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Cryptocurrency integration: A blessing or a curse for economic development and stability?

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Abstract: *Purpose*: To systematically review and synthesize existing empirical evidence on the multifaceted impacts of cryptocurrency integration on economic development and stability, aiming to determine whether its proliferation is predominantly beneficial or detrimental to sustainable economic systems. *Methodology*: A systematic literature review was conducted following the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines. The Scopus database was searched for empirical articles published between 2010 and 2024, focusing on keywords related to cryptocurrencies, economic development, economic growth, financial stability, financial risks, and financial inclusion. A multi-stage filtering process led to the inclusion of 21 relevant research articles. *Results*: The review reveals a predominant consensus (52.4% of reviewed articles) that cryptocurrency integration has a negative impact on economic growth and stability, primarily due to volatility, systemic risks, and its use in illicit activities. While some studies highlight potential for financial inclusion (e.g., SME financing) and as a hedge in specific contexts, the broader findings point to significant challenges for monetary policy, regulatory oversight, and conventional banking paradigms. *The theoretical contribution*: This study consolidates fragmented research into a coherent overview, highlighting the complex and often contradictory effects of cryptocurrencies. It contributes to understanding the challenges digital currencies pose to traditional economic theories and models of

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financial stability, particularly within the context of achieving sustainable development. *Practical implications*: The findings urge policymakers to develop robust, globally coordinated regulatory frameworks to mitigate systemic risks, combat financial crime, and protect consumers. Financial institutions must adapt their risk management strategies to accommodate digital assets. The study also highlights the importance of public financial literacy programs regarding cryptocurrency risks and advocates for considering the impacts of cryptocurrency in broader economic and sustainable development planning.

Keywords: cryptocurrencies, economic stability, economic growth, financial risks, financial sector

Sustainable Development Goals (SDGs): SDG 8: Decent Work and Economic Growth; **SDG 9:** Industry, Innovation and Infrastructure; **SDG 10:** Reduced Inequalities; **SDG 16:** Peace, Justice and Strong Institutions.

1. Introduction

The emergence of cryptocurrencies and blockchain technology has transformed the financial landscape, introducing new risks and challenges that require attention (Kayani & Hasan, 2024). Cryptocurrencies are decentralizing interactions among consumers, firms, and policymakers, and their rapid growth has been fueled by the development of distributed ledger technologies (Sin & Rice, 2022; Hayes, 2024). The debut of Bitcoin in 2008/2009 was a direct response to the widespread distrust in central banks and governments following the Lehman Brothers' bankruptcy on September 15, 2008 (Roth, 2024). This pivotal event triggered the most severe global financial crisis since the Great Depression of the 1930s (Gopinath, 2020). The release of the Bitcoin white paper by Satoshi Nakamoto on October 31, 2008, signaled the emergence of a groundbreaking cryptocurrency that would challenge traditional financial systems (Ducrée, 2022). The cryptocurrency market witnessed exponential growth, with its total value surging past $2 trillion in September 2021, a tenfold jump from its early 2020 levels (Drakopoulos, Natalucci, & Papageorgiou, 2021). As of January 2025, the global cryptocurrency market capitalization stood at $3.89 trillion, with Bitcoin accounting for 55.34% of the market (Forbes, 2025). The cryptocurrency market has experienced explosive growth, with over 16,000 cryptocurrencies currently in existence, as reported by the European Central Bank (ECB) in 2022. This growth shows no signs of slowing, with the ECB estimating that around 10 new cryptocurrencies are launched daily. Leading industrial firms are investing heavily in blockchain technology to enhance their product portfolios, and crypto technology is poised to transform the way businesses use online applications (Ragnedda & Destefanis, 2019).

Cryptocurrency refers to a type of digital asset that utilizes distributed ledger, or blockchain, technology to facilitate secure transactions (Härdle, Harvey & Reule, 2020). Essentially, cryptocurrencies facilitate peer-to-peer transactions through online systems, thereby eliminating intermediaries such as traditional financial institutions or central banks (Hajj & Farran, 2024). A longstanding debate among scholars (Danielsson, 2018, 2019, 2021; Danielsson & Macrae, 2022; Krugman, 2018; Munoz & Frenkel, 2021) has centered on whether cryptocurrencies, particularly Bitcoin, constitute a form of money. The consensus among these experts is that cryptocurrencies do not meet the traditional criteria of money. A key reason for this conclusion is that Bitcoin and other cryptocurrencies are not widely accepted as a medium of exchange in everyday transactions (Roth, 2024). For instance, they cannot be readily used for purchases on popular online retail platforms, such as Amazon, or in physical stores, including drugstores, gas stations, and pharmacies (Krugman, 2018). This limited acceptance undermines their ability to function as a reliable means of exchange, a fundamental characteristic of money.

