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Research article

# Cryptocurrency legalization and economic growth dynamics: empirical evidence from OIC member states

Legalización de las criptomonedas y dinámica del crecimiento económico: datos empíricos de los estados miembros de la OIC

Muhammad Rheza Ramadhan¹: Ministry of Finance, Indonesia.

rhezakz@gmail.com

Henderi: University of Western Australia, Australia.

henderi.henderi@uwa.edu.au

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#### **Abstract:**

**Introduction:** This study examines how cryptocurrency legalization and prohibition impact economic growth, with a particular focus on Islamic countries where regulatory approaches vary widely. The unique context of Sharia law considerations adds complexity to cryptocurrency adoption in these regions, creating distinct regulatory environments worth analyzing. **Methodology:** The research employs the Difference-in-Differences (DiD) method with staggered treatment to analyze the economic effects of different regulatory frameworks across multiple Islamic nations. This approach controls for time-invariant differences between countries and common time trends, allowing for causal inference about regulatory impacts. **Results:** Cryptocurrency legalization has significantly boosted economic growth in Islamic countries, while banning cryptocurrencies has considerably reduced it. **Discussions:** Despite

<sup>&</sup>lt;sup>1</sup> Corresponding author: Muhammad Rheza Ramadhan. Ministry of Finance (Indonesia).





ongoing debates about Sharia compliance, cryptocurrency legalization enhances financial inclusion and provides legal clarity, both crucial for economic development. Strict prohibitions limit innovation, discourage investment, and reduce economic opportunities. **Conclusions:** While debates continue about whether cryptocurrencies are halal under Sharia law, the economic benefits of legalization provide compelling evidence for policymakers to adopt inclusive and supportive regulatory frameworks.

**Keywords:** Cryptocurrency regulation; Economic growth; Islamic finance; Financial inclusion; Sharia law; Blockchain; Monetary policy; Economic development.

#### Resumen

Introducción: Este estudio examina cómo la legalización y prohibición de las criptomonedas afecta a la economía, centrándose en los países islámicos donde los enfoques regulatorios varían ampliamente. Metodología: La investigación emplea el método de Diferencias en Diferencias (DiD) con tratamiento escalonado para analizar los efectos económicos de diferentes marcos regulatorios. Resultados: La legalización de las criptomonedas ha impulsado significativamente el crecimiento económico en países islámicos, mientras que su prohibición lo ha reducido considerablemente. Discusión: A pesar del debate continuo sobre el cumplimiento de la ley Sharia, la legalización de las criptomonedas mejora la inclusión financiera y proporciona claridad legal, ambas cruciales para el desarrollo económico. Las prohibiciones estrictas limitan la innovación, desalientan la inversión y reducen las oportunidades económicas. Conclusiones: Mientras continúa el debate sobre si las criptomonedas son halal según la ley Sharia, los beneficios económicos de su legalización proporcionan evidencia convincente para que los legisladores adopten marcos regulatorios inclusivos y de apoyo.

**Palabras clave:** Regulación de criptomonedas; Crecimiento económico; Finanzas islámicas; Inclusión financiera; Ley Sharia; Blockchain; Política monetaria; Desarrollo económico.

#### 1. Introduction

The growth of cryptocurrency transactions is marked by increasing adoption and integration of digital currencies into the global financial system (Gowda & Chakravorty, 2021). This trajectory is largely informed by the inherent advantages of cryptocurrencies, such as operational efficiency and speed, especially in the context of international payments and broader monetary inclusion. The growing interest in cryptocurrencies is also supported by technological advancements, including the development of machine learning algorithms designed to forecast cryptocurrency prices, which indicate sustained capital interest and enthusiasm for these digital assets (Vikram et al., 2022).

Sharma (2022) emphasizes the remarkable growth of the cryptocurrency market in India, where, between July 2020 and June 2021, the market experienced a 640% increase. This equated to approximately \$10 million in transactions originating from the Indian market, accounting for 42% of South Asia's total digital currency transactions during the same period. Such substantial market activity underscores the increasing acceptance and utilization of cryptocurrencies for transactional purposes.

Cryptocurrency can be defined as digital or virtual money that utilizes cryptographic techniques to secure its operations and operates independently of a central bank's control (Jafari et al., 2018; Majid et al., 2022). Unlike traditional currencies, cryptocurrencies function as decentralized assets, exempt from governmental and financial institution oversight.



They are universally accepted as a medium for payments and purchases over the internet, offering minimal or no transaction fees. Furthermore, cryptocurrencies are recognized for their safety, flexibility, and efficiency in digital financial exchanges (Majid et al., 2022; Podder, 2023). Digital currencies such as Bitcoin exemplify the core features of cryptocurrency systems, including their reliance on blockchain technology, which ensures secure validation of transaction data while maintaining user anonymity (Jafari et al., 2018).

