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دراسة تحليلية حول مدى صلاحية العملات المشفرة كنقود: من منظور إسلامي واقتصادي وقانوني

An Analytical Study on Whether Cryptocurrency Qualifies as Money: Islamic, Economic, and Legal Perspectives

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الملخص:

تهدف هذه الدراسة إلى تقديم إجابة شاملة ونقدية للسؤال المحوري حول ما إذا كانت العملات الرقمية تستوفي المعايير اللازمة لتُصنف كـ"نقود". تعتمد الدراسة في ذلك على آراء الخبراء في الشريعة الإسلامية والقانون والاقتصاد.

تتبنى الدراسة المنهج الاستقرائي والمقارن، وتنتمي إلى حقل العلوم الاقتصادية. ينقسم البحث إلى فصلين: يتناول الفصل الأول مفهوم النقود ووظائفها وشروطها، بينما يخصص الفصل الثاني للإجابة على التساؤل: هل العملات الرقمية نقود؟

تُظهر النتائج أن العملات الرقمية لا تستوفي المعايير الأساسية لتعريف النقود، ولا تحقق وظائفها الاقتصادية الأساسية أو شروطها، مما يستبعد تصنيفها كنقود معترف بها في الأطر الاقتصادية والقانونية.

الكلمات المفتاحية: مفهوم النقود، وظائف النقود، شروط النقود، العملات الرقمية.

Abstract

This study aims to provide a comprehensive and critical response to the central question of whether cryptocurrencies meet the necessary criteria to be recognized as "money," supported by the views of Islamic scholars, legal experts, and economists.

The study adopts inductive and comparative methodologies and falls within the field of economic sciences. The research is divided into two chapters: the first discusses the concept of money, its functions, and conditions, while the second examines the question: Are cryptocurrencies money?.

The findings clearly demonstrate that cryptocurrencies do not fulfill the essential criteria for the definition of money, nor do they meet its fundamental economic functions or conditions, thereby precluding their classification as recognized money in both economic and legal frameworks.

Keywords: Concept of money, functions of money, conditions of money, cryptocurrencies.

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Introduction

In recent years, the emergence of cryptocurrency has challenged the traditional understanding of money and its functions. Originally introduced as a decentralized digital currency, cryptocurrency—particularly Bitcoin—has grown into a global phenomenon, prompting extensive debate across economic, legal, and religious fields. While some view it as an innovative financial tool, others question its legitimacy and compatibility with established systems.

This research aims to analyze whether cryptocurrency qualifies as a form of money through three critical lenses: the economic, the Islamic, and the legal. The central question is whether cryptocurrencies fulfill the conventional functions of money—namely, being a medium of exchange, a unit of account—and whether they conform to Islamic financial principles and modern legal standards.

The study is significant for economists, policymakers, Islamic scholars, and legal experts alike, as it explores the multi-dimensional nature of cryptocurrency in a time when digital financial tools are rapidly evolving. By applying a comparative and interdisciplinary approach, this research seeks to provide a comprehensive evaluation of cryptocurrency's status in today’s global economy.

The Problematic Situation

In the past decade, the emergence of what is commonly referred to as "cryptocurrencies" has sparked significant debate regarding their true nature and classification. While some consider cryptocurrencies to be a form of money, the majority of official institutions and authorities do not recognize them as such. To address this issue, several key questions arise:

- What is the true nature of money?

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- What are the functions and regulations that define money?
- Do cryptocurrencies, as commonly referred to, conform to the definition, functions, and conditions of money?

Importance of the Study

The importance of this study lies in its focus on a significant topic related to what is known as cryptocurrency, considered one of the most important contemporary innovations. Many people question its true nature. Moreover, this research represents a summary of the findings I reached in my dissertation, through which I obtained my doctoral degree. The dissertation was centered on digital currencies and contracts, a subject I researched for more than three years.

Study Objectives

The objectives of this study are as follows:

- To develop a precise and comprehensive definition of money that clearly distinguishes it from other financial instruments.
- To analyze the core functions of money as recognized by the major schools of economic thought.
- To identify the key principles, conditions, and regulatory frameworks that govern the use and recognition of money.
- Examination and determination of the fundamental nature and the Islamic jurisprudential, economic, and legal classification of what is commonly known as 'cryptocurrency'.
- Understanding the Environmental Impact of the Mining Process.

Research Methodology

The nature of the research required the use of an inductive approach to ascertain the truth about money, its functions, and its conditions.