Cryptocurrencies leverage blockchain technology, operating on decentralized networks that utilize a distributed ledger enforced by a network of computers (Hayes, 2024). This decentralized architecture allows cryptocurrencies to function independently of central authorities, theoretically

shielding them from government interference and manipulation. The emergence of cryptocurrencies and blockchain technology has been hailed as a significant milestone in the quest for decentralized financial systems (Kayani & Hasan, 2024). Blockchain technology and cryptocurrencies ensure data privacy and security through complex permission systems, which operate without central authority intervention, attracting investors seeking secure transactions (Kayani & Hasan, 2024). Recent efforts have focused on regulating blockchain transactions, primarily outside government-imposed rules, aiming to enhance consumer trust in blockchain-based transactions rather than controlling their form or content (Kayani & Hasan, 2024).

Cryptocurrencies are designed to facilitate payments and transmit value across a decentralized network, essentially functioning as digital money (Hayes, 2024). Unlike traditional currencies, cryptocurrencies lack inherent or legislated value, deriving their worth from market demand and what individuals are willing to pay for them (Treiblmaier, 2022). The cryptocurrency landscape is vast, with thousands of options available. Countries like the United Kingdom and the United States are at the forefront of this financial revolution, boasting well-developed financial ecosystems, legal frameworks, and technical infrastructures (Kayani & Hasan, 2024). Some notable cryptocurrencies include Bitcoin (founded in 2009), Ethereum (developed in 2015), Litecoin (a cryptocurrency similar to Bitcoin but with faster payment processing), and Ripple (a distributed ledger system founded in 2012) (Aggarwal & Kumar, 2021). Cryptocurrencies other than Bitcoin are collectively referred to as "altcoins," distinguishing them from the pioneering cryptocurrency (Gómez-Martínez & Medrano-Garcia, 2025).

The evolving cryptocurrency landscape has given rise to innovative financial instruments, including cryptocurrency futures. These contracts enable investors to speculate on the future price of a cryptocurrency without actually owning it (Bajpai, 2024). By agreeing to exchange a cryptocurrency's fiat value at a predetermined price on a specific date, investors can gain exposure to cryptocurrencies while managing risk. Cryptocurrency futures offer an effective hedge against inflation expectations and potentially mitigate idiosyncratic market risks, provided traders can navigate the accompanying uncertainty (Liu & Valcarcel, 2024). Another notable development is the emergence of exchange-traded funds (ETFs), particularly those related to Bitcoin. These funds track the value of Bitcoin and trade on traditional market exchanges, rather than cryptocurrency exchanges (Chen, 2024). As defined by Chen (2024), an ETF is an investment fund designed to track the price of an underlying asset or index, providing investors with a new avenue for engaging with cryptocurrencies.

The widespread adoption of cryptocurrency is poised to revolutionize a broad spectrum of products and significantly impact the global digital landscape (Caliskan, 2020; Agrrawal & Waggle, 2024). However, this integration also raises a host of challenges and risks that must be carefully considered. The potential societal implications of cryptocurrencies have sparked intense debate, with concerns mounting around their social, ethical, and political consequences (Manski & Bauwens, 2020). A key challenge lies in establishing effective governance and management frameworks for blockchain technologies, as both the public and private sectors struggle to define suitable approaches (Tekobbe & McKnight, 2016).

The rise of cryptocurrencies has sparked intense debate about their impact on macroeconomic stability, particularly to monetary, fiscal, and financial stability (Bajaj et al., 2022). As cryptocurrencies continue to transform the global financial landscape, their potential to influence key macroeconomic dimensions has become a pressing concern, with far-reaching implications for economic growth and stability. Some scholars (El Hajj & Frran, 2024; Gowda & Chakravorty, 2021) argue that cryptocurrencies offer a decentralized, efficient, and secure means of exchange with the potential to promote financial inclusion, facilitate cross-border transactions, and stimulate economic growth. Conversely, critics (Allen, 2022; Kochergin, 2022). contend that cryptocurrencies pose significant risks to financial stability, including market volatility, regulatory arbitrage, and financial crime. As the use of cryptocurrencies continues to grow, it is essential to critically examine the impact of their integration into economic systems on economic growth and financial systems. This study aims to contribute to the ongoing debate by providing a comprehensive analysis of the realities of cryptocurrency integration on economic growth and stability. Through a systematic review of existing literature, this research aims to distill empirical evidence from around the world on the impact of cryptocurrencies on economic growth and financial stability, providing insights for policymakers, regulators, and industry stakeholders navigating the challenges and opportunities presented by cryptocurrencies. The study aimed to address the following research question: What is the impact of cryptocurrency integration on economic development and stability? The research paper is organized in accordance with the PRISMA guideline, comprising five key sections: introduction, methods, findings, discussion, and conclusions.