The rising adoption of cryptocurrencies is also evident in scholarly discussions focusing on Islamic countries. Chowdhury and Razak (2019) note the expanding Islamic finance market and underscore the importance of integrating high-tech innovations, including cryptocurrencies, to meet the demands of both Muslim and non-Muslim populations. This adaptation reflects the growing demand for digital technologies in Islamic finance. Kusuma et al. (2020) observed an increased use of Bitcoin for online transactions in Indonesia, despite government-imposed bans on such platforms. This paradox highlights the growing acceptance and popularity of cryptocurrencies within the nation.

However, the increasing adoption of cryptocurrencies in Islamic countries is not without controversy. While the trend toward adoption is apparent, concerns regarding compliance with Shariah law have been raised. For instance, Mukhoyyaroh (2022) concluded that cryptocurrency investments and transactions often involve elements of maysir (gambling) and gharar (excessive uncertainty), both of which are prohibited under Islamic law. Additionally, the regulatory policies surrounding cryptocurrencies vary significantly among Islamic nations. While some countries have imposed outright bans, others have opted to regulate these digital currencies.

These differences stem from varying interpretations of Islamic law and diverse assessments of the opportunities and risks posed by cryptocurrencies. For example, some nations perceive cryptocurrencies as inconsistent with Shariah principles such as riba (usury), gharar, and maysir, leading to bans (Gaol et al., 2023). Moreover, the anonymity associated with cryptocurrency transactions, which can facilitate illicit activities, has prompted certain countries to prohibit their use to maintain financial authority and curb criminal activities (Hanafi & Rahman, 2019).

Conversely, other Islamic countries recognize cryptocurrencies as a legitimate asset class, provided they meet specific conditions. These nations allow cryptocurrencies to be used for charitable purposes such as zakah, infaq, sadaqah, and waqf (Bintarto et al., 2022). The regulatory approach in such countries reflects an understanding that cryptocurrencies can offer economic benefits and foster progressive development. Consequently, these nations prefer to regulate rather than ban cryptocurrencies, acknowledging their potential to contribute positively to the economy (Chowdhury & Razak, 2019).

Cryptocurrencies influence economic growth through various mechanisms. When incorporated into a country's financial system, they can serve as an alternative medium of exchange, reduce transaction costs, and facilitate international trade. These attributes may stimulate economic activity by enabling new business models and promoting innovation, thereby fostering economic growth (Podder, 2023). Furthermore, cryptocurrencies' decentralized nature can empower individuals and small businesses, potentially driving economic inclusion and development (Mamonova, 2019).



The advantages of adopting cryptocurrencies are manifold. They enhance transaction security, facilitate convenience, and enable swift financial processing across borders without the need for a traditional banking infrastructure (Majid et al., 2022). This decentralized nature eliminates the involvement of third parties, significantly reducing transaction costs while maintaining user anonymity (Podder, 2023). Blockchain technology, the backbone of cryptocurrency systems, offers immutable and tamper-proof records, ensuring robust protection against fraud and enhancing trust among users (Cτοῆκα, 2021). Additionally, the transparency and reliability of blockchain mechanisms strengthen the credibility of digital currencies as viable alternatives to conventional financial systems.

Some studies have examined the legalization of cryptocurrencies and their effects on economic growth, as well as the mechanisms through which these effects are realized. Riley (2021) highlights the significant market capitalization of cryptocurrencies and argues that for mining, investment, and research activities in China to operate efficiently, the country requires a robust regulatory framework for cryptocurrencies. This observation underscores the importance of legal clarity and governance in facilitating the seamless integration of cryptocurrencies into economic systems. Riley (2021) also explores the Chinese Cryptography Law, which reflects a pivotal step toward the formal legalization of digital currencies in the world's second-largest economy. This law signals a strategic shift in policy, aligning with China's broader ambition to embrace digital innovation while balancing its regulatory priorities.

The implications of cryptocurrency regulation are further illustrated in the work of Батракова and Краснощок (2024), who examine the transition of socio-economic relations in Ukraine toward a digital economy. Their study delves into the emergence of a crypto business sector and the legislative measures aimed at regulating this new economic phenomenon. The findings reveal that Ukraine's efforts to legalize and tax cryptocurrencies have both catalyzed economic development and underscored the complexities of integrating such technologies into existing financial frameworks. The authors emphasize that while the legalization of cryptocurrencies offers significant opportunities for innovation and economic modernization, it also necessitates careful consideration of potential risks, including financial instability and regulatory challenges.