Additionally, a comparative approach was employed to compare legal tender money with what is called "cryptocurrency."

Research Plan

The research is divided into: Introduction, and two chapters:

- **Chapter One**: Understanding the Concept of Money — Definition, Functions, and Conditions
  - Section One: The Definition and Functions of Money
  - Section Two: The Conditions and Regulations of Money According to Muslim Scholars
- **Chapter Two**: Does Cryptocurrency Fulfill the Criteria of Money?
  - Section One: Reasons for the Emergence of Cryptocurrency
  - Section Two: Definition of Cryptocurrency
  - Section Three: Assessment of Cryptocurrencies in Light of the Definition, Functions, and Conditions of Money
  - Section Four: Environmental Pollution and Cryptocurrencies: A Critical Evaluation in Light of Islamic Ethics and Legal Principles
- **Conclusion**: Summarizes the key findings and conclusions.

Previous Studies

I reviewed a number of research papers and books about cryptocurrency, including:

- One of the most notable collective studies that addressed the issue of whether cryptocurrencies can be considered as money is found in the Proceedings of the Fifteenth International Conference of the College of Sharia and Islamic Studies at the University of Sharjah, held under the title “Virtual Currencies in the Balance” on April 16–17, 2019. The conference brought together 37 researchers from various Arab and Islamic countries and explored the topic of digital currencies from multiple perspectives: Sharia, legal, technical, and economic. The conference papers highlighted a clear tendency toward the necessity of enacting legal and regulatory frameworks to govern the use of digital currencies and mitigate associated risks, especially in regard to money laundering and engagement in illegal activities. From the Sharia perspective, the scholars emphasized the importance of verifying whether cryptocurrencies fulfill the traditional functions of money as a prerequisite for deeming them permissible for transactions. On the technical side, experts stressed the need for a strong infrastructure and an effective regulatory framework to ensure cybersecurity and reduce technological risks. Nevertheless, despite the richness of discussions and the diversity of viewpoints, the conference did not reach a unified or conclusive position on whether cryptocurrencies truly qualify as "money" from either an economic or Islamic legal perspective.

- The paper by Siswantoro, Handika, and Mita (2020) titled "The Requirements of Cryptocurrency for Money: An Islamic View" is one of the most prominent empirical studies addressing the classification of cryptocurrencies from the perspective of Islamic monetary theory. This research analyzed 23 major cryptocurrencies to determine whether they fulfill the essential functions of money and the Shariah-compliant conditions required for lawful monetary use. The study placed particular emphasis on the issue of monetary stability, arguing that price stability is a critical requirement for any currency to be considered valid for transactions under Islamic law. Therefore, the paper highlights the necessity of value stability, fair pricing, and the avoidance of excessive volatility as core Islamic monetary principles.

- Another foundational reference in the field is the book by Andreas M. Antonopoulos titled Mastering Bitcoin (2017). Although it is not written from a legal, economic, or Islamic perspective, the book provides a comprehensive technical explanation of how Bitcoin and blockchain technology work. It serves as an essential reference for understanding the underlying architecture, decentralization features, cryptographic security, and consensus mechanisms that make cryptocurrencies function as a new form of digital asset. This background is crucial when assessing whether cryptocurrencies meet the requirements to function as money in Islamic, economic, or legal contexts.

"In my research, the focus is on the legal and economic definition of money, as the true judgment must be based on an accurate and comprehensive perspective. The study relies on the functions, requirements, and essential conditions of money, and includes the Islamic point of view to provide an integrated understanding of the topic".

Chapter One: Understanding the Concept of Money: Definition, Functions, and Conditions

Section One: The Definition and Functions of Money

Sub-section One: The Definition of Money

The concept of money has been interpreted differently across disciplines, with each field approaching it from its own perspective.

According to the Encyclopaedia Britannica, money is defined as:

"A commodity accepted by general consent as a medium of economic exchange. It is the medium in which prices and values are expressed; as currency, it circulates anonymously from person to person and country to country, thus facilitating trade, and it is the principal measure of wealth" (Encyclopaedia Britannica).

From this definition, we observe that money must be:

- Generally accepted by society as a medium of economic exchange.
- Capable of circulating freely and anonymously among individuals and across borders.
- A standard through which wealth is measured and values are expressed. These attributes underscore money's essential role in both historical and modern financial systems, distinguishing it from other economic tools or assets.