2. Methodology

2.1. Research design

To achieve the objectives of the current research, the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) methodology was employed to search, screen and choose articles for the study. The primary strength of the PRISMA methodology is its ability to consider research articles that are relevant and of high quality. The researchers used the University of North Carolina's ten-step framework for conducting PRISMA systematic reviews. The University of North Carolina's ten-step framework for conducting PRISMA are as follows: (1) preparation; (2) doing a database search; (3) removing all duplicates; (4) records screening (title/abstract Screening); (5) identifying records excluded (title/abstract screening); (6) identifying reports sought for retrieval; (7) identifying reports not retrieved; (8) assessing reports for eligibility; (9) identifying reports for exclusion and (10) identifying reports to be included in the studies.

2.2. Preparation

According to the University of California (2020), the preparation stage involves accessing PRISMA tools, such as the checklist and flow diagram, to record the number of documents searched, screened, and excluded. The authors of this study utilized PRISMA documents, including the PRISMA checklist and flow chart, to ensure a systematic and transparent approach to document search and screening.

2.3. Database search

This step involves conducting a database-specific search using predetermined search terms, which may span multiple databases. To ensure transparency, it is essential to document the number of databases searched and the yield of documents from each. In this study, Scopus was the primary database searched, and the retrieved documents informed the development of this research paper.

2.4. Removing duplicates

To prevent duplication, a crucial step involves removing duplicate articles that appear multiple times in the search results. Following this, the number of removed duplicates should be documented in the PRISMA template. In this study, no duplicates were identified, allowing the authors to proceed with screening articles based on additional criteria.

2.5. Records screening

The subsequent step involves documenting the number of articles to be screened, which is calculated by subtracting the number of duplicates removed from the total number of records identified. To ensure transparency and accountability, the authors of this study carefully tracked and recorded the documents screened, noting the number of documents that met the inclusion and exclusion criteria.

2.6. Records excluded

After screening titles and abstracts, the researchers distinguished between articles that contributed to answering the research question and those that did not. The latter were excluded, and their number was documented in the PRISMA flow chart's 'Records excluded' box. This study carefully captured records excluded after the abstract screening.

2.7. Identifying reports sought for retrieval

This step determines the number of articles to be retrieved for full-text screening. To calculate this, subtract the number of excluded records (Step 5) from the total number of records screened (Step 4), yielding the number of articles to be retrieved.

2.8. Identifying reports not retrieved

At this stage, the researcher records the number of articles for which full-text access is unavailable. This may be due to database limitations or other restrictions. In this case, the researchers were able to retrieve all necessary articles.

2.9. Assessing reports for eligibility

This stage involves calculating the number of reports that were successfully retrieved (Step 6 minus Step 7) and reviewing their full text to assess eligibility for inclusion in the systematic review. In this study, this step was meticulously executed to ensure the transparency and reliability of the findings.

2.10. Identifying reports for exclusion

After completing the full-text screening, authors should record the total number of excluded articles in the 'Reports excluded' box of the PRISMA template, providing reasons for exclusion and the number of records excluded for each reason. This process was carefully executed in this study, with the outcomes presented in Figure 1.

2.11. Included studies

The final step involves calculating the number of studies included in the review by subtracting the records excluded during the full-text eligibility review (Step 9) from the total number of articles reviewed for eligibility (Step 8). This number should be entered in the 'Studies included in review' box, as shown in Figure 1, which may also include grey literature search results. This stage concludes the PRISMA search and screening process, and the resulting documents will serve as the basis for the research paper.

3. Search strategy

To investigate the impact of cryptocurrencies on economic development, growth, and stability, researchers conducted a comprehensive search of the Scopus database using specific keywords and Boolean operators (AND/OR). The search terms employed were TITLE-ABS-KEY: cryptocurrencies AND ("economic development" OR "economic growth" OR "economic stability" OR "financial stability" OR “financial risks” OR "financial inclusion"). This search process resulted in the retrieval of 279 articles. To narrow the search results, the researchers limited the publication period to 2010-2024, coinciding with the introduction of the first cryptocurrency in 2010. This resulted in 261 articles remaining. The timeframe helped to focus the search and avoid an overwhelming number of articles.

3.1. Inclusion and exclusion criteria

Following the comprehensive search of the Scopus database, the researchers employed a rigorous multi-stage filtering process to refine the search results and ensure the inclusion of relevant, high-quality studies. The initial filter was based on publication year, with only articles published between 2010 and 2024 considered. This timeframe was chosen to coincide with the emergence of cryptocurrencies, with 2010 marking the launch of Bitcoin, the first decentralized cryptocurrency. Notably, no relevant articles were found between 2010 and 2013, likely due to the nascent stage of cryptocurrency research during this period. Subsequent filters were applied to the subject area, considering only articles from Economics, Econometrics and Finance, and Business, Management, and Accounting. This narrow focus was justified by the study's emphasis on the economic and financial implications of cryptocurrencies. The researchers sought to explore the intersection of cryptocurrencies and traditional economic systems, making these subject areas most relevant. The document type was also filtered, with only empirical research articles included. This decision was motivated by the need for concrete, data-driven insights into the impact of cryptocurrencies on economic development and financial stability. Empirical articles provided valuable evidence from real-world contexts, enabling the researchers to draw more informed conclusions. In contrast, book chapters, conference papers, and review papers were excluded due to their often theoretical or descriptive nature, which did not align with the study's empirical focus. Further filters were applied

to the publication stage, with only finalized articles considered. This ensured that the included studies had undergone rigorous peer review and editing, enhancing their validity and reliability. Keywords were also carefully selected, with specific terms excluded to maintain the study's focus on economic development and financial stability. Finally, only articles published in English were included in the study, as this allowed for a consistent and accurate analysis of the findings.

