LUMEN ET VIRTUS
ISSN: 2177-2789

AN ANALYSIS OF THE EFFECTIVENESS OF THE TAXATION OF CRYPTO-ASSETS BY THE BRAZILIAN STATE[1]

https://doi.org/10.56238/levv16n47-081

Submitted on: 03/22/2025 **Publication date:** 04/22/2025

Carlos Mário Miranda Farias[2] and Pedro Silva Mendes[3]

ABSTRACT

This article aims to analyze the effectiveness of crypto-asset tax policies, as well as their practical challenges, regulatory gaps and the economic impacts arising from the absence of specific regulation. The present study is of an exploratory qualitative nature, developed based on a bibliographic review, using the CAPES Journal Portal as the main source for the selection of scientific articles relevant to the research, in addition to the analysis of current tax legislation, such as Normative Instruction No. 1,888/2019 and Decree No. 9,580/2018. The study showed that the current regulatory scenario imposes legal uncertainty on investors, increases tax compliance costs and compromises the effectiveness of tax collection. The absence of specific rules for the calculation of gains from digital assets, added to the difficulty of inspection, discourages the development of this market and accentuates the risks of tax evasion.

Keywords: Crypto-assets. Tax Regulation. Taxation. Normative Instruction No. 1,888/2019. Decree No. 9,580/2018.

[1] Article presented to the Bachelor's Degree in Law of the Institute of Higher Education of Southern Maranhão – IESMA/Unisulma.

[2]Student of the Bachelor of Laws course at the Institute of Higher Education of Southern Maranhão – IESMA/Unisulma
E-mail: carllosmariofarias@gmail.com
[3]Professor of Law in the bachelor's degree courses in Law and Administration at UNISULMA/IESMA. Specialist in Public Procedural Law. Post-graduate in Higher Education Teaching. Lawyer
Email: prof.pedrosmendes@gmail.com

INTRODUCTION

The emergence of crypto-assets, especially after the pioneering launch of Bitcoin in 2008, represents a profound transformation in the global financial market, setting a historic milestone not only for technological innovation, but also for challenging economic and regulatory paradigms established decades ago. Initially seen only as technological curiosities, these digital assets have quickly gained significant space on the global economic stage, gaining recognition as legitimate financial investments and tools for business and financial transactions.

In the current scenario, crypto-assets can no longer be ignored by regulatory authorities, especially due to the growing volume of financial operations carried out through these technologies and the increasing participation of institutional investors. However, the Brazilian State still faces major challenges in creating a specific regulation that contemplates the technical, economic, and legal peculiarities of these digital assets. The absence of clear rules on taxation and monitoring of transactions with crypto-assets has generated legal uncertainties and high tax risk, resulting in significant losses in revenue and facilitating illegal practices, such as tax evasion and money laundering.

In this context, the present study seeks to critically analyze the effectiveness of Brazilian tax policies aimed at crypto-assets, identifying the practical challenges, regulatory gaps, economic and technological impacts of these policies. The relevance of this analysis is due to the fact that clear and efficient tax regulation is an indispensable condition not only to ensure fair and effective collection, but also to foster a safe and favorable environment for innovation and sustainable economic development in the crypto-asset sector.

In addition, the research is justified by the urgent need to clarify fundamental aspects related to the taxation of these assets, such as the identification of taxpayers, criteria for calculating taxable gains and effective mechanisms for inspection and monitoring of financial operations. These aspects are essential to provide legal certainty to investors and companies, encourage domestic investments, and prevent capital flight to jurisdictions with more mature and favorable regulatory systems.

In this sense, the study presents as a general objective to analyze the effectiveness of the tax policies currently adopted by the Brazilian State in relation to crypto-assets, specifically highlighting the difficulties of inspection, the impacts on tax collection and the various challenges imposed by the anonymity and decentralization characteristic of these technologies. Specifically, it seeks to critically evaluate the tax legislation currently applied, investigate the real capacity of the national tax system to identify and track financial transactions involving these digital assets, and comparatively examine international

experiences that can serve as a reference for the construction of a more efficient and innovative regulatory model.