1- The Legal Definition of Money

Law plays a foundational role in defining and institutionalizing money. Legal definitions provide the necessary trust, enforceability, and regulatory framework for its use in financial transactions. Legal scholars have proposed several definitions:

- The legal definition of "money" according to Title 18 of the United States Code, Section 2311 (18 U.S.C. § 2311) is:

"Money" means the legal tender of the United States or of any foreign country, or any counterfeit thereof.

- Money is "that which the state, by virtue of law, grants the status of general acceptability and considers as having unlimited legal tender power" (Shawish, 2011, p. 21).
- A third legal approach distinguishes money from other financial instruments (cheques or bills of exchange) by identifying three critical features: legal tender power, mandatory pricing, and the right of circulation (Shawish, 2011, p. 22).

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From these definitions, we conclude that money is not merely an economic tool but a legally recognized instrument. Its identity as money depends on formal recognition by a governing authority, which confers upon it the power to:

- Discharge debts (legal tender status),
- Circulate generally within society. These conditions are not inherent but are legally imposed, emphasizing the state's central role in the legal conception of money.

In summary:

- Money is a legal instrument whose function is defined and upheld by the law.
- For any object to be considered money in the legal sense, it must:
    - Be accepted as a means to settle debts (legal tender),
    - Enjoy wide circulation within the economy. Therefore, the governing authority's role is not ancillary but foundational to the legal identity of money.

2- The Economists' Definition of Money

Since money plays a pivotal role in economic systems, understanding its economic definition is crucial. However, economists have differed significantly in how they define money. These divergences stem from differing views on the role, functions, and importance of money in economic activity. Some economists define money by focusing on its characteristics, while others base their definitions on its functions. Additionally, a number of scholars emphasize the legal dimension of money (Rayan, 2014, p. 36).

Dr. Rayan Tawfiq Khalil cites several definitions of money offered by economists:

- "Money is everything that is generally accepted as payment for goods or for discharging all business obligations."
- "It is something used as a medium of exchange."
- "Money is anything that is generally accepted by everyone—either by custom, law, or intrinsic value—and serves as a medium for various exchanges of goods and services, suitable for settling debts and obligations."
- "It is any medium of exchange that enjoys general acceptance in the fulfillment of obligations" (Rayan, 2014, p. 37).

Dr. Khalil (2021) concludes: "From the above definitions, it is clear that there is consensus among economists that the essential characteristic of money is its general acceptability and its widespread use among individuals and groups as a medium of exchange."

One of the most widely accepted definitions among economists is:

"Money is something that possesses the quality of acceptability and is used as a final means of payment for goods and services and for settling debts" (Shawish, 2011, p. 28).

A clear convergence can be observed between the economic and legal definitions of money. Both perspectives emphasize two fundamental characteristics: general acceptability and the function of discharging debt obligations. This common ground highlights the indispensable role of trust and institutional recognition in defining money.

Sub-section Two: The Functions of Money

In most economic literature, money is defined by three core functions, although some economists argue that there are four. According to a paper published by the International Monetary Fund (IMF, 2021), money performs the following three primary functions:

1. **Medium of Exchange**: Money facilitates transactions by eliminating the inefficiencies of a barter system.
2. **Store of Value**: Money retains value over time and can be saved for future use.
3. **Unit of Account**: Money provides a standard measure for pricing goods and services and valuing assets and liabilities (ERB, 2015, pp. 23-24).

However, a deeper investigation into the views of various economic schools reveals a significant contention: many schools recognize only two essential functions of money:

1. **Medium of Exchange**
2. **Unit of Account** They argue that the store of value function is not intrinsic to money, especially in light of monetary depreciation and inflation. This perspective is supported by findings in my PhD dissertation and in a peer-reviewed journal article, which critically analyzed the notion that money reliably serves as a store of value in the modern economy (El khayali, 2024, pp. 82-103).

Section Two: The Conditions and Regulations of Money According to Muslim Scholars

Muslim scholars have conducted profound and detailed studies on the topic of money due to its critical role in economic and social stability. Upon examining their works, we find that they established several essential conditions and regulations concerning the nature, function, and legitimacy of money.

Among the most significant conditions outlined by Muslim scholars are:

- Price stability
- General circulation of money

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- Relative consistency and stability in value
- Issuance by a legitimate sovereign authority These principles reflect not only economic insight but also a commitment to justice, fairness, and the preservation of public interest.

