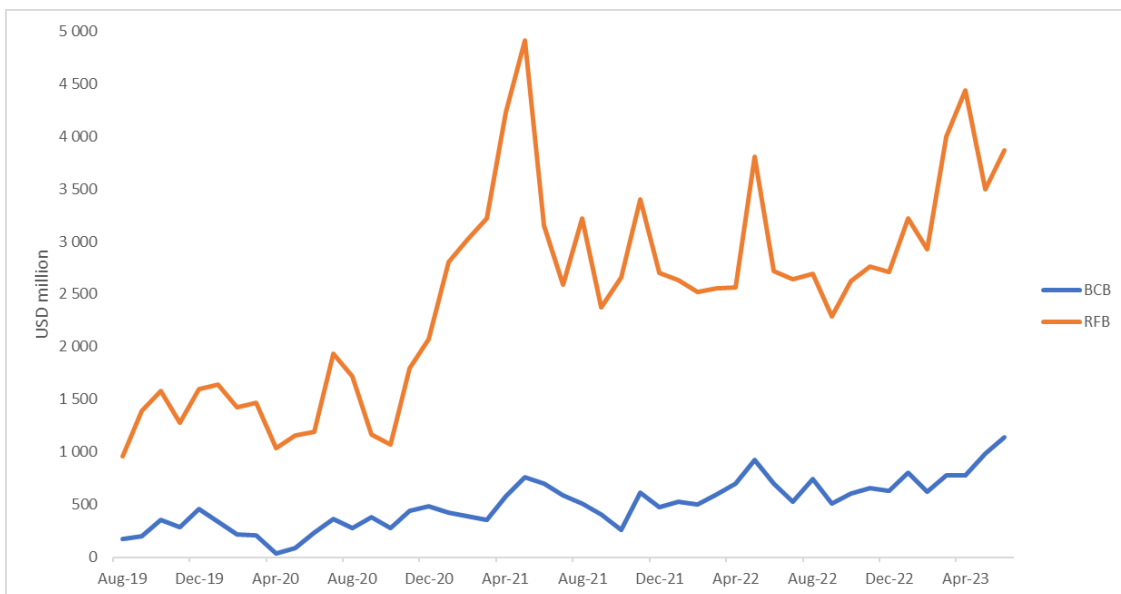
Figure 11 – Annual purchases and sales of crypto assets by type



Source: RFB. Elaborated by BCB

Figure 12 illustrates the significant difference in magnitudes between transactions reported to the RFB and transactions included in the balance of payments. Currently, not all the factors that would explain the difference have been clearly identified. Among the identified factors are the coverage in RFB data of stablecoins (which would not, by definition, be classified under exports and imports, as CAWLMs are); and CAWLM trade between resident counterparts (possibly double counted since both buyer and seller must report every transaction to the RFB), neither of which are covered in Brazil's balance of payments. The latter should not be included in the balance of payments.

Figure 12– Sum of monthly purchases and sales of crypto assets – RFB x BCB data



Sources: RFB and BCB. Elaborated by BCB

It is not clear, though, whether the stablecoin transactions reported to RFB should be covered in the balance of payments, as it is unclear whether they are transactions between residents and nonresidents. If they are transactions between residents and nonresidents, which is most likely, they are not currently being covered in the balance of payments because they are not being settled through the domestic FX system and therefore not being registered in the ITRS¹⁷.

The complementary data source for the compilation of crypto asset transactions is the Survey of Brazilian Capital Abroad (CBE), by means of which positions in assets of residents vis-à-vis nonresidents are reported to the BCB. Crypto asset position data reported in the CBE, currently undergoing a data quality and validation process for use in the balance of payments, may help clarify whether the difference between RFB and BCB data are due to the difference in the scope of data or if there are currently omissions in the balance of payments.

VI - Ongoing Challenges

The ITRS is a data source covering only transactions FX contract settlements. Therefore, transactions settled directly through accounts abroad or by other means are currently not covered in the balance of payments. Also, although the level of crypto imports is somewhat as what would be expected, the low level of exports warrants further assessment.

Separating CAWLM from non-CAWLM trade, especially with the expected increase of the latter, is likely a forthcoming challenge. Notwithstanding the expressions in the free text field of some FX transactions, this information may not be enough to accurately treat a relevant portion of transactions. Not all transactions are accurately described providing unmistakable information.

There have been discussions recently on plans for the compilation of crypto asset positions data, which could include, in principle, both non-CAWLM (financial) and CAWLM. Collecting and compiling CAWLM position data may be challenging in terms of external sector statistics as it would be the first initiative regarding the collection of position data (in the IIP, naturally) of a current account component. This would be particularly challenging in countries where the mandates for the collection of position data cover only financial assets and liabilities.

Data collection will depend largely on the scope of the crypto asset regulatory framework, especially the extent to which it will enable data collection for statistical purposes. In July 2023, BCB was designated to oversee and regulate services related to crypto assets in Brazil (Law [14.478 of December 2022](#) and [Decree 11.563 of June 2023](#)). Currently, the BCB is preparing public consultations, and, after that, it should publish the rules that will regulate the matter in Brazil.

¹⁷ As mentioned in Section III, the ITRS is currently the sole source for crypto asset transactions in Brazil's balance of payments.