As for the methodology adopted, it is a qualitative research of bibliographic character, based on current legislation and academic publications on taxation, regulation, conceptualization and legal treatment of crypto-assets, as well as comparative analysis of successful international experiences. In this way, the study intends to offer solid and concrete subsidies that can contribute to the improvement of tax policies in Brazil, stimulating a more effective tax regulation that is compatible with the contemporary challenges imposed by crypto-assets.

CONCEPT AND CHARACTERISTICS OF CRYPTO-ASSETS

Crypto-assets can be conceptualized as digital representations of value, decentralized and protected by cryptographic technologies, used mainly as a medium of exchange, store of value or unit of account. Unlike fiat currencies, they are not backed by a central authority, such as central banks or governments, and are traded directly between users through *blockchain* technology, which ensures security and transparency to transactions, eliminating the need for traditional financial intermediaries (Castello, 2019, p. 2; Mattos, Abouchedid and Silva, 2020, p. 762).

Bitcoin, created in 2008 by Satoshi Nakamoto, pioneered this new technological and economic paradigm, paving the way for several other digital assets, such as *Ethereum* and *stablecoins*. The latter have their value linked to more stable assets, usually fiat currencies, in order to reduce volatility, a striking feature of crypto-assets. Despite this volatility, the growing popularity of crypto-assets has led companies, financial institutions, and even governments to recognize their economic relevance and the need for specific regulation (Castello, 2019, p. 5-7).

The fundamental technologies that underpin crypto-assets are *blockchain*, *smart contracts*, and the mining process, which, combined with advanced cryptography, provide security, efficiency, and privacy to financial operations. However, despite the technological, economic, and social benefits associated with crypto-assets, there are still numerous regulatory and tax challenges, especially related to the difficulty of tax tracking of decentralized transactions. These challenges require specific regulatory responses by States, including Brazil, in order to ensure legal certainty, economic balance, and greater transparency in the use of these digital assets.

DEFINITION AND CHARACTERISTICS OF CRYPTO-ASSETS

Crypto-assets are digital representations of value that use cryptography to ensure secure transactions, operating on decentralized networks, without the intervention of a central authority, such as banks or governments. These assets are distinguished from fiat currencies by being transacted electronically in an environment where control is distributed among the network users themselves, a fundamental characteristic of crypto-assets (Santos Júnior and Coelho, 2023, p. 1424). Decentralization is, therefore, one of the most striking features, as it prevents a single entity from having control over its issuance or circulation, providing greater financial autonomy for users.

Blockchain technology is the main pillar of crypto-assets. It is a distributed and immutable database, where all transactions are recorded in blocks and validated by a network of independent nodes. Each block contains a set of verified transactions and is linked to the previous one, forming a continuous, tamper-proof chain (Medeiros, Carvalho, and Gomes, 2023, p. 6957). This model ensures transparency and makes fraud difficult, making crypto-assets a reliable alternative for various financial operations. In addition, *blockchain technology* allows transactions to be carried out without the need for intermediaries, reducing costs and increasing the efficiency of financial processes.

Another relevant feature of crypto-assets is the privacy and anonymity of transactions. While all operations are publicly recorded on the blockchain, the identities of those involved are not directly associated with the records, ensuring a certain degree of anonymity. This characteristic makes them an attractive option for those seeking more discretion in their financial operations, but it also raises regulatory concerns, especially when it comes to combating financial crimes, such as money laundering and tax evasion (Andrade, 2017, p. 48). The lack of clear identification mechanisms makes it difficult for tax authorities to act, making crypto-assets a significant challenge for traditional tax systems.

The decentralization and privacy of transactions in crypto-assets generate relevant challenges, especially regarding regulation and market stability. The main concern is the high volatility of these assets, whose value is defined by supply and demand, without control by central institutions. This instability, driven by factors such as speculation and regulatory changes, poses risks, especially for inexperienced investors (Santos Júnior and Coelho, 2023, p. 1426). Thus, despite its attractiveness as an alternative to the traditional financial system, volatility can pose a considerable risk, especially for less experienced investors.