Sub-section One: Price (Monetary Value)

In the context of Islamic jurisprudence, the term "price" is synonymous with money. Terminologically, it refers to anything that enjoys general acceptability as a medium of exchange, regardless of its physical form or material substance (Al-Manawi, 1990, p. 224).

From a juristic standpoint, anything that is commonly accepted and used among people within a given society as a means of payment fulfills one of the fundamental conditions of money—its monetary value or exchangeability.

However, it is important to recognize that this condition of monetary value cannot be fully realized unless other associated conditions are also met, such as general circulation and stability. These will be explored in detail in the following sections.

Sub-section Two: General Circulation of Money

The term **"circulation"** refers to the legitimate movement of money among the largest possible number of individuals within a society. This definition aligns with both modern economic theories and Islamic legal discourse, which frequently emphasize the principle of **general acceptability** (Ibn Ashur, 2001, p. 164).

One classical definition used by Islamic jurists and legal scholars states: "Money is any medium of exchange that enjoys general acceptance in the fulfillment of obligations" (Rayan, 2014, p. 37).

This definition encompasses two core conditions:

1. That money functions as a medium of exchange, previously discussed in Section One.
2. That it enjoys general acceptability in the discharge of debts and obligations. Accordingly, the condition of general circulation is not only vital in the writings of economists and legal scholars but is also a necessary requirement in Islamic jurisprudence for a substance to attain the legal status of money.

However, for money to circulate widely and be accepted voluntarily by the public—without coercion from any ruling authority—another essential requirement must be met: stability and consistency in value, which will be discussed in the next section.

Sub-section Three: Relative Stability and Consistency

One of the most fundamental prerequisites for a sound monetary system is the relative stability and consistency of a currency's value. This stability underpins economic predictability and supports effective monetary policy.

Remarkably, Ibn al-Qayyim addressed this issue centuries before modern economic theory emerged. He wrote: "Dirhams and dinars serve as the prices for goods sold; the price is the standard by which the value of wealth is determined. It is imperative, therefore, that this standard remains fixed and stable... Were the price to fluctuate like commodities, there would no longer be a reliable standard by which to evaluate transactions, and all things would effectively become commodities themselves. The general necessity for people to have a stable medium through which to appraise goods is undeniable, and such stability can only be achieved through a fixed and known standard of value. This can only occur when the price is used to assess goods without itself being subject to valuation by other goods; otherwise, it would become a commodity subject to the same market fluctuations, thereby corrupting economic transactions, causing disputes, and exacerbating harm. Monetary units are not sought for their intrinsic value, but rather as instruments to acquire goods. If money itself becomes an object of speculation, pursued for its own sake, the financial order would be disrupted. This is a rational principle particular to money and does not apply to other weighed or measured commodities …" (Ibn al-Qayyim, 2003, Vol. 3, pp. 401–402).

Ibn Shas similarly stated: "Anything whose value fluctuates significantly cannot be considered capital, because such fluctuations can obscure the true calculation of profit and loss" (Ibn Shas, 2011, Vol. 2, p. 279).

Dr. Shubra reinforces this by asserting: "The stability of money is an indispensable goal within the Islamic framework, due to Islam's emphasis on trustworthiness and justice in all human transactions. This aligns with the Qur'anic injunctions:

- **The Holy Quran, Surah Al-An'am, Verse 152**: "And give full measure and weight in justice"
- **The Holy Quran, Surah Al-A'raf, Verse 85**: "So fulfill the measure and weight and do not deprive people of their due"

These ethical imperatives apply not only to individuals but also to governments and institutions. Since money is a measure of value, any severe and sustained devaluation can be seen as a violation of these Qur'anic principles, and thus a form of corruption and injustice in society" (Shubra, 1990, p. 45).

Sub-section Four: Money Must Be Issued by the Sovereign Authority

To ensure that the above conditions are fulfilled, money must be subject to state control and legal supervision. Without such oversight, currency systems would be vulnerable to fraud, counterfeiting, and instability. The governing authority bears the responsibility of ensuring the legitimacy, circulation, and integrity of the currency.

Dr. Abdullah Radi al-Shammari emphasized: “Money can only function as a reliable measure of value through the recognition and regulation of the sovereign authority. Otherwise, as in the case of virtual currencies, monetary value remains unregulated” (al-Shammari, 2019, p. 81).

Muslim jurists and scholars have addressed the issue of currency issuance, including what Al-Qurtubi narrated from Sahl ibn ‘Abd Allah al-Tustari in his commentary on the verse:

"O you who have believed, obey Allah and obey the Messenger and those in authority among you" ((Qur'an 4.An-Nisa:59).

