# CRYPTO-ASSETS: ECONOMIC NATURE, RISKS AND REGULATION

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**Abstract:** ***This study analyzes the characteristics, economic nature, and regulatory challenges of crypto-assets. While crypto-assets present numerous opportunities, they also carry significant risks, including price volatility, financial and systemic risks, legal uncertainty, money laundering, and terrorist financing. Divergent regulatory approaches among countries have resulted in legal arbitrage, complicating global supervision. The study emphasizes the need for common regulatory principles focused on issuers, exchanges, and custodial wallet providers to ensure transparency and financial safety. Finally, it proposes key regulatory principles to balance technological innovation with financial stability and offers future research directions on the impact of policies on the crypto-asset market.***

• Keywords: *crypto-assets, distributed ledger technology, regulatory arbitrage.*

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## 1. Introduction

Over the past decade, the rapid development of information technology and digital finance has given rise to a new type of asset - crypto-assets. These assets are built on distributed ledger technology (DLT), with blockchain being the most prominent application. This technology enables decentralized recording, storage, and transmission of transaction data without the involvement of traditional financial intermediaries such as banks or securities firms.

Initially, crypto-assets mainly emerged in the form of cryptocurrencies. However, as technology and market demand evolved, a wide range of other crypto-assets have been developed, including stablecoins, utility tokens, security tokens, and various decentralized finance (DeFi) products. This expansion has transformed crypto-assets into an integral part of the global financial system. Large corporations such as Tesla, Square, and MicroStrategy have invested in Bitcoin, while traditional banks like JPMorgan and Goldman Sachs have begun offering crypto-asset-related services. However, alongside this rapid growth, crypto-assets also introduce substantial risks to the financial system, including price volatility, financial and systemic risks, legal and fraud risks, as well as risks related to money laundering and terrorist financing. These risks present urgent challenges for financial regulators to develop appropriate regulatory policies to protect investors and maintain global financial stability.

Currently, there is no universally accepted definition of crypto-assets among financial institutions and countries. Classification criteria for crypto-assets vary significantly, and there is no consensus on how to categorize cryptocurrencies, stablecoins, utility tokens, and security tokens. Regulatory policies for crypto-assets remain fragmented and lack international coordination, creating regulatory arbitrage - where companies relocate operations to jurisdictions with looser regulations. Therefore, this study plays an important role in clarifying the economic characteristics of crypto-assets, identifying key regulatory challenges, and evaluating existing policy approaches in order to provide relevant policy recommendations.

In summary, the research context demonstrates that crypto-assets have become a significant component of the global financial market, yet still pose various economic and legal challenges. As international organizations and national governments seek appropriate regulatory approaches, this study aims to offer a comprehensive and academic perspective on crypto-assets, thereby supporting regulators in making more effective policy decisions.

## 2. Characteristics and Economic Nature of Crypto-Assets

Although there are many differing definitions of crypto-assets provided by international organizations and national authorities, four core characteristics have gained broad consensus. The fundamental features of crypto-assets include: (1) being a digital representation of value or rights; (2) utilizing distributed ledger technology, cryptographic technology, or similar

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technologies; (3) being issued by the private sector; and (4) being stored, traded, and transferred electronically.

Based on these key characteristics, the study by Kochergin (2022) clarifies the economic nature of crypto-assets. From an economic perspective, crypto-assets can be divided into two main categories: virtual currencies and digital tokens.

Cryptocurrencies represent the first generation of crypto-assets, emerging during the early stages of market development. Cryptocurrencies are a decentralized form of virtual currencies, not associated with any specific obligation and lacking a clearly identifiable issuer. Most cryptocurrency systems operate without a centralized management mechanism. The value of cryptocurrencies is determined entirely by market supply and demand, reflecting the belief that they can be accepted for the exchange of goods, services, or conversion into fiat currencies.