In addition to volatility, the adoption of crypto-assets is also directly related to their usability in the market. Many merchants and financial institutions are still hesitant to accept

cryptocurrencies due to regulatory uncertainty and the risk of sudden devaluation. However, some companies and governments are beginning to explore ways to integrate crypto-assets into the traditional economic system, either through the creation of specific regulations or the development of state-owned digital currencies, such as *Central Bank Digital Currencies* (CBDCs) (Medeiros, Carvalho, and Gomes, 2023, p. 6961). This movement demonstrates the growing relevance of crypto-assets and reinforces the need for a regulatory framework capable of balancing innovation and legal certainty.

The absence of intermediaries allows transactions to be processed directly between the parties, reducing the time required for settlement and eliminating traditional bank fees (Santos Júnior and Coelho, 2023, p. 1427). However, the lack of clear regulation still imposes obstacles, both for governments and users, especially when it comes to taxation and tracking of transactions.

DIFFERENCE BETWEEN CRYPTO-ASSETS AND FIAT CURRENCIES

Crypto-assets differ significantly from traditional fiat currencies. While fiat currencies, such as the Real, are issued by Central Banks and have clear state regulation, crypto-assets are decentralized, do not have issuance regulated by monetary authorities, and operate without traditional financial intermediaries (Castello, 2019, p. 8).

This characteristic implies significant challenges to the tax system, which traditionally relies on centralized financial institutions to track and supervise financial transactions. Thus, the decentralization of crypto-assets makes it difficult to identify the parties involved and increases the complexity in the tax monitoring of these operations.

This fundamental difference generates important practical implications in the tax field. The absence of a central authority responsible for issuing and controlling crypto-assets makes it difficult to track transactions and clearly define tax obligations. In addition, the volatility characteristic of these digital assets creates additional difficulties in defining the tax calculation basis, especially at the time of calculating capital gains, generating uncertainties for taxpayers and tax authorities (Andrade, 2017, p. 57).

These uncertainties can lead to divergent interpretations in the application of tax rules, generating legal uncertainty and discouraging investments, which reinforces the urgent need for specific tax legislation for crypto-assets.

Thus, while fiat currencies have a solid regulatory basis and clear taxation mechanisms, crypto-assets demand urgent adaptations in the tax system. The current absence of specific regulation undermines both legal certainty and effectiveness in tax

collection, revealing the immediate need for regulations adapted to the peculiarities of these digital assets (Medeiros, Carvalho, and Rego, 2023, p. 6956).

Thus, it is evident that, in view of the current state inertia, the creation of specific, clear rules adapted to the characteristics of crypto-assets is essential and indispensable to face tax challenges and to ensure greater tax predictability to the sector.

UNDERLYING TECHNOLOGIES AND THEIR TAX IMPACTS

Crypto-assets operate on blockchain technology, a decentralized system that dispenses with traditional financial intermediaries such as banks or regulatory authorities. This decentralization, despite providing security and transparency to transactions, imposes specific challenges for tax authorities, especially due to the difficulty in tracking financial transactions, making tax inspection complex (Souza, Cardoso and Resgala Júnior, 2023, p. 582).

Another relevant aspect is *smart contracts* , digital programs that automate agreements between the parties involved. Although they bring efficiency and security to transactions, these contracts increase the complexity in the definition of tax obligations, since there are no intermediaries clearly responsible for withholding and collecting taxes, making it difficult to apply traditional tax rules (Castello, 2019, p. 12).

Mining activity, responsible for generating new crypto-assets and validating transactions on the *blockchain*, also poses a significant challenge to taxation. Currently, Brazil does not have a clear tax regulation on this specific activity, raising doubts about how the gains obtained by miners should be taxed, resulting in legal uncertainties for those involved (Santos Júnior and Coelho, 2023, p. 1425).

Finally, cryptography, by ensuring security and privacy to transactions with crypto-assets, creates additional barriers to tax inspection. By making it difficult to identify users and track operations, the risk of tax evasion and illicit practices increases, requiring the State to develop more advanced and specific control and inspection mechanisms (Bernardo and Della Vittoria, 2021, p. 96).