3.2. Data extraction

Upon completing the filtering process, the researchers meticulously selected the remaining documents and imported them into a Microsoft Excel sheet via CSV. To ensure a systematic and efficient extraction process, the researchers first identified the essential aspects to be extracted from each document. These included the document title, author names, number of citations, year of publication, abstract, and keywords. This deliberate selection of variables enabled the researchers to capture the most relevant information from each article. The electronic extraction process was reliable and efficient, allowing for the seamless importation of the selected articles into the Excel sheet. To further refine the selection of articles, the researchers employed a coding system to evaluate the relevance of each article. Articles deemed highly relevant were assigned a code of '1', while irrelevant articles received a code of '0'. Articles that required in-depth review or full-text examination were designated with a '2' code. Upon further analysis, these articles were found to be unrelated to the study and failed to address the research questions. This rigorous screening process enabled the researchers to narrow down the selection to the most pertinent articles, which were then carried forward to the next round of analysis. To ensure transparency and accountability in the article selection process, the researchers scheduled a meeting to provide justifications for excluding certain articles. This meeting served as a quality control measure, enabling the researchers to critically evaluate the decision-making process and ensure that the selected articles align with the study's objectives. By adopting this meticulous and systematic approach, the researchers aimed to enhance the reliability and validity of the results, ultimately contributing to a more robust and credible study.

3.3. Data reliability

To guarantee the reliability and consistency of the data used in this study, the researchers employed Cohen's Kappa, a statistical measure of inter-rater agreement, to evaluate the coded data. To calculate Cohen's Kappa, codes 0 and 1 were used for all reports that reached the final screening stage. Additionally, reports previously coded as '2' was finally coded with a '0' and included in the calculation to assess interrater reliability. Cohen's Kappa is a widely accepted metric that assesses the level of concordance between two or more raters, providing a quantitative measure of the agreement between independent coders (Li et al., 2023). Specifically, Cohen's kappa (κ) is recommended for nominal data as a reliable measure of inter-coder agreement, enabling researchers to evaluate the consistency of their coding decisions (Rau & Shih, 2021). To interpret the Cohen's Kappa coefficient, this study relied on the framework established by Li, Gao, and Yu (2023), which provides a clear and structured approach to evaluating inter-rater agreement. According to this framework, a Cohen's Kappa coefficient of less than 0.2 indicates poor agreement, while a coefficient between 0.2 and 0.4 suggests fair agreement. A moderate level of agreement is reflected in coefficients ranging from 0.41 to 0.6, whereas coefficients between 0.61 and 0.8 indicate substantial agreement. Finally, coefficients exceeding 0.8 signify almost perfect agreement. Notably, the calculated Kappa coefficient for this study was 0.912, surpassing the threshold for almost perfect agreement. This exceptionally high coefficient indicates a remarkable level of consistency and reliability in the coding decisions, providing strong evidence for the trustworthiness of the data used in this study.

4. Results

Figure 1 below illustrates the structured methodology employed in this study, which adheres to the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) framework. This rigorous framework ensured a systematic and transparent approach to searching, selecting, and screening relevant articles, ultimately yielding a reproducible and reliable review process. By meticulously following the PRISMA guidelines, this study aimed to minimize bias and enhance the validity of the results. Each stage of the process, from the initial literature search to the final article selection, was conducted with precision and attention to detail, guaranteeing a comprehensive and unbiased review of existing research on the topic.