Cryptocurrencies use a direct and intermediary-free mechanism for value exchange. Instead of relying on intermediaries such as banks, transactions are secured by consensus algorithms, which verify the authenticity of transactions across the entire network. This means there is no administrator or organization directly responsible for managing the system.

Stablecoins represent the second phase in the development of the crypto-asset market (from 2015 onward), with the aim of minimizing price volatility and improving issuance mechanisms. Stablecoins maintain price stability by pegging their value to low-volatility collateral assets or commodities, or through algorithmic technologies. Based on their stabilization mechanisms, stablecoins can be categorized into asset-backed stablecoins (pegged to traditional assets), crypto-backed stablecoins (pegged to crypto-assets), and algorithmic stablecoins.

Digital tokens, like stablecoins, also emerged in the second phase of the crypto-asset market. Digital tokens are digital assets issued by identifiable entities using distributed ledger technology (usually blockchain) and grant holders rights such as debt claims, equity ownership, dividend entitlement, or access to certain goods or services on the issuer's platform. Unlike virtual currencies, digital tokens are often issued to raise capital for new investment projects, support startups, or develop innovative products or services. The two main types of digital tokens are investment tokens and utility tokens.

Another distinct hybrid category is the token used within decentralized finance (DeFi tokens). In principle, DeFi tokens grant holders governance rights and control over the development direction of the underlying blockchain protocol. Another form of hybrid token is the non-fungible token (NFT). NFTs are digital tokens issued to confirm ownership, grant rights to an object, or secure a specific entitlement. These tokens are unique and recorded on the blockchain. They are non-fungible, meaning they cannot be exchanged on a one-to-one basis with the same type of crypto-asset.

**3. Challenges in Regulating Crypto-Assets**

A clear understanding of the economic nature of crypto-assets helps identify the key challenges in their regulation.

***First,*** *the lack of consensus on the definition and classification of crypto-assets*: One of the major challenges in regulating crypto-assets is the lack of consistency in their definition and classification across countries and international financial institutions (Blandin et al., 2019). Currently, there is no universally accepted definition of crypto-assets recognized by all countries and global financial bodies. The United States and the European Union (EU) have adopted approaches based on the economic and legal functions of crypto-assets. The U.S. Securities and Exchange Commission (SEC) uses the Howey Test to determine whether a crypto-asset qualifies as a security. Meanwhile, the EU has enacted the Markets in Crypto-Assets (MiCA) Regulation to establish a unified legal framework. China, while imposing a total ban on cryptocurrency transactions, has heavily promoted its central bank digital currency (CBDC) through the Digital Yuan (e-CNY) project. International institutions such as the International Monetary Fund (IMF), the World Bank, and the Financial Action Task Force (FATF) have issued guidance focused on risk management for crypto-assets, addressing concerns such as financial stability, stablecoin oversight, and anti-money laundering and counter-terrorism financing (AML/CFT). These divergent approaches have led to regulatory arbitrage, where companies shift operations to jurisdictions with more lenient regulations, thereby complicating global oversight and supervision (Blandin et al., 2019; PWC, 2023).

***Second,*** *systemic risks and threats to financial stability*:

The high volatility of crypto-assets raises concerns about their imb pact on the traditional financial system. Key risks include: i) Price volatility, as cryptocurrencies often exhibit large fluctuations, making them unreliable as stable means of payment; ii) Financial and systemic risks, since unsupervised use of crypto-assets may lead to defaults, financial bubbles, and risk spillovers into the traditional financial system; iii) Legal risks and fraud, where the lack of tight regulations has contributed to numerous scams and market manipulation in the crypto-asset space; iv) Money laundering and terrorist financing risks, due to the anonymous and cross-border nature of transactions, which make crypto-assets attractive for illicit activities. Central banks and international financial institutions are concerned that without proper controls, the rapid expansion of crypto-assets could pose a serious threat to global financial stability (IOSCO, 2019).