Despite these promising prospects, current research lacks a comprehensive analysis of the impact of cryptocurrencies on the economies of Islamic countries. While existing literature provides valuable insights into related topics, it does not adequately address this specific area of inquiry. For instance, Chowdhury and Razak (2019) examined the legal permissibility of cryptocurrencies and their alignment with Shariah finance principles. Similarly, Sadiq and Akbar (2022) and Atikah et al. (2023) explored the broader financial systems within the context of Islamic finance, focusing on the potential adoption of cryptocurrencies and the role of fintech. Naz and Gulzar (2022) investigated the influence of Islamic finance on economic growth in Muslim-majority countries but did not consider the role of cryptocurrencies. Other studies, such as those by Dobrynina (2024), Mukhoyyaroh (2022), Podder (2023), and Jain (2019), offer insights into cryptocurrencies but fail to examine their specific implications for Islamic economies.

This study seeks to bridge this research gap by examining the relationship between cryptocurrency legalization and economic growth in Islamic countries. Additionally, it explores the impact of banning cryptocurrencies on economic development. By addressing these dimensions, the study aims to provide a nuanced understanding of how the regulatory status of cryptocurrencies influences economic outcomes in the context of Islamic finance.



Such an analysis is crucial for policymakers and stakeholders seeking to harness the potential of digital currencies while navigating the unique challenges posed by Shariah compliance and regulatory diversity.

This study aims to empirically analyze the relationship between cryptocurrency legalization and economic growth in Islamic countries, quantifying the impact of regulatory frameworks that permit cryptocurrencies on GDP growth rates. Additionally, it evaluates the economic consequences of cryptocurrency bans in Islamic countries, measuring how prohibition policies affect economic performance. The research seeks to identify the temporal dynamics of cryptocurrency regulation effects, determining whether the economic impacts of legalization or prohibition intensify or diminish over time. Through this comprehensive analysis, the study aims to provide evidence-based recommendations for policymakers in Islamic countries regarding cryptocurrency regulation, highlighting approaches that optimize economic outcomes while respecting Shariah principles.

## 2. Methodology

#### 2.1. Data

This study analyzes data from 57 member countries of the Organization of Islamic Cooperation (OIC) to examine the relationship between cryptocurrency legalization and economic growth. To determine the status of cryptocurrency legalization in each country, extensive online searches were conducted using tools such as Google and specialized websites, including cryptocurrency.law, coingecko.com, and freemanlaw.com. The legal status of cryptocurrencies in each country was then categorized into four distinct groups: legal, illegal, unregulated, and with no information available. This classification provides a comprehensive understanding of the diverse approaches taken by OIC member countries toward cryptocurrency regulation.

Additionally, GDP growth data sourced from the World Bank served as a critical variable for the analysis, offering insights into the economic outcomes associated with these regulatory differences. The study period covers the years 2016 to 2022, allowing for a longitudinal perspective on the impact of cryptocurrency regulation over time. However, due to incomplete data for some countries during the analysis period, 5 countries were excluded from the sample, resulting in a final dataset of 52 countries. Among these, 15 countries had legalized cryptocurrencies, 15 had deemed them illegal, 19 had no specific regulations, and 3 lacked sufficient information to categorize their regulatory status.

For the first part of the analysis, only countries that either legalized cryptocurrencies or had no regulations in place were included. This subset resulted in a sample of 34 countries, which were further divided into treatment and control groups based on their regulatory status. Countries that had legalized cryptocurrencies were assigned to the treatment group, with the analysis starting one year after the legalization occurred. This lag ensures that the economic impacts of legalization have sufficient time to materialize. The control group, on the other hand, consisted of countries that had not yet implemented any regulations (not yet treated) or those that had never regulated cryptocurrencies (never treated) during the study period. This design allows for a comparative assessment of economic performance between countries with proactive regulatory frameworks and those operating without formal regulations.



The second part of the analysis focused on countries that either illegalized cryptocurrencies or had no regulations in place, also resulting in a sample of 34 countries. Similar to the first analysis, these countries were classified into treatment and control groups. Countries that illegalized cryptocurrencies were categorized into the treatment group one year after the decision to criminalize cryptocurrency usage. This temporal lag ensures that the potential economic effects of the prohibition are adequately captured in the analysis. The control group consisted of countries that had not yet illegalized cryptocurrencies (not yet treated) or those that would never regulate cryptocurrencies (never treated) during the study period. This approach provides valuable insights into the economic ramifications of restricting cryptocurrency usage compared to maintaining a laissez-faire regulatory stance.

#### 2.2. Empirical Strategy

The quantitative research method employed in this study is the Difference-in-Differences (DiD) technique, specifically utilizing the method developed by de Chaisemartin and D'Haultfoeuille (2022). This advanced approach is particularly suitable for analyzing policy changes, such as the legalization or illegalization of cryptocurrencies, in scenarios where the timing of implementation varies across countries. The staggered adoption framework inherent in this method ensures that the treatment effects are measured with greater accuracy, providing a realistic representation of the impacts of cryptocurrency regulation on economic growth. By accounting for differing enactment timelines, the de Chaisemartin and D'Haultfoeuille DiD method offers a nuanced understanding of the dynamics of policy implementation and its effects across diverse national contexts.