Thus, it is essential that the Brazilian tax system adapts quickly, creating specific regulations capable of overcoming these technical challenges and ensuring efficient tax collection, without compromising technological innovation, the consumer and trading market associated with crypto-assets.

LEGAL AND ECONOMIC CHALLENGES IN TAXING CRYPTO-ASSETS

The growing popularity and use of crypto-assets brings a number of significant challenges to the Brazilian tax system, especially from a legal and economic perspective. From a legal point of view, one of the biggest obstacles faced by the State is the difficulty of clearly classifying the legal nature of crypto-assets in the current Brazilian legislative framework. In the absence of specific legislation on these digital assets, the Federal Revenue Service has analogously applied the provisions provided for traditional financial assets. In this sense, Decree No. 9,580/2018 stands out, which has served as a general parameter in the taxation of gains obtained in the trading of crypto-assets, especially in operations involving capital gains.

Although this decree provides general guidelines for the taxation of income from capital gains, it does not directly address the technical peculiarities of crypto-assets, which results in ambiguities and uncertainties in the practical application of the tax rule (Castello, 2019, p. 8). The use of the analogy with other financial assets, such as foreign currencies or commodities, has been frequent, but not always efficient, since crypto-assets have their own unprecedented characteristics, such as decentralization, anonymity, high volatility, and absence of control by a central institution, making it difficult to accurately adapt the norms to the specific case (Mattos, Abouchedid, and Silva, 2020, p. 767).

From an operational point of view, the absence of traditional intermediaries in transactions involving crypto-assets makes it extremely difficult for tax authorities to monitor and track the operations carried out. One of the main consequences of this lack of clear regulation is the potential increase in tax evasion, as the authorities face great difficulties in identifying taxpayers and accurately determining taxable amounts (Medeiros, Carvalho and Rego, 2023, p. 6960). The Brazilian tax system, historically based on easily identifiable operations intermediated by financial institutions, faces significant challenges in adapting to this new decentralized model.

Economically, another important factor is the volatility of crypto-assets, which directly affects the calculation of the taxable base and the predictability of tax collection. Assets such as Bitcoin or Ethereum have shown frequent significant price swings, making it complex to accurately determine the fair value for taxation at specific times. As a result, taxpayers face difficulties in correctly complying with their tax obligations, given the instability of asset values in short intervals of time, while the State faces uncertainties related to its effective collection (Mattos, Abouchedid and Silva, 2020, p. 763).

OVERVIEW OF CRYPTO-ASSET TAXATION IN BRAZIL

In the Brazilian context, despite the absence of a broad and specific regulation on crypto-assets, some regulations already deal directly with this topic. The main current regulatory framework is Normative Instruction No. 1,888/2019 of the Federal Revenue of Brazil (RFB), which establishes specific rules for the registration and declaration of transactions involving cryptocurrencies and crypto-assets in general. This instruction determines that individuals and legal entities residing in Brazil must report monthly to the Federal Revenue Service all operations with crypto-assets, as long as they exceed R$30,000.00 (thirty thousand reais) monthly. This obligation aims to allow the supervisory body greater control over transactions and gains arising from these digital assets, preventing practices such as tax evasion, money laundering, and other illicit operations (Castello, 2019, p. 9).

A crucial point of this normative instruction is that it assigns to national exchanges a fundamental role in complying with accessory obligations, requiring these platforms to report to the tax authorities all operations carried out by Brazilian users. In addition, the rule also determines that individuals or legal entities that trade crypto-assets through exchanges based abroad or directly (*peer-to-peer*) must voluntarily report their operations to the Federal Revenue Service. This determination aims to prevent operations carried out outside national platforms from escaping tax control, thus seeking to reduce the incidence of tax evasion and money laundering practices in the country (Mattos, Abouchedid, and Silva, 2020, p. 767).