***Third,*** *challenges in monitoring and supervising crypto-asset transactions*: Unlike traditional financial systems - where central banks and regulators can control monetary flows - crypto-asset transactions occur on decentralized networks, making supervision more difficult. Despite all transactions being recorded on the blockchain, the identities of participants can remain anonymous or obfuscated. The rise of decentralized finance (DeFi), which provides financial services without intermediaries, increases the risk of abuse and money laundering. Additionally, once assets are stolen or involved in fraud, recovery becomes extremely challenging due to the irreversible nature of blockchain transactions (Ocampo et al., 2023; IOSCO, 2019).

***Fourth,*** *the impact of crypto-assets on fiscal, monetary, and capital management policies:* Crypto-assets - especially stablecoins - are challenging the role of central banks in controlling money supply and monetary policy. If stablecoins or other forms of cryptocurrencies become widely adopted as means of payment, central banks may lose the ability to manage the money supply effectively. This threatens the effectiveness of monetary policy, particularly as businesses and households increasingly prefer saving and investing in crypto-assets that are not pegged to fiat currencies. The risk of "cryptoization" is especially concerning for countries with weak currencies and fragile monetary frameworks. In countries with capital controls, cryptocurrencies can be used to move assets abroad without going through the banking system. New fiscal risks may also arise from the financial sector's exposure to the crypto-asset ecosystem, ambiguous tax regimes, and the transnational, often anonymous, nature of these assets - factors that can hinder tax collection and compliance (IMF, 2023).

***Fifth,*** *lack of international coordination in crypto-asset regulation:* Although many international organizations such as the IMF, FATF, and BIS have issued recommendations for crypto-asset regulation, there is still no globally unified legal framework. This has led to problems such as varying tax treatments for crypto-assets across countries, creating complexities in international trade and investment, as well as ineffective cooperation mechanisms for investigating crypto-related fraud (IMF, 2023; FATF, 2021).

***Sixth,*** *investor protection issues:* The growing popularity of crypto-assets has attracted a large number of individual investors to the market, most of whom are not protected against significant risks. If an exchange goes bankrupt or is hacked, investors may lose all of their assets without any regulatory safeguards. Due to the lack of strict oversight, the crypto-asset market is highly susceptible to manipulation by large institutions or influential individuals. Many investors lack the technological knowledge and understanding of the nature of crypto-assets, leading to poorly informed investment decisions. Regulating crypto-assets poses major challenges for governments and financial institutions worldwide. To address these issues, a flexible legal framework is required - one that can keep pace with rapid technological developments while ensuring financial stability and investor protection.

## 4. Recommended Principles for Regulating Crypto-Assets:

### *4.1. General principles*

According to the IMF, crypto-asset regulation aimed at safeguarding financial security should adhere to the following nine fundamental principles:

**Table 1. Regulatory Principles for Crypto-Assets Aimed at Ensuring Financial Security**

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|---|---|---|---|
| **Ensuring Macroeconomic and Financial Stability**<br>Risks related to:<br>- Monetary policy<br>- Cross-border capital flow management and volatility<br>- Fiscal policy | Principle 1: To ensure monetary stability, crypto-assets should not be granted the status of legal tender or official currency. | Principle 2: Limit excessive capital flow volatility and maintain the effectiveness of capital flow management measures. | Principle 3: Analyze and assess financial risks and apply clear tax treatments for crypto-assets. |
| **Legislation, Regulation, and Supervision Activities**<br>Risks related to:<br>- Legal certainty in regulations<br>- Safety of the financial system<br>- Consumer protection<br>- Market integrity and discipline | Principle 4: Establish legal certainty for crypto-assets and address associated legal risks. | Principle 5: Develop and implement safety, conduct, and supervisory requirements for all market participants involved in crypto-assets. | Principle 6: Establish a unified supervisory framework among domestic authorities and regulatory bodies. |
| **International Cooperation and the Role of Financial Institutions** | Principle 7: Establish international cooperation agreements to enhance supervision and enforcement of crypto-asset regulations. | Principle 8: Monitor the impact of crypto-assets on the stability of the international monetary system. | Principle 9: Strengthen global cooperation to develop digital infrastructure and alternative solutions for cross-border payments and finance. |

*Source: IMF, 2023*

Additionally, due to the borderless nature of crypto-assets, determining their geographic location poses a significant challenge for regulatory activities. The inability to identify the physical location of crypto-assets creates major obstacles for the establishment of legal frameworks governing such assets. According to international best practices, crypto-asset regulation should focus on entities associated with these assets, including issuers and crypto-asset service providers (such as exchanges and custodial wallet providers).