One of the primary advantages of this methodology is its ability to address potential time-invariant confounding factors. In comparative analyses between treated and control groups, there is often a risk of bias arising from variables that remain constant over time but differ across groups. By focusing on changes in outcomes over time, the DiD approach effectively controls for these confounders, ensuring that the observed effects are attributable to the treatment—in this case, cryptocurrency regulation—rather than extraneous factors. This is achieved by comparing variations in economic growth before and after the implementation of cryptocurrency legalization or illegalization within each country. Consequently, this method allows for the isolation of the true impact of regulatory policies, filtering out noise introduced by constant factors across the study population.

Another critical advantage of the de Chaisemartin and D'Haultfoeuille method is its robustness in dealing with heterogeneous treatment effects. This is particularly important in a study of cryptocurrency regulation, as the economic impacts of legalization or illegalization may vary significantly across different countries or subgroups. Factors such as the size of the cryptocurrency market, levels of technological adoption, and the structure of the national economy could influence how countries respond to these regulations. The method's flexibility in accommodating various forms of treatment adoption and timing ensures that the estimated effects are both reliable and representative of the diverse contexts under study. This capability is essential for generating policy-relevant insights that account for the complex and multifaceted nature of cryptocurrency regulation.

The application of the DiD method in this study is structured into two main analyses. The first analysis focuses on countries that have legalized cryptocurrencies, with the treatment group comprising nations that implemented legalization. The treatment effect is measured one year after legalization to allow sufficient time for the economic impacts to materialize. The control group consists of countries that either have not yet legalized cryptocurrencies or will never legalize them during the study period.



This comparative framework enables the assessment of the economic outcomes associated with legalization, highlighting its potential benefits or drawbacks.

The second analysis examines the effects of cryptocurrency illegalization. In this analysis, the treatment group includes countries that have outlawed cryptocurrency, with the treatment effect measured one year after the illegalization. This lag ensures that any observed changes in economic growth can be attributed to the policy change rather than immediate or unrelated fluctuations. The control group comprises countries that have not yet implemented regulations to outlaw cryptocurrencies or those that have chosen to leave cryptocurrencies unregulated entirely. This approach allows for a detailed investigation of the consequences of restrictive regulatory policies, contrasting them with the outcomes in more permissive or neutral environments.

The following DiD model is used to estimate the impact:

$$O_{i,t} = \beta_0 + \sum_{e=-K}^{-2} \delta_e \, T_{i,t}^e + \sum_{e=0}^{L} \tau_e \, T_{i,t}^e + \phi_t + v_i + \mu_{i,t} \quad (1)$$

Where i represents Islamic countries, t denotes the year, O is the outcome variable (GDP growth), and T is the treatment dummy. e=-K to 2 shows that the pre-treatment period is 2 years before the treatment period, which is 1 year before the country legalizes or illegalizes cryptocurrency. e=0 shows the first year of treatment, meaning one year after the legalization or illegalization of cryptocurrency. The baseline year is e=-t0 or the year in which the country legalizes or illegalizes cryptocurrency. The value of t1 indicates the maximum treatment period to be analyzed, in this case three years after the baseline, or three years after the legalization or illegalization of cryptocurrency. t0, t0, t0, and t0 are parameters to be estimated. t0 is time fixed effect, t1 is unit fixed effect, and t1 is error term.

#### 3. Results

Based on an analysis conducted using the Difference-in-Differences (DiD) method developed by de Chaisemartin and D'Haultfoeuille (2022), the findings highlight contrasting impacts of cryptocurrency regulation on economic growth within Islamic countries. The results provide nuanced insights into how the legalization and illegalization of cryptocurrencies influence macroeconomic performance in these nations.

The first analysis focuses on countries that have either legalized or left cryptocurrencies unregulated. The results, presented in Table 1, indicate that, on average, the legalization of cryptocurrencies leads to an increase in economic growth by 2.78 percentage points. Specifically, countries that have implemented legal frameworks for cryptocurrencies demonstrate higher GDP growth rates compared to those that have not regulated them. This result is statistically significant and suggests that the establishment of a legal and regulatory framework for cryptocurrencies can create an enabling environment for economic activity. Such frameworks can enhance investor confidence, attract foreign and domestic investments, and foster innovation in the financial sector, particularly through the development of blockchain technology and other cryptocurrency-related services.