“Obey the ruler in seven matters: the minting of dirhams and dinars, measurements and weights, judicial rulings, pilgrimage, the congregational prayer, Friday prayer the two Eid prayers, and jihad” (Al-Qurtubi, 2006, Vol. 5, p. 259).

This view is supported by many classical scholars: **Imam al-Nawawi** noted "It is also disliked for anyone other than the ruler to mint dirhams and dinars, even if they are pure, because this is the responsibility of the ruler; and there is no guarantee against fraud or corruption in such cases” (Al-Nawawi, 2004, Vol. 5, pp. 494–495).

Ibn Taymiyyah declared that: “Therefore, it is appropriate for the ruler to mint coins for them that represent fair value in their transactions, without any injustice towards them” (Ibn Taymiyyah, 2004, Vol. 29, p. 469).

In modern times, these principles are universally applied through national monetary systems. Every country maintains its own currency under state regulation, recognized by international financial institutions like the **IMF**.

Even prominent economists have advocated that the state should be the sole issuer of money. Nobel Laureate Maurice Allais proposed:

- Restricting money creation exclusively to the state.
- Prohibiting banks from creating money beyond base money, limiting their role to service providers (Al-Jumaili, 2019, p. 185).

Conclusion: A Comprehensive Definition of Money

Based on the above, we can propose a comprehensive definition of money that integrates the insights of economists, legal experts, and Islamic jurists:

Money is anything that is widely accepted by people as a standard of value and a medium of exchange, characterized by relative stability and issued or officially approved by the responsible authorities.

This definition can serve as a foundational criterion in evaluating whether any form of currency—conventional or digital—meets the essential requirements of money in both Islamic law and economic practice.

Chapter Two: Does Cryptocurrency Fulfill the Criteria of Money?

Section One: Reasons for the Emergence of Cryptocurrency

One of the reasons behind the emergence of 'cryptocurrencies' was the exposure of financial transactions through electronic devices to theft and counterfeiting. This prompted technical experts in the field to search for a solution to this problem. In addition, the issue of preserving privacy also played a role, leading to the invention of **'cryptographic money'**. So, how did this come about?

Andreas M. Antonopoulos said: "Two fundamental questions for anyone accepting digital money are:

1. Can I trust the money is authentic and not counterfeit?

2. Can I be sure that no one else can claim that this money belongs to them and not me? (aka the “double-spend” problem) (Antonopoulos, 2014, p. 01).

A conviction was formed among researchers seeking solutions to the two aforementioned problems that the answer lies in encrypting financial transactions, which led them to search for the necessary mechanisms to implement it.

With the progress made in cryptography by the end of the 1980s, they found what they had been looking for. They began to apply and develop it, which eventually led to the invention of the first cryptocurrency.

One of the most important truths that Andreas points out—and I haven't found it in any of the research I've read—is that cryptocurrencies were centralized.

"Early digital currencies used a central clearinghouse to settle all transactions at regular intervals, just like a traditional banking system. Unfortunately, in most cases these nascent digital currencies were targeted by worried governments and eventually litigated out of existence. Some failed in spectacular crashes when the parent company liquidated abruptly. To be robust against intervention by antagonists, whether legitimate governments or criminal elements, a decentralized digital currency was needed to avoid a single point of attack. Bitcoin is such a system, completely de-centralized by design, and free of any central authority or point of control that can be attacked or corrupted" (Antonopoulos, 2014, p. 03).

Section Two: Definition of Cryptocurrency

Cryptocurrency has been defined in various ways by different institutions and experts, reflecting its multifaceted nature.

- The **International Monetary Fund (IMF)** defines virtual currencies (VCs) as:

"Digital representations of value, issued by private developers and denominated in their own unit of account. VCs can be obtained, stored, accessed, and transacted electronically, and can be used for a variety of purposes, as long as the transacting parties agree to use them. The concept of VCs covers a wider array of 'currencies,' ranging from simple IOUs of issuers (such as Internet or mobile coupons and airline miles), VCs backed by assets such as gold, and 'cryptocurrencies' such as Bitcoin" (IMF, 2016, p. 7).