Figure 1: The PRISMA process adopted in screening literature for analysis

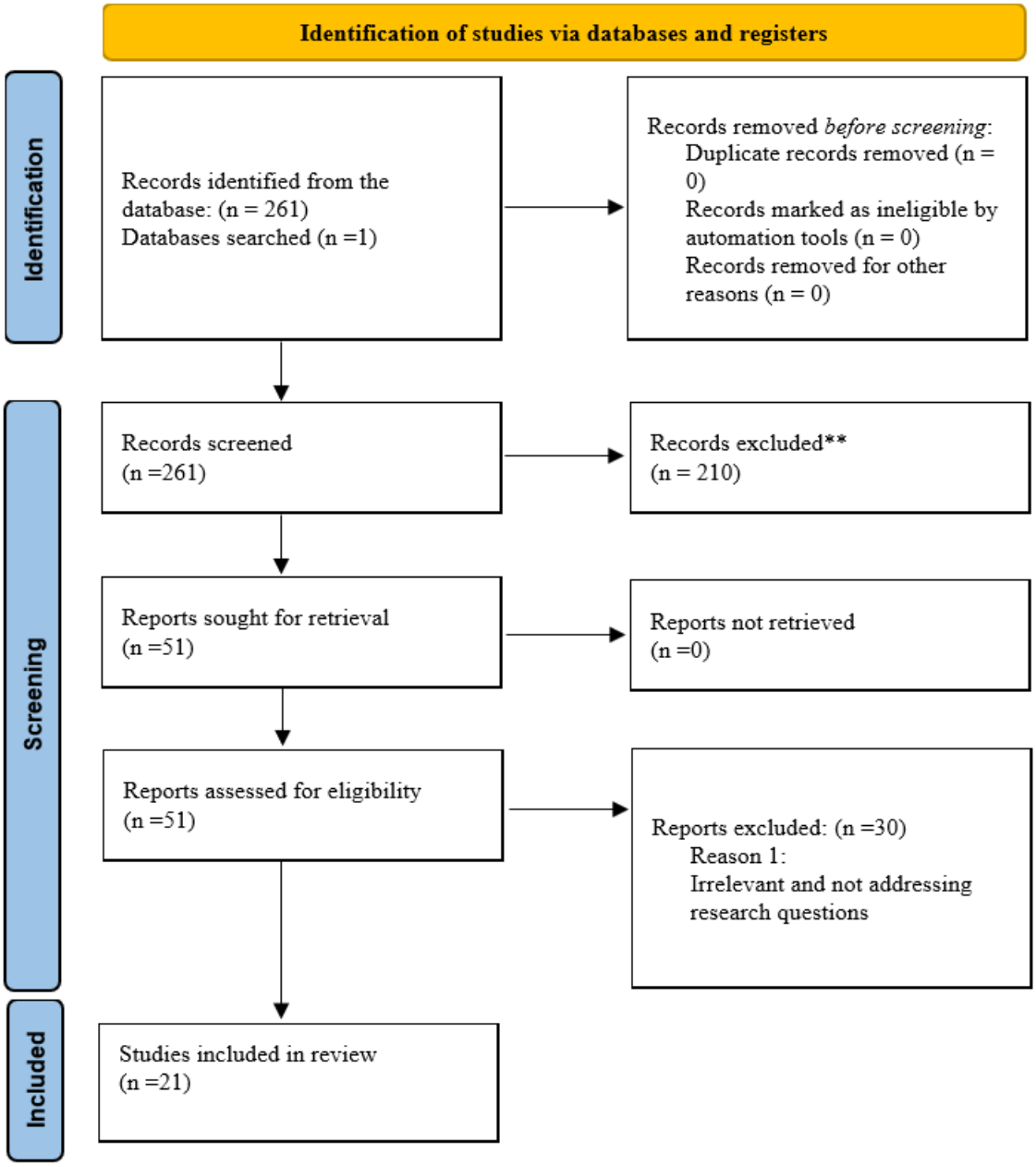
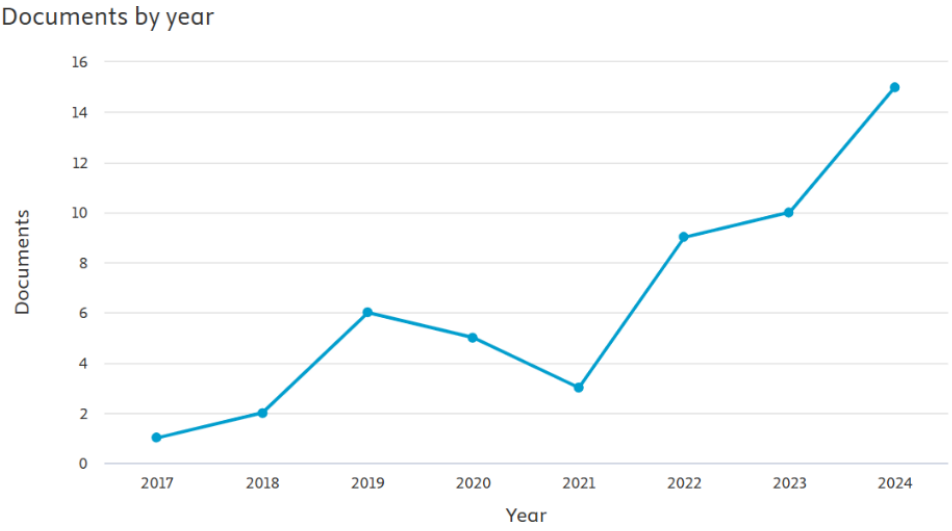