IN No. 1,888/2019, however, also presents practical challenges for taxpayers and tax authorities. The complexity of transactions carried out through international exchanges or directly between users, without intermediaries, makes it very difficult for the Federal Revenue Service to effectively supervise, which depends on the voluntary cooperation of the taxpayers themselves in providing the required information. In addition, users who transact directly on exchanges located abroad face additional difficulties, as such platforms have no direct obligation to report data to the Brazilian Federal Revenue Service. This situation highlights a significant limitation of the regulation, highlighting the need for more effective international cooperation for the supervision of these operations (Castello, 2019, p. 10).

Another relevant provision for the tax classification of crypto-assets is Decree No. 9,580/2018, known as the Income Tax Regulation (RIR/2018). Although it does not expressly mention crypto-assets, the Decree regulates the incidence of capital gains tax, which has been applied by analogy to crypto-asset transactions in Brazil. As a result, any

gain obtained from the sale or exchange of crypto-assets, whether for fiat currency or other goods, is subject to the incidence of Income Tax, according to the progressive rates provided for capital gains (Castello, 2019, p. 10).

In this way, specific tax obligations arise for individuals and companies that transact crypto-assets. Individuals must declare to the Federal Revenue Service the gains obtained in cryptocurrency operations when they exceed the monthly exemption limit, currently set at R$35,000.00 (thirty-five thousand reais) per month. Legal entities, on the other hand, have the duty to provide monthly information to the Federal Revenue Service, detailing their operations involving crypto-assets, including indicating the exchanges used, volumes transacted, and counterparties involved (Castello, 2019, p. 10). Such requirements seek to provide greater transparency to the market, although they may generate operational difficulties for taxpayers due to the particularities of transactions with digital assets.

Finally, although Decree No. 9,580/2018 does not directly mention crypto-assets, it has been used in an analogous way as a basis to support the collection of taxes on gains arising from the trading of these cryptocurrencies. This practice demonstrates the attempt of the Brazilian tax authorities to fill regulatory gaps in the absence of specific regulation, but brings with it significant problems of legal certainty, given the practical difficulty in applying traditional rules to the particularities of operations with crypto-assets (Mattos, Abouchedid, and Silva, 2020, p. 763).

IMPACT OF TAX POLICIES ON THE CRYPTO-ASSET MARKET

Taxation exerts a decisive influence on the economic behavior of agents involved in the financial market, especially in innovative markets such as crypto-assets. Properly structured tax policies have the potential to generate legal certainty, encouraging investments and stimulating the sustainable development of the sector. On the other hand, excessively complex or inappropriate taxation can produce the opposite effect, discouraging investors, raising operating costs, and driving companies away to more favorable jurisdictions, especially when it comes to digital assets that easily transcend borders (Medeiros, Carvalho, and Rego, 2023, p. 6966).

In the specific case of Brazil, although Normative Instruction No. 1,888/2019 represents an important advance in the supervision of operations involving crypto-assets, by requiring detailed information on all transactions carried out by investors and companies, its practical application is problematic. Especially for small investors and startups that use crypto-assets, complying with this tax obligation is quite onerous, since many operations

are carried out on decentralized platforms or international exchanges that do not easily provide the information required by the Federal Revenue Service.

In addition, the technical complexity of obtaining accurate data, such as exact values, dates of operations, and identification of counterparties, ends up being an arduous and often unfeasible task, especially in *peer-to-peer* operations, which characterize a significant portion of the market (Medeiros, Carvalho, and Rego, 2023, p. 6963-6964).

This difficulty in obtaining and organizing tax information generates considerable additional costs for investors and companies, which need to invest in specialized systems or accounting services to properly comply with these accessory obligations. Such costs can become prohibitive, especially for start-ups or small individual investors, directly affecting the attractiveness and competitiveness of the Brazilian crypto-asset market.

Consequently, the direct consequence is that investors end up being discouraged from declaring their operations in full, increasing the risk of tax evasion or even choosing to migrate their activities to jurisdictions with less complex and clearer regulations. Thus, the current regulation, although it represents a positive attempt at tax control, may, paradoxically, be discouraging investments and harming the development of the sector in the country (Bernardo and Della Vittoria, 2021, p. 96-97).