- The **European Central Bank (ECB)** avoids the term "cryptocurrency" and instead uses the term "crypto-assets." It defines crypto-assets as:

"Digital assets that users store and exchange electronically in a peer-to-peer way without the need for trusted intermediaries, and that are enabled by a network of computers running publicly accessible distributed ledger technology (DLT) software, which applies cryptography" (ECB, 2018, p. 4).

- Further, **Andreas M. Antonopoulos**, a prominent blockchain and **Bitcoin** expert, defines Bitcoin as:

"A collection of concepts and technologies that form the basis of a digital money ecosystem. Units of currency called bitcoins are used to store and transmit value among participants in the bitcoin network" (Antonopoulos, 2017, p. 01).

Antonopoulos emphasizes that Bitcoin is the culmination of decades of cryptographic research and distributed systems innovations, consisting of four key components:

- A decentralized peer-to-peer network (the Bitcoin protocol);

- A public transaction ledger (the blockchain);
- Decentralized mathematical and deterministic currency issuance (distributed mining);
- A decentralized transaction verification system (transaction script) (Antonopoulos, 2014, p. 01).

In conclusion, definitions of cryptocurrency vary among institutions and scholars, each emphasizing different aspects—whether economic function, technological foundation, or regulatory interpretation. The IMF focuses on cryptocurrencies as privately issued digital value systems, the ECB highlights their decentralized, peer-to-peer nature supported by cryptographic technologies, while experts like Antonopoulos underscore the innovative architecture behind cryptocurrencies such as Bitcoin. Collectively, these definitions illustrate that cryptocurrency is not merely digital money but a complex and evolving technological and economic phenomenon.

Section Three: Assessment of Cryptocurrencies in Light of the Definition, Functions, and Conditions of Money

By referring to the preceding discussion on the definition, functions, and conditions of money, it becomes possible to assess the extent to which cryptocurrencies conform to—or diverge from—the classical and modern concept of money.

Sub-section One: Cryptocurrencies and the Definition of Money

Based on both legal and economic definitions, it is evident that so-called cryptocurrencies do not fulfill the essential criteria required to be classified as money. This is primarily due to their failure to meet two fundamental characteristics:

- **Universal acceptability**: Cryptocurrencies are not widely accepted as a means of payment across different sectors and societies.
- **Ability to serve as a final means of discharging debt**: They are rarely accepted as legal tender to settle obligations in most legal systems. These deficiencies render cryptocurrencies inconsistent with the basic definitional framework of money in both legal and economic contexts.

Sub-section Two: Cryptocurrencies and the Functions of Money

From an economic standpoint, virtual currencies such as **Bitcoin** do not fully satisfy the three primary functions of money outlined in economic literature:

1. Medium of exchange
2. Store of value
3. Unit of account

In the case of Bitcoin—the most widely used and recognized cryptocurrency at the time of writing—its utility as a medium of exchange is limited due to its low level of public acceptance and significant price volatility.

As noted by the European Central Bank: "virtual currencies have a limited function as a medium of exchange because they have a very low level of acceptance among the general public" (ECB, 2015, pp. 23-24).

Sub-section Three: Cryptocurrencies and the Conditions of Money

When assessed against the necessary conditions for money—such as price stability, widespread circulation, divisibility, institutional backing, and legal issuance by a sovereign authority—cryptocurrencies fall significantly short. Their volatility, lack of legal recognition, and absence of centralized regulation severely limit their capacity to function effectively as money in contemporary monetary systems.

1. **Cryptocurrencies and Price Acceptability** Cryptocurrencies generally lack universal acceptability as a medium of exchange. Most transactions globally still rely on state-issued fiat currencies. Despite increasing adoption in niche markets or among technology-savvy users, cryptocurrencies do not enjoy general use in everyday commerce.
2. **Cryptocurrencies and General Circulation** With respect to general circulation, cryptocurrencies are not widely used among a broad segment of the population in a regulated and legitimate manner. They are often used on unregulated platforms or for speculative purposes, which limits their utility and legitimacy in mainstream economic activities.
3. **Cryptocurrencies and Value Stability** Cryptocurrencies are characterized by extreme volatility. According to the **European Central Bank** (2015), Bitcoin's value has been known to fluctuate by over 40% in a single day, rendering it unsuitable as a stable medium of exchange or store of value. This high level of price instability significantly undermines its role as a unit of account, as the purchasing power of cryptocurrencies is unpredictable and unreliable for pricing goods and services.