Figure 1 presents a detailed overview of the systematic search and screening process employed in this study. Initially, 261 papers were retrieved from the Scopus database. A preliminary screening for duplicates yielded zero results, allowing all 261 documents to proceed to the next stage. The first screening round applied a publication year filter, considering only studies published between 2010 and 2025. However, this filter did not eliminate any documents, as the majority of studies were published within this timeframe. The second screening stage focused on the subject area, resulting in 162 research documents being retained and 99 being excluded. The third stage filtered documents by type, selecting only articles and excluding conference papers, review articles, and book chapters. This process eliminated 41 documents, leaving 121 articles for further screening. The subsequent filtering stages considered the publication stage, language, and accessibility. The publication stage filter eliminated 11 articles, leaving 110 for further scrutiny. The language filter, which required articles to be published in English, excluded 10 articles, resulting in 100 papers. Finally, the accessibility filter, which prioritized open-access articles, eliminated 49 research papers, leaving 51 articles for abstract analysis. The abstract analysis led to the exclusion of 30 research papers, ultimately yielding 21 articles that met the study's inclusion criteria. It is important to acknowledge that, despite being informed by 21 research articles, this study's findings may not be comprehensive due to the limited number of papers reviewed.

Publications by year

Figure 2 shows the number of articles published between 2010 and 2025 inclusive

Figure 2: Documents published by year

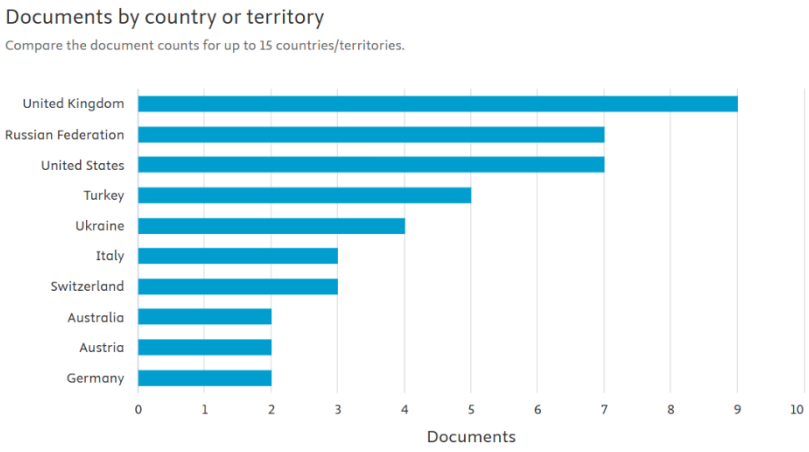


The line graph in Figure 2 above illustrates the trend in publications that met the study's inclusion criteria over time. Notably, no publications from 2010 to 2016 survived the screening process. The first publication emerged in 2017, followed by a gradual increase to 2 publications in 2018. A significant surge in publications occurred in 2019, with 6 publications meeting the inclusion criteria. However, a temporary decline in publications was observed between 2019 and 2021, with 5 publications in 2020 and 3 publications in 2021. This downward trend was short-lived, as a pronounced increase in publications occurred between 2021 and 2024. Specifically, 2022 saw 9 publications, 2023 recorded 10 publications, and 2024 had 15 publications. It is worth noting that no publications were retrieved for 2025, likely because the search was conducted in early January, before journals had published their latest issues. The upward trend in publications from 2021 to 2024 is a clear indication that the relationship between cryptocurrencies and economic growth and stability is gaining increasing attention in academic discourse.

Publications by country or territory

Figure 3 shows the number of publications against a country or a territory.

Figure 3: Publication by country or territory



The bar graph in Figure 3 reveals a striking dominance of developed nations in research on the impact of cryptocurrencies on economic growth and stability. A closer examination of the graph shows that the United Kingdom emerges as the clear leader, with a notable 9 publications. This suggests that UK-based researchers are at the forefront of exploring the complex relationships

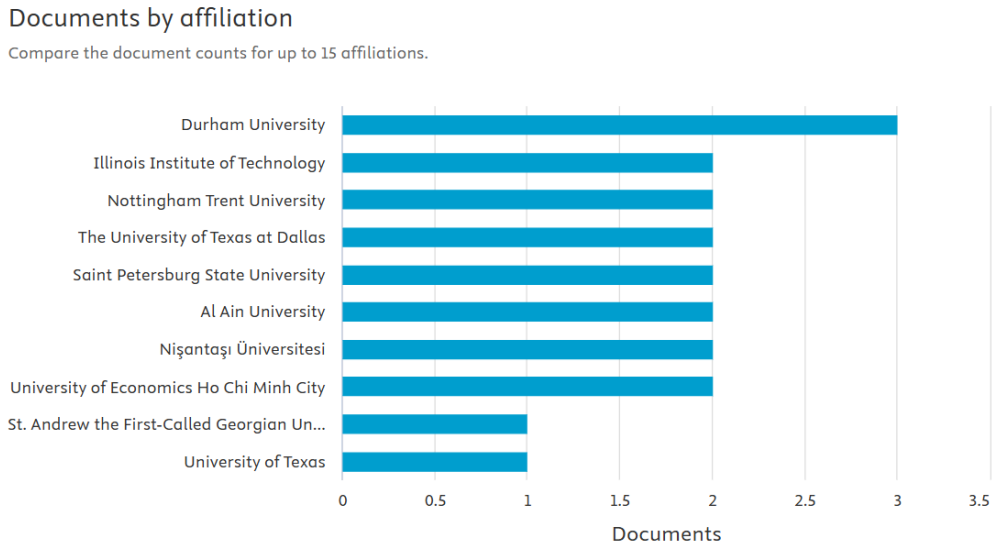
between cryptocurrencies and economic development. The Russian Federation and the United States of America follow closely, with 7 publications each. This is not surprising, given the significant economic influence and technological advancements of these nations. Turkey secures the third position with 5 publications, while Ukraine ranks fourth with 4 publications. The presence of Italy and Switzerland in the list, each with 3 publications, underscores the growing interest in cryptocurrency research among European nations.