### *4.2. Specific regulation over Crypto-Assets services providers*

The decentralized nature of crypto-assets makes it difficult for regulators to identify the entities responsible for issuing them. The lack of information about the issuer often results in insufficient data on the crypto-assets being released, making it difficult to determine the technology being used, the purpose of the token issuance, and the beneficiaries of token sales. Regulatory frameworks for crypto-asset issuance should include requirements such as:

• Legal obligations for disclosure of information regarding the issued crypto-assets (e.g., asset type, technology used, rights conferred, issuance method, associated risks, dispute resolution mechanisms, details about the issuer, and leadership);

• Legal requirements for reporting issuance activities to regulatory bodies;

• Legal rules governing the advertisement and marketing of crypto-assets.

***4.3. Specific regulation over crypto-asset exchanges***

Centralized exchanges allow users direct access to trading and provide custodial services (via exchange wallets). These platforms can also transact directly with users to provide liquidity, which contradicts the decentralized nature of crypto-assets and introduces risks such as price manipulation and transparency issues. Moreover, crypto exchanges are frequent targets of cyberattacks. As such, there is a need for:

• A registration and licensing regime for centralized exchanges;

• Enhanced governance requirements for platform operators;

• Mandatory compliance with anti-money laundering (AML) and counter-terrorism financing (CFT) regulations;

• Adequate internal compliance systems to ensure adherence to domestic and international standards;

• Full and timely disclosure of product risks and benefits to users;

• Public access to reliable, timely, and non-discriminatory information;

• Rules assessing the transparency of platform procedures, such as order execution, error handling, and order cancellation.

***4.4. Specific regulation over custodial wallet providers***

Legal regulations must clearly distinguish between user wallet addresses and those of service providers. Wallet providers must:

• Ensure cybersecurity and have effective incident management procedures in place, including detection and classification of operational and network incidents;

• Manage customer custodial assets in real time in a secure, flexible, timely, and accurate manner;

• Regularly or upon request, share information with users about any changes in their crypto-asset holdings;

• Comply with requirements on reporting, minimum capital, liquidity maintenance, and insurance;

• Adhere to AML and CFT obligations.

## 5. Conclusion

This study has clarified the economic nature and regulatory challenges of crypto-assets, a rapidly evolving field that is increasingly attracting the participation of financial institutions and investors worldwide. With their decentralized characteristics and reliance on distributed ledger and cryptographic technologies, crypto-assets offer vast opportunities for innovation, yet also pose significant risks to the traditional financial system.

The findings show that differences in regulatory approaches across countries have resulted in regulatory arbitrage, allowing companies to relocate to jurisdictions with more relaxed oversight. This creates major challenges for the effective supervision and regulation of the crypto-asset market. From a policy perspective, the study underscores the need for a global regulatory framework, coordinated among international financial institutions and national governments. In particular, regulation should focus on entities associated with crypto-assets - such as issuers, exchanges, and custodial wallet providers - rather than the assets themselves. Adopting regulatory principles aligned with international best practices will help balance technological innovation with the need for financial stability.

This study also paves the way for future research directions, including assessing the impact of crypto-asset regulatory policies after implementation, comparing the effectiveness of different national approaches, and analyzing the implications of crypto-assets for monetary policy, fiscal policy, and capital control. As the crypto-asset market continues to grow, regulators must maintain flexibility in policymaking to seize opportunities for innovation while managing risks, thereby fostering a more sustainable and transparent digital financial ecosystem.

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