   As a result, the low level of public acceptance and exchange rate volatility make current cryptocurrencies—especially Bitcoin—incapable of fulfilling the essential monetary functions. While it is possible that more stable virtual currencies may emerge in the future, existing cryptocurrencies do not currently meet the conditions necessary to be considered money (ECB, 2015, pp. 23-24).

4. **Cryptocurrencies and Legal Issuance** A fundamental legal requirement for money is its issuance by a sovereign authority. Legal frameworks generally mandate that money be issued and regulated by central banks or national treasuries to ensure public confidence, legal enforceability, and economic stability. These authorities support the currency through regulatory oversight, anti-counterfeiting protections, and monetary policy mechanisms.

   According to the International Monetary Fund (2020), among the 171 central banks in its membership:

   - 61% restrict currency issuance to physical formats (e.g., coins and banknotes).
   - 23% allow issuance in digital form.
   - 16% remain legally ambiguous regarding digital currencies.

   Thus, most countries still require money to be issued by a recognized public authority, which current cryptocurrencies do not fulfill (IMF, 2020).

In conclusion, although cryptocurrencies represent a significant technological development, they currently do not satisfy the foundational legal and economic criteria required to be recognized as money.

The status of cryptocurrencies as "money" has been widely rejected by the majority of global monetary authorities and legal scholars. With the exception of two countries, virtually all central banks and financial institutions do not recognize cryptocurrencies as legitimate money. Their reasons largely pertain to the lack of key characteristics such as legal tender status, price stability, and universal acceptability.

For example, the **Reserve Bank of Australia** (2024) clearly states that "while cryptocurrencies can be used to make payments, currently their use as a means of payment is limited and they do not display the key characteristics of money. However, there is one type of digital currency that could be considered money – digital currency issued by a central bank."

Similarly, the European Central Bank (2015) affirms that “even if the terms ‘virtual currency’ and ‘virtual currency schemes’ are used in this report, Eurosystem central banks do not recognise that these concepts would belong to the world of money or currency as used in economic literature, nor is virtual currency money, currency or a currency from a legal perspective.”

In the United States: Moreover, the Commodity Futures Trading Commission (CFTC) has classified Bitcoin and other cryptocurrencies as commodities. In its enforcement action against an unregistered Bitcoin options platform, the CFTC (2015) stated that "Bitcoin and other virtual currencies are commodities covered by the Commodity Exchange Act."

Legal scholars reinforce these regulatory views. Raynouard (2018) explains that "cryptocurrency is an asset that has value, determined by a market mechanism. It is certainly not money (in the legal sense), and certainly not a financial instrument."

Echoing this, Katasonov argues that cryptocurrency cannot be considered money due to its unstable purchasing power: “If the price fluctuations of cryptocurrencies during a single day reach 10–20% or more, then what kind of money is this? Cryptocurrency is incapable of performing the function of exchange or the function of payment” (Katasonov, 2022, p. 330).

These consistent assessments, across both regulatory bodies and academic discourse, demonstrate that cryptocurrencies do not meet the legal or functional definitions of money.

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Section Four: Environmental Pollution and Cryptocurrencies - A Critical Evaluation in Light of Islamic Ethics and Legal Principles

One of the most serious challenges associated with cryptocurrencies is environmental pollution. The mining process of many cryptocurrencies, particularly Bitcoin, requires an enormous amount of electrical energy. For instance, the energy required to produce Bitcoin is equivalent to the energy consumption of a medium-sized country. Dr. Saifedean Ammous (2018) highlights this concern by stating:

"The reward to the nodes validating transactions has proven to be a profitable use of processing power. In January 2017, the computing power of the Bitcoin network was equal to that of 2 trillion laptops - two million times greater than the processing power of the world's most powerful supercomputer, and over 200,000 times the combined processing power of the top 500 supercomputers in the world" (Ammous, 2021, p. 254).

In my view, this issue constitutes one of the greatest problems with these digital assets. How can it not, when air pollution is known to threaten life on Earth? The extreme climate changes and disasters we are experiencing are a direct result of such pollution. Therefore, from legal, ethical, and religious perspectives, this matter must be taken seriously.

Anyone familiar with the dangers of air pollution and the global efforts to combat it will be astonished to hear that some scholars permit the use of Bitcoin. No doubt, this is often due to a lack of awareness of its environmental consequences.

No matter how significant the benefits of these digital assets may seem, they cannot outweigh the existential threat they pose to life on Earth - a concern emphasized by environmental experts in every international summit. Humanity continues to pay a heavy price, particularly due to global

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warming, which results in wildfires, droughts, epidemics, the extinction of species, melting ice caps, and rising sea levels. Some islands have already disappeared, and entire countries are at risk of submersion due to sea-level rise—occurring faster than previously anticipated.