In addition, another crucial point is the analogous application of Decree No. 9,580/2018 to tax gains obtained from crypto-asset operations. Because it was originally created to regulate traditional assets, such as stocks, real estate, or fiat currencies, this decree does not reflect the essential particularities of digital assets, especially with regard to their intense volatility and the unique dynamics of the crypto-asset market.

However, the difficulty in accurately determining the taxable amount in transactions involving multiple transactions, frequent conversions between crypto-assets and fiat currencies, and sudden variations in prices generates constant legal uncertainty for investors and companies that need to correctly calculate taxable gains (Castello, 2019, p. 10).

In practice, this situation causes significant impacts for investors who face difficulties in establishing efficient tax planning, increasing the risk of tax litigation with the IRS. Without specific and clear criteria defined by law for the taxation of these gains, investors often need to resort to consulting experts or specialized accounting services, again increasing operating costs and reducing economic predictability, essential factors in the decision on whether or not to allocate capital in the Brazilian crypto-asset market.

Thus, the direct consequence of this regulatory insecurity is the country's loss of competitiveness compared to other international markets that already have more modern,

clearer tax regulations adapted to the particularities of crypto-assets (Santos Júnior and Coelho, 2023, p. 1425-1426).

In addition, in the absence of adequate and clear taxation, investors may be encouraged to resort to tax evasion strategies, often migrating their operations to international markets with more transparent and favorable regulations. This movement implies not only a direct loss of revenue for the State, but also the weakening of the national crypto-asset market, with long-term negative consequences for technological and economic innovation in the country (Bernardo and Della Vittoria, 2021, p. 96-97).

On the other hand, international experiences show that clear tax regulation, well adapted to the peculiarities of digital assets and proportional to the ability of investors to contribute, can generate significant positive effects. Countries that have adopted adequate taxation of crypto-assets have been able to increase tax collection without harming technological innovation, attracting productive investments and strengthening the domestic market. In this way, the creation of a favorable and predictable tax environment becomes a key element for Brazil to become competitive in this globalized market, contributing positively to the economy and to strengthening the national tax system (Santos Júnior and Coelho, 2023, p. 1426).

Therefore, the fundamental challenge for the Brazilian State is to balance the need for effective tax inspection with fair, balanced and equitable regulation for taxpayers. This balance, if achieved, could ensure the sustainable growth of the crypto-asset sector, generating economic gains for the country without renouncing the adequate protection of tax collection.

INTERNATIONAL EXPERIENCES IN THE TAXATION OF CRYPTO-ASSETS

Faced with the rapid expansion and complexity of the crypto-asset market, several countries have adopted specific tax strategies to deal with this global technological and economic phenomenon. Countries such as the United States, Japan, and members of the European Union have been presenting more mature and sophisticated regulations to deal with challenges such as anonymity, decentralization, and volatility, offering interesting models for analysis and eventual adaptation by the Brazilian system.

In the United States, for example, the Internal Revenue Service (IRS) has classified crypto-assets as property since 2014, subjecting them to the same taxation rules applied to other financial assets. In this way, any gain obtained from the sale or exchange of these assets is taxed as a capital gain. In addition, exchanges are required to report transactions above certain amounts to the tax authorities, ensuring greater monitoring of transactions

and reducing the spaces for tax evasion and illicit activities (Castello, 2019, p. 12). This regulatory clarity has translated into greater voluntary adherence by taxpayers and increasing efficiency in tax collection.

In the European Union, the tax treatment given to crypto-assets is relatively similar to that in the United States, with specific adaptations in each member country. In 2015, the Court of Justice of the European Union ruled, in the judgment of the case *Skatteverket* v. *David Hedqvist* (C-264/14), for the exemption from Value Added Tax (VAT) on transactions involving Bitcoin and other cryptocurrencies, equating them, in this regard, to traditional fiat currencies (Castello, 2019, p. 12). This decision has facilitated the day-to-day use of cryptocurrencies by reducing operating costs, ensuring greater acceptance and circulation of these cryptocurrencies as an everyday means of payment in Europe.