The coefficients for different time periods relative to the legalization event reveal additional insights. During the first year of legalization (Lag 0), the coefficient is 2.884, which is significant at the 10% level. This indicates that the positive effects of legalization begin to materialize almost immediately. By the second year after legalization (Lag 1), the effect remains robust, with a coefficient of 2.748, again significant at the 10% level.



By the third year (Lag 2), the impact becomes even more pronounced and statistically significant at the 1% level, with a coefficient of 2.638. This suggests that the benefits of cryptocurrency legalization may accumulate over time as the regulatory environment stabilizes and market participants adapt to the new framework.

The overall effect of cryptocurrency legalization, averaging 2.780 percentage points, is highly significant at the 1% level. These findings imply that legalizing cryptocurrencies can contribute to economic dynamism by enabling financial inclusion, reducing transaction costs, and supporting the growth of a digital economy. Legalization can also encourage the establishment of cryptocurrency-related businesses, stimulate technological adoption, and integrate Islamic countries more effectively into the global financial ecosystem.

**Table 1.**The Result of The First Analysis

Time	Coefficient	Standard error	Sig.
Lead 2	2.621129	1.508925	
Lead 1	0.977772	1.447575	
Lag 0	2.884206	1.583877	*
Lag 1	2.747956	1.885382	*
Lag 2	2.637688	0.796816	***
Overall effect	2.780402	1.313042	***
Time fixed effect	Yes		
Observation fixed effect	Yes		
Covariates	No		

\*\*\*: significant at 1% \*\*: significant at 5% \*: significant at 10%

Source: Own elaboration.

The second analysis examines the effects of cryptocurrency illegalization. As shown in Table 2, the findings reveal that illegalizing cryptocurrencies reduces economic growth by an average of 1.59 percentage points. Countries that have imposed bans on cryptocurrencies experience lower GDP growth rates compared to those that have left cryptocurrencies unregulated. This result is statistically significant and underscores the economic costs associated with stringent regulatory policies or outright prohibitions on digital currencies.

The coefficients for various time periods relative to the illegalization event provide further clarity. In the first year following illegalization (Lag 0), the coefficient is -1.666, indicating a negative impact on economic growth, although this result is not statistically significant. By the second year after the ban (Lag 1), the negative effect becomes more pronounced, with a coefficient of -5.734, which is significant at the 1% level. This suggests that the adverse effects of illegalization may intensify over time as economic actors adjust to the constraints imposed by the regulatory environment. By the third year (Lag 2), the coefficient becomes positive at 3.027 but is not statistically significant, implying potential economic recovery or adaptation over a longer horizon.

The overall effect of cryptocurrency illegalization, averaging -1.588 percentage points, is significant at the 1% level. These results highlight the detrimental impact of restrictive policies on economic growth, which may be attributed to reduced financial innovation, discouraged investment, and the inability to leverage the benefits of blockchain technology. Banning cryptocurrencies may also limit the opportunities for international trade and financial inclusion, particularly in countries with underdeveloped banking systems.



Table 2.

The Result of The Second Analysis

Time	Coefficient	Standard error	Sig.
Lead 2	0.547934	1.958988	
Lead 1	2.200965	2.855063	
Lag 0	-1.665931	1.567195	
Lag 1	-5.734234	2.800871	***
Lag 2	3.027297	3.304572	
Overall effect	-1.58799	0.753669	***
Time fixed effect	Yes		
Observation fixed effect	Yes		
Covariates	No		

<sup>\*\*\*:</sup> significant at 1% \*\*: significant at 5% \*: significant at 10%

**Source:** Own elaboration.

#### 4. Discussion

Cryptocurrency legalization has been identified as a significant driver of economic growth due to its potential to introduce new methods of financial turnover and improve a state's financial capacity through enhanced fiscal and financial links (Vorobets, 2020). By establishing a regulatory framework, governments can encourage the development of new sectors and markets, as seen in the emergence of the cryptocurrency sector and its influence on monetary markets (Батракова & Краснощок, 2024). Furthermore, incorporating cryptocurrencies into economic systems, supported by scientific theories and technological advancements, has the potential to enhance infrastructure and environmental conditions surrounding cryptocurrency usage, thereby stimulating economic growth through related projects (Vorobets, 2020).

Legalization plays a pivotal role in reducing the risks and ensuring stability in cryptocurrency systems, creating a foundation for investments and fostering innovation in financial markets (Voronkov & Zhukova, 2022). The introduction of clear legal measures allows governments to mitigate volatility and establish trust, which is crucial for attracting both domestic and foreign investors. In developing countries, enhanced acceptance of cryptocurrencies facilitated by regulation can lead to increased adoption within financial systems (Yeong et al., 2019). As cryptocurrencies become more widely integrated, they can transform traditional financial markets by reducing transaction costs, promoting efficiency, and fostering economic growth through broader applications.