Furthermore, Germany, Austria, and Australia each contribute 2 publications to the pool, demonstrating a nascent yet notable interest in this field. The dominance of developed nations in this research area can be attributed to their well-established academic institutions, robust research infrastructure, and ample funding opportunities. Nonetheless, this trend highlights the need for increased research participation from developing nations to provide a more comprehensive understanding of the global implications of cryptocurrencies on economic growth and stability.

Publications by affiliation

Figure 4 illustrates the distribution of publications by institutional affiliation, providing insight into the research output of various academic institutions in the field of cryptocurrency and economic growth.

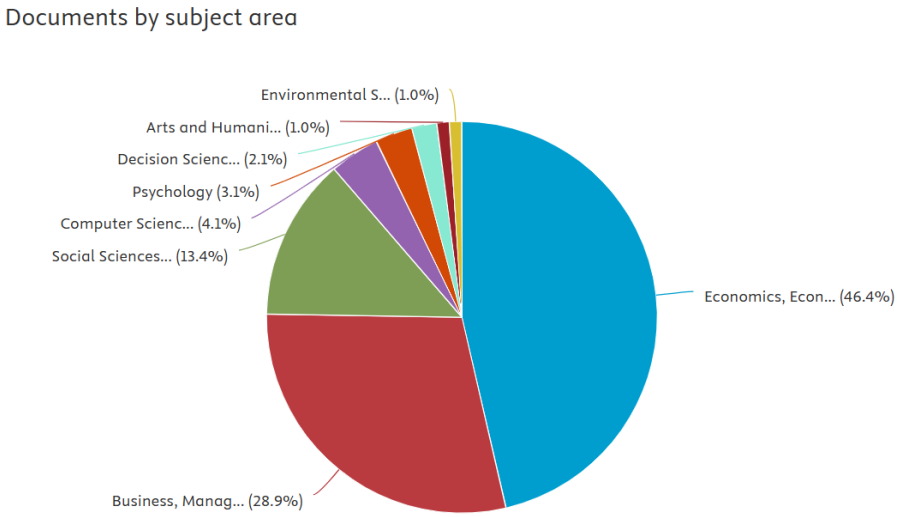
Figure 4: Publications by affiliation



The bar graph and accompanying table collectively indicate that Durham University stands out as the leading institution in terms of research output on the intersection of cryptocurrencies, economic growth, and stability, with a notable 3 publications. A cluster of institutions follows closely, each contributing 2 publications to the body of research on this topic. These institutions include the Illinois Institute of Technology, Nottingham Trent University, the University of Texas at Dallas, Saint Petersburg State University, Al Ain University, Nisantasi University, and the University of Economics Ho Chi Minh City. This distribution highlights the global nature of research on cryptocurrencies and their economic implications, with institutions from diverse regions making significant contributions to the field.

Publications by subject area

Figure 5: Publications by subject area



The Pie Chart in Figure 5 provides a clear visual representation of the disciplinary distribution of the articles that met the inclusion criteria. A significant proportion, 45 articles (46.4%), originated from the Economics, Econometrics, and Finance fields, underscoring the dominant role of economic perspectives in researching the impact of cryptocurrencies. The Business, Management, and Accounting field accounted for the second-largest share, with 28 articles (28.9%) contributing to the study. The Social Sciences field made a notable contribution, with 13 articles (13.3%) exploring the social implications of cryptocurrencies. A smaller percentage of research papers were drawn from diverse fields, including Computer Science, Psychology, Decision Sciences, Arts and Humanities, and Environmental Sciences. This interdisciplinary representation highlights the multifaceted nature of cryptocurrency research, which intersects with various disciplines to provide a comprehensive understanding of its far-reaching implications.

Results of a systematic review on the impact of cryptocurrencies on economic growth and stability

Table 1 shows the findings of a systematic review carried out to determine the impact of cryptocurrencies on economic growth and stability. Table 1 show the author name, date of publications, title of article, aims/purpose of the study, citations of the study and the key findings of the study.