Japan, on the other hand, has adopted a pioneering and proactive stance in the regulation of crypto-assets. In 2017, the Japanese government officially recognized Bitcoin and other crypto-assets as valid means of payment, attributing them specific discharging power, although not fully comparable to fiat currencies (Castello, 2019, p. 6). This model has provided significant expansion in the Japanese cryptocurrency market, with robust and secure regulation that has managed to attract new investors and businesses related to blockchain technology, without significantly compromising legal and tax security in the country.

METHODOLOGY

The methodology of the present study is characterized as a qualitative research of exploratory character, with a bibliographic approach. The exploratory research was chosen because it provides greater familiarity and depth in relation to the topic addressed, making it possible to identify and analyze the challenges and implications of taxation of crypto-assets in Brazil.

To support the study, a detailed review of the specialized academic literature was carried out, using the CAPES Journal Portal as the main search tool, focusing on recent scientific articles published between 2017 and 2023, with selection criteria based on thematic relevance, timeliness, and academic quality of the publications.

In addition, the main Brazilian tax laws and regulations applicable to crypto-assets were analyzed, especially Normative Instruction No. 1,888/2019 of the Federal Revenue Service and Decree No. 9,580/2018, in order to identify specific gaps and challenges related to the taxation of this new type of digital asset.

The information collected was analyzed through a critical and comparative approach, allowing to highlight the main difficulties, economic and regulatory impacts, as well as to carry out a comparative analysis with international experiences in countries that have more mature tax regulations, such as the United States, Japan and members of the European Union.

This method proved to be the most appropriate to the proposed objective, allowing a deep and well-founded understanding of the complex aspects related to the taxation of crypto-assets, and offering relevant subsidies for future discussions and improvement of the Brazilian tax regulation.

CONCLUSION

Since the emergence of Bitcoin in 2008, crypto-assets have revolutionized the global financial market, representing a true milestone in the digital economy and in the way financial transactions are conducted. Crypto-assets have been challenging traditional economic paradigms and imposing new challenges to state taxation and regulation, becoming an essential agenda for contemporary tax systems.

In view of this fact, the present study sought to critically analyze the effectiveness of crypto-asset taxation policies by the Brazilian State, exploring the challenges, opportunities and impacts of these policies in the current economic and technological context. Throughout the analysis, it was clearly realized that, although the topic of cryptocurrencies is in increasing economic relevance, the absence of specific and adequate regulation still constitutes a significant obstacle for both taxpayers and tax authorities.

Among the main challenges identified, the inadequacy of current rules stands out, such as Normative Instruction No. 1,888/2019 and Decree No. 9,580/2018, whose analogous application to transactions with crypto-assets generates numerous practical and legal difficulties. The complexity of the ancillary obligations imposed by the Federal Revenue Service has significantly increased the costs of tax compliance, especially for small investors and start-up companies, thus discouraging new investments. In addition, the absence of specific criteria to deal with the high volatility of cryptocurrencies aggravates legal uncertainty, undermining the economic predictability necessary for safe investments.

From an international comparative perspective, it was observed that countries such as the United States, Japan and members of the European Union have advanced in the creation of clear and specific regulatory frameworks, providing greater legal certainty and promoting the sustainable growth of the crypto-asset market. International experience shows that adequate and well-structured taxation is essential to stimulate investments,

ensure compliance with tax obligations and effectively combat practices such as tax evasion and money laundering.

In view of the issues discussed in this study, it is evident that Brazil urgently needs a legislative evolution that considers the technical and economic peculiarities of crypto-assets. It is suggested as a path for institutional improvement the creation of a specific, simplified and proportional tax legislation to the unique characteristics of digital assets. Such legislation should prioritize regulatory clarity and the balance between strict fiscal control and stimulation of economic innovation, possibly including specific guidelines for tax treatment of mining operations, smart contracts, and peer-to-peer transactions.

However, it is recognized that the present research has clear limitations, especially due to the current absence of specific regulation on crypto-assets in Brazil, a scenario that hinders a more concrete and comprehensive assessment of the impacts of existing taxation. Moreover, the rapid and almost unpredictable technological evolution of the crypto-asset market indicates that any conclusions are inevitably provisional and subject to constant review.