In the context of Islamic countries, the legalization of cryptocurrencies aligns with Islamic financial principles, which prohibit interest-based transactions and financing for goods without intrinsic economic value. By adhering to these principles, cryptocurrencies present an opportunity to enhance economic growth in a Shariah-compliant manner (Anwar, 2024). Cryptocurrencies facilitate seamless and efficient trade, attracting a wide array of participants and traders to financial markets (Naz & Gulzar, 2022). Moreover, blockchain technology—a core component of cryptocurrency infrastructure—can enhance financial inclusivity by providing financial services to unbanked populations. This inclusiveness is particularly beneficial in regions where access to traditional banking services is limited, enabling greater participation in economic activities and fostering overall growth (Butt et al., 2023).



Legalization also enhances legal certainty by providing clear rules that define the rights and responsibilities of all participants in the cryptocurrency ecosystem. Legal certainty is a fundamental principle of economic relations, as it allows businesses and individuals to make informed decisions with predictable legal outcomes (Ogneviuk, 2021). By establishing intelligible legal norms, governments can create a structured and permissive environment for cryptocurrency activities.

This framework ensures that cryptocurrency interactions are legally binding and effectively regulated, fostering trust and stability in financial markets (Turchyn & Turchyn, 2021). Legalizing cryptocurrencies also promotes their recognition as legitimate financial instruments, paving the way for increased investments and the development of industries related to cryptocurrency technology. Such legal actions can catalyze the formation of new businesses and services, expand financial markets, and attract cryptocurrency investors, further bolstering economic growth (Kasyanenko et al., 2021; Vorobets, 2020).

Another significant benefit of legalization is its potential to reduce cybersecurity threats and crimes associated with unregulated cryptocurrency use, such as ransomware attacks. A robust legal framework empowers law enforcement agencies to effectively combat such issues, safeguarding the economy and enhancing national security (Stevani & Disemadi, 2021). This protective aspect of regulation not only mitigates risks but also strengthens investor confidence, which is essential for sustainable economic development.

Conversely, the illegalization of cryptocurrencies poses challenges to economic development by limiting capital inflows from cryptocurrency-related investments. Cryptocurrencies are recognized as efficient financial assets with the potential to attract both private and institutional investors (Mamonova, 2019). When a country bans cryptocurrencies, it effectively closes off a lucrative avenue for investment, reducing overall investment levels and slowing economic growth. This regulatory stance can deter technological advancements and stifle innovation, further constraining economic progress.

Advancements in cryptocurrency and blockchain technology hold immense potential for revolutionizing capital fundraising and money transfer systems, particularly in regions where traditional financial systems are heavily regulated (Mamonova, 2019). Blockchain technology's transparency, efficiency, and security offer transformative benefits, including reduced transaction costs and enhanced accessibility. Additionally, the development of national digital currencies can accelerate economic growth by facilitating faster and more efficient trade, eliminating the reliance on physical cash, and streamlining monetary policy implementation (Grigoriev, 2019).

Legalizing cryptocurrencies can also contribute to broader financial sector modernization. By integrating digital currencies into national economies, governments can foster innovation, promote competition, and encourage the development of financial technologies. The presence of a well-regulated cryptocurrency ecosystem can attract global talent and investment, further enhancing a nation's economic potential. Moreover, the integration of cryptocurrencies into international trade networks can strengthen economic ties and improve trade competitiveness, particularly for developing countries seeking to diversify their economic bases.

In addition to fostering domestic growth, cryptocurrency legalization has global implications. Countries that adopt forward-looking regulatory policies are better positioned to become leaders in the rapidly evolving digital economy. By setting international standards and participating in cross-border cryptocurrency activities, these nations can play a pivotal role in shaping the future of global finance.



This leadership not only enhances their economic influence but also creates opportunities for collaboration and knowledge-sharing with other countries.

Therefore, the legalization of cryptocurrencies offers significant economic benefits, including enhanced financial inclusion, increased investment, and the development of new markets and industries. By establishing clear regulatory frameworks, governments can mitigate risks, attract global investors, and foster innovation. Conversely, the illegalization of cryptocurrencies limits economic opportunities, stifles technological advancement, and hinders financial modernization. As nations navigate the complexities of cryptocurrency regulation, a balanced approach that leverages the advantages of legalization while addressing potential risks will be essential for sustainable economic growth and development.

#### 5. Conclusion

This study examines the impact of cryptocurrency legalization and illegalization on economic growth, focusing on Islamic countries where the regulatory stance toward cryptocurrencies varies widely. Using the Difference-in-Differences (DiD) method, the analysis reveals distinct and significant effects of these contrasting approaches to cryptocurrency regulation. The findings highlight that the legalization of cryptocurrency contributes positively to economic growth, while illegalization has adverse effects, underscoring the critical role of regulatory frameworks in shaping economic outcomes in the context of digital currencies.