Table 1: Data extraction instrument

Author, date	Title of article	Aims/purpose	Citations	Key findings
Ahmed H. (2024).	Security tokens, ecosystems and financial inclusion: Islamic perspectives	To assess the role of Shariah-compliant crypto tokens and supporting ecosystems in providing additional sources of financing for small and medium enterprises (SMEs)	0	Shariah-compliant crypto tokens can be used by SMEs to raise funds quickly and efficiently on crypto exchanges thereby boosting production in the economy
Lukianchuk R.; Grebeniuk M.; Cherniak A. (2017).	Current trends, concerns and peculiarities of the turnover of cryptocurrency	To assess the role of cryptocurrencies in fostering economic growth and the challenges resulting from their use	02	The use of cryptocurrencies is a promising way to maintain economic development by applying modern accounting and information technologies. International experience clearly demonstrates the importance and role of cryptocurrencies in the activities of relating to the financing of terrorism and human trafficking.
Sukomardojo, T., Pamikatsih, M., Arpianto, Y., Nuraini, A., & Fatmawati, E. (2023).	Cryptocurrency and Macro-Economic Stability: Impacts and Regulations	To determine the impact of Cryptocurrency on macroeconomics, especially in terms of inflation, exchange	03	The results of the analysis show that cryptocurrencies can have a significant impact on macroeconomic stability, both positive and negative, depending on factors such as widespread

		rates, and other relevant aspects.		use, price volatility, and role in the global financial system.
Kochergin D.; Andryushin S.; Sheshukova E. (2024).	The virtual currency market and monetary policy: Financial risk, regulations, and target mandates	The goals of the study are to classify virtual currencies, identify the regulatory issues, and outline a scenario adjustment for central banks to ensure price stability and financial stability through monetary policy.	0	The risks from virtual currencies include the risk of financing terrorism, illegal activities and money laundering; the risk of tax evasion; the risk of violation of price, financial stability and monetary sovereignty; the risk of reducing the social welfare and consumer protection.
Othman A.H.A.; Musa Alhabshi S.; Kassim S.; Abdullah A.; Haron R. (2020).	The impact of monetary systems on income inequity and wealth distribution: A case study of cryptocurrencies, fiat money and gold standard	To investigate empirically the effects of cryptocurrencies, the gold standard and traditional fiat money on global income inequality	17	The findings indicated that cryptocurrency and gold standard monetary systems contributed significantly to reducing global inequality of income and wealth distribution.
Asiri A.; Alnemer M.; Bhatti M.I. (2020).	Interconnectedness of Cryptocurrency Uncertainty Indices with Returns and Volatility in Financial Assets during COVID-19	To investigates the dynamic relationship between cryptocurrency uncertainty indices and the movements in returns and volatility across spectrum of financial assets, comprising precious metals, green bonds, and soft commodities.	02	Cryptocurrency uncertainty indices emerge as influential transmitters of shocks to other financial asset categories and it significantly escalates throughout the crisis period. This research sheds light on the impact of cryptocurrency uncertainty on the broader financial market, particularly during periods of crisis.
Kayani U.; Hasan F. (2024).	Unveiling Cryptocurrency Impact on Financial Markets and Traditional Banking Systems: Lessons for Sustainable Blockchain and Interdisciplinary Collaborations	To examine how cryptocurrencies affect financial markets and conventional banking systems	13	Bitcoin and Ethereum affect volatility, demonstrating their ability to cause far-reaching consequences for the banking sector, traditional financial systems, regulatory frameworks, and the global economy as a whole. Cryptocurrencies are causing volatility in the financial sector
El Hajj, M., & Farran, I. (2024).	The Cryptocurrencies in Emerging Markets: Enhancing Financial Inclusion and Economic Empowerment	To discuss how adopting cryptocurrencies affects financial inclusion in developing economies.	05	The results indicated that cryptocurrency adoption significantly and positively influenced financial inclusion, trust in financial institutions.
Felix (2024)	What is the impact of cryptocurrencies on financial markets and global trade?	It discuss the direct and indirect impact of cryptocurrencies on financial markets and global trade.	01	The study concluded that the overall direct impact of cryptocurrencies on financial markets and global trade would most likely be negative. This is foremost related to the economic inefficiency of cryptocurrencies with regard to financial stability.
Panigrahi, S. (2023).	Are Cryptocurrencies a Threat to Financial Stability and Economic Growth of India? Evidence From the Cointegration Approach	To investigate whether the cryptocurrency market affects the financial stability and economic growth of India	04	The study results demonstrated that an increase in cryptocurrency investments will affect the financial stability of India significantly. Each 1% increase in the cryptocurrency would reduce the financial stability by 5% approximately.
Sadiq M.; Aysan A.F.; Kayani U.N. (2023).	Digital currency and blockchain security in accelerating financial stability: A mediating role of credit supply	To examine how blockchain and digital currency have affected the supply of credit and financial stability.	08	The study finds that the use of various digital currencies quickly transforms business. The study shows that most industries do not require central banks and, instead, concentrate on modern digital currency and blockchain systems for monetary transfers.
Miśkiewicz, R., Matan, K., & Karnowski, J. (2022).	