Finally, it is recommended that future academic works explore lines of research related to the use of artificial intelligence as a tool to improve the effectiveness of tax inspection in crypto-asset operations. Another relevant suggestion would be to investigate how the performance of the Federal Supreme Court can influence the development of the Brazilian regulatory framework, resolving digital tax conflicts and helping to establish a clear, predictable regulatory environment aligned with the current needs of the market

REFERENCES

1. Andrade, M. D. (2017). Tratamento jurídico das criptomoedas: A dinâmica dos bitcoins e o crime de lavagem de dinheiro. Revista Brasileira de Políticas Públicas, 7(3), 45–59. https://doi.org/10.5102/rbpp.v7i3.4897

2. Bernardo, A. R., & Della Vittoria, A. (2021). A carência de regulamentação das criptomoedas e seus reflexos na recuperação de tributos. Revista Direito e Sociedade, 15(2), 91–110. https://doi.org/10.58766/rpgbcb.v15i2.1138

3. Brasil. (2018). Decreto nº 9.580, de 22 de novembro de 2018. Regulamenta a tributação, fiscalização, arrecadação e administração do Imposto sobre a Renda e Proventos de Qualquer Natureza. Diário Oficial da União. https://www.planalto.gov.br/ccivil_03/_ato2015-2018/2018/decreto/D9580.htm

4. Brasil. Receita Federal do Brasil. (2019). Instrução Normativa nº 1.888, de 3 de maio de 2019. Dispõe sobre a obrigatoriedade de prestação de informações relativas às operações realizadas com criptoativos. Diário Oficial da União. https://www.in.gov.br/materia/-/asset_publisher/Kujrw0TZC2Mb/content/id/76333779

5. Castello, M. G. (2019). Bitcoin é moeda? Classificação das criptomoedas para o direito tributário. Revista Direito GV, 15(3), 1–20. https://doi.org/10.1590/2317-6172201931

6. Follador, G. B. (2022). Criptomoedas e competência tributária. Revista Brasileira de Direito Digital, 12(1), 80–105. https://doi.org/10.5102/rbpp.v7i3.4925

7. Mattos, O. B., Abouchedid, S., & Silva, L. A. (2020). As criptomoedas e os novos desafios ao sistema monetário: Uma abordagem pós-keynesiana. Economia e Sociedade, 29(3), 761–778. https://doi.org/10.1590/1982-3533.2020v29n3art04

8. Medeiros, G. D. C. C., Carvalho, T. P., & Rego, I. J. (2023). Tributação de criptomoedas no Brasil: Análise à luz da reforma tributária. Revista Ibero-Americana de Humanidades, Ciências e Educação, 9(10), 6955–6971. https://doi.org/10.51891/rease.v9i10.11996

9. Nakamoto, S. (2008). Bitcoin: A peer-to-peer electronic cash system. https://bitcoin.org/bitcoin.pdf

10. Santos Júnior, A., & Coelho, L. A. (2023). A tributação das criptomoedas à luz da legislação vigente. Revista Ibero-Americana de Humanidades, Ciências e Educação, 9(5), 1423–1437. https://doi.org/10.51891/rease.v9i5.9878

11. Souza, A. F. V., Cardoso, J. C. D., & Resgala Júnior, R. M. (2023). Tributação de criptomoedas: Incidência do imposto de renda. Revista Ibero-Americana de Humanidades, Ciências e Educação, 9(10), 578–590. https://doi.org/10.51891/rease.v9i10.11617

12. Trevisanuto, T. M. C., & Moura, C. V. (2022). Regulamentação e tributação de criptoativos. Revista Jurídica das Faculdades Integradas de Bauru, 13, 209–222. https://doi.org/10.59237/jurisfib.v13i13.620

13. União Europeia. Tribunal de Justiça da União Europeia. (2015). Acórdão da Quinta Secção no Processo C-264/14 - Hedqvist: Skatteverket contra David Hedqvist. https://curia.europa.eu/juris/document/document.jsf?docid=170305&doclang=PT