The extreme temperatures recorded during the summer of 2023 offer further evidence of this looming crisis. Scientists warn that the Earth's temperature may continue to rise if emissions are not curbed. While some non-Muslim billionaires are donating all or large portions of their wealth to fight pollution, others are approving technologies—like cryptocurrencies—that accelerate environmental destruction.

From an Islamic legal standpoint, it is difficult to imagine that the Sharia would approve of such instruments in their current form, as one of its primary objectives is the preservation of life and wealth. Air pollution poses a serious threat to both. Moreover, Islam strictly forbids all forms of corruption on Earth.

- The Holy Quran, Surah Al-Ma'idah, Verse 33:

“Indeed, the penalty for those who wage war against Allah and His Messenger and strive upon Earth [to cause] corruption is none but that they be killed or crucified or that their hands and feet be cut off from opposite sides or that they be exiled from the land. That is for them a disgrace in this world; and for them in the Hereafter is a great punishment.”

- The Holy Quran, Surah Al-A'raf, Verse 56:

“And cause not corruption upon the earth after its reformation.”

Air pollution negatively affects the essentials of life—food, water, and air. In the same way, the Sunnah also prohibits all forms of harm.

- Ibn Majah, Hadith 2340:

"There should be neither harming nor reciprocating harm"

- Sunan al-Tirmidhi, Hadith 1940:

"Whoever harms others, Allah will harm him; and whoever acts harshly, Allah will be harsh with him".

Dr. **Yusuf al-Qaradawi** explains that the principle of “no harm and no reciprocating harm” ensures the protection of the environment from all forms of damage, corruption, and pollution. It guarantees the preservation of all living beings—human, animal, and plant—and even the balance of the ecosystem. He references the Qur'anic verses:

- The Holy Quran, Surah Ar-Rahman, Verses 7-8:

"And the heaven He raised and imposed the balance (8) That you not transgress within the balance".

This principle, “no harm,” is both a jurisprudential and legal maxim used in Islamic rulings. As the poet in Maraqi al-Su’ud states:

The ruling is that which Shariah defines And all that harms must be denied

Hence, consultation with environmental scientists and economic experts is essential before issuing any ruling regarding the permissibility of cryptocurrencies, in accordance with Allah’s command:

- The Holy Quran, Surah An-Nahl, Verse 43:

"So ask the people of the message [i.e., former scriptures] if you do not know".

Findings and Conclusions

The study reveals that any instrument used as a medium of exchange cannot be classified as money—either from a legal (**Sharia**) or economic perspective—unless it fulfills four essential conditions:

- Intrinsic or recognized value
- Widespread public acceptance
- Relative stability in value

- Issuance or approval by the legitimate authority or legally authorized entity.

These conditions distinguish money from other financial instruments.

The study also indicates that many classical economic schools define money by two primary functions: medium of exchange and measure of value. However, some contemporary economists have added two more functions: store of value and standard of deferred payments. This expansion of functions remains controversial and requires further review in light of economic realities and Islamic legal principles.

Based on comparative analysis, money may be defined as: "Anything that enjoys general public acceptance as a fair standard of value and a widely accepted medium of exchange, characterized by relative stability, and issued or approved by a recognized legal authority."

This definition offers conceptual precision and helps distinguish money from other financial tools or digital assets.

The research concludes that cryptocurrencies or virtual currencies, such as **Bitcoin** and others, do not meet the aforementioned criteria of money—neither economically nor in terms of Islamic legal standards. This is due to:

- Their lack of relative stability.
- Absence of formal public acceptance by regulatory authorities.
- Lack of legal backing or guarantees.
- Absence of approval from legitimate authorities.

Therefore, it is more accurate to classify cryptocurrencies as commodities or digital assets rather than money. From a Sharia perspective, dealing with them is prohibited, due to the presence of excessive uncertainty, high risks, and significant environmental harm caused by mining operations.

The study also finds that the emergence of crypto-assets was driven by several factors, including:

- The widespread occurrence of financial fraud and counterfeiting.
- The need to enhance privacy in financial transactions.
- A shift toward decentralized financial systems as a response to government intervention.

Some of these cryptocurrencies began as centralized projects but were later developed into decentralized systems to resist governmental control.

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