The positive relationship between cryptocurrency legalization and economic growth suggests that, despite ongoing debates among Islamic scholars regarding the halal status of cryptocurrencies under Sharia law, their legalization offers tangible economic benefits. Legalization fosters financial inclusiveness by integrating previously unbanked populations into the financial system through accessible and efficient digital platforms. This inclusiveness is particularly relevant in Islamic countries, where significant portions of the population may lack access to traditional banking services. By facilitating broader financial participation, cryptocurrencies can stimulate economic activities, drive investments, and support the growth of small and medium-sized enterprises (SMEs). These benefits, enabled by legal frameworks that provide clarity and security, contribute to a more dynamic and inclusive economic environment.

Legalization also enhances legal certainty, which is a cornerstone of stable economic relations. Clear and well-defined legal frameworks for cryptocurrency use and transactions ensure that participants—whether individuals, businesses, or financial institutions—understand their rights and responsibilities. This clarity reduces ambiguities, mitigates disputes, and builds trust in the financial system. In turn, this trust attracts both domestic and international investments, as investors are more likely to engage in markets with transparent and predictable regulations. Moreover, regulatory frameworks that recognize cryptocurrencies as legitimate financial instruments enable governments to establish taxation mechanisms, further strengthening public finances and enabling the reinvestment of revenues into economic development initiatives.

On the other hand, the findings also reveal that the illegalization of cryptocurrencies negatively impacts economic growth in Islamic countries. This decline highlights the economic costs associated with stringent regulatory measures or outright bans. When countries choose to prohibit cryptocurrencies, they not only restrict innovation but also limit opportunities for financial modernization. Prohibitions can hinder the adoption of blockchain technology, which underpins cryptocurrencies and offers transformative potential in areas such as secure digital transactions, supply chain management, and smart contracts.



By banning cryptocurrencies, governments may forfeit the economic advantages associated with these innovations, such as reduced transaction costs, enhanced efficiency, and increased financial inclusivity.

The negative impact of illegalization also reflects the broader consequences of regulatory uncertainty and rigidity. In environments where cryptocurrencies are banned, investors and entrepreneurs are likely to seek alternative markets with more favorable regulatory conditions, leading to capital flight and missed opportunities for economic growth. Additionally, illegalization may inadvertently drive cryptocurrency activities underground, increasing the risk of illicit transactions and reducing the ability of governments to monitor and regulate financial activities effectively. This lack of oversight can exacerbate economic vulnerabilities and undermine national security, further highlighting the challenges of a prohibitive approach.

The findings of this study suggest that the economic potential of cryptocurrencies requires an open and constructive approach from governments and policymakers. Countries that view cryptocurrencies as a threat to economic stability may need to reconsider their regulatory stance, recognizing that well-designed frameworks can mitigate risks while harnessing the benefits of digital currencies. For example, policies that promote transparency, accountability, and innovation in the cryptocurrency sector can help address concerns about volatility and misuse while fostering economic growth and development.

Furthermore, the legalization of cryptocurrencies aligns with global trends toward digital transformation and the integration of emerging technologies into financial systems. As more countries embrace digital currencies, those that remain resistant may find themselves at a competitive disadvantage in the global economy. By adopting progressive regulatory measures, Islamic countries can position themselves as leaders in the digital finance revolution, leveraging the potential of cryptocurrencies to drive sustainable growth and enhance their economic resilience.

Finally, the study demonstrates the dual effects of cryptocurrency regulation on economic growth in Islamic countries. While legalization promotes financial inclusiveness, legal certainty, and economic dynamism, illegalization stifles innovation, limits investment, and reduces economic opportunities. These findings underscore the importance of constructive and forward-looking regulatory approaches that balance the benefits of cryptocurrencies with potential risks. As debates over the halal status of cryptocurrencies under Sharia law continue, the economic advantages of legalization provide compelling evidence for policymakers to adopt inclusive and supportive frameworks that enable cryptocurrencies to contribute positively to national and regional economies.

#### 6. Recommendations

Based on the empirical findings of this study, the following recommendations are proposed for policymakers, regulators, and stakeholders in Islamic countries:

First, Islamic countries that currently ban cryptocurrencies should consider implementing regulatory frameworks rather than maintaining outright prohibitions. The evidence suggests that legalization yields positive economic benefits, while illegalization impedes economic growth. A transition from prohibition to regulation would allow these countries to capture the economic advantages of cryptocurrencies while establishing appropriate safeguards. This approach could include phased implementation, beginning with limited use cases and expanding as regulatory capacity develops.



Second, Islamic countries that have already legalized cryptocurrencies should focus on strengthening their regulatory frameworks to maximize economic benefits while minimizing potential risks. This includes developing comprehensive guidelines that address specific concerns related to Shariah compliance, creating specialized regulatory bodies with expertise in both digital currencies and Islamic finance, and investing in technological infrastructure to monitor cryptocurrency transactions effectively. Clear regulatory parameters would enhance investor confidence, attract capital, and foster innovation in the financial technology sector.

Third, policymakers should prioritize collaborative approaches to cryptocurrency regulation through regional coordination among Islamic countries. Establishing common regulatory standards and shared best practices through organizations like the Organization of Islamic Cooperation (OIC) would prevent regulatory arbitrage and promote cohesive development of the cryptocurrency ecosystem across the Islamic world. This coordination could include developing Shariah-compliant cryptocurrency instruments that adhere to Islamic financial principles while leveraging blockchain technology.

Fourth, governments should invest in educational initiatives to improve public understanding of cryptocurrencies and blockchain technology. Enhancing digital and financial literacy would empower citizens to make informed decisions about cryptocurrency participation while reducing vulnerability to fraudulent schemes. These educational efforts should extend to religious scholars, banking professionals, and regulatory staff to facilitate informed dialogue about the compatibility of cryptocurrencies with Islamic financial principles.

Fifth, regulatory frameworks should incorporate mechanisms for continuous assessment and adaptation. The rapidly evolving nature of cryptocurrency technology necessitates flexible regulatory approaches that can adjust to emerging trends, challenges, and opportunities. Regular evaluation of regulatory impact would enable policymakers to refine their strategies based on empirical evidence rather than speculative concerns.

Sixth, Islamic countries should explore the development of central bank digital currencies (CBDCs) as a complementary approach to private cryptocurrencies. CBDCs could provide many of the benefits of digital currencies—such as enhanced payment efficiency and financial inclusion—while maintaining government oversight and monetary policy control. These official digital currencies could be designed in compliance with Shariah principles, potentially offering a bridge between traditional financial systems and the emerging cryptocurrency ecosystem.

Finally, regulatory frameworks should specifically address concerns about illicit activities without unnecessarily restricting legitimate cryptocurrency use. Implementing robust know-your-customer (KYC) and anti-money laundering (AML) protocols would help mitigate risks of illegal transactions while allowing the cryptocurrency market to develop in a responsible manner. This balanced approach would protect national security interests while fostering innovation and economic growth.

These recommendations acknowledge both the economic potential of cryptocurrencies revealed by this study and the legitimate concerns about their implementation in Islamic contexts. By adopting thoughtful, evidence-based regulatory approaches, Islamic countries can harness the economic benefits of cryptocurrencies while addressing specific challenges related to Shariah compliance, financial stability, and consumer protection.



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#### **Contributions of the Authors:**

Conceptualization: Ramadhan, Muhammad Rheza; Software: Ramadhan, Muhammad Rheza; Validation: Ramadhan, Muhammad Rheza; Henderi, Henderi Formal Analysis: Ramadhan, Muhammad Rheza; Data curation: Henderi, Henderi; Writing-Preparation of the original draft: Ramadhan, Muhammad Rheza Drafting-Revision and Editing: Henderi, Henderi Project Administration: Henderi, Henderi.

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#### **AUTHOR/S:**

#### Muhammad Rheza Ramadhan

Ministry of Finance, Indonesia.

Tax Policy Analyst at Directorate General of Taxes, Ministry of Finance, Indonesia. Research interests include tax policy, impact evaluation, cryptocurrency, economic growth determinants, and economic modeling. Experienced in analyzing fiscal measures and their economic impacts. Applies quantitative methods to assess policy effectiveness and develop evidence-based tax frameworks. Particularly focused on emerging digital economy taxation challenges, including cryptocurrency regulation. Skilled in economic modeling to forecast policy outcomes and growth patterns.

Índice H: 7

**Orcid ID:** https://orcid.org/0009-0007-1559-0591

Scopus ID: https://www.scopus.com/authid/detail.uri?authorId=59495206700

Google Scholar: <a href="https://scholar.google.com/citations?user=WsO3OrQAAAAJ&hl=en">https://scholar.google.com/citations?user=WsO3OrQAAAAJ&hl=en</a>

#### Henderi

University of Western Australia, Australia

PhD Student at University of Western Australia specializing in taxation economics. Research interests center on tax policy, economic growth, and tax avoidance mechanisms. Studies the relationship between fiscal structures and growth indicators through econometric analysis. Examines how tax compliance and avoidance strategies influence resource allocation and economic efficiency. Applies academic rigor to develop models quantifying the impact of tax policy interventions on corporate behavior and economic outcomes.

Orcid ID: <a href="https://orcid.org/0009-0003-1636-1820">https://orcid.org/0009-0003-1636-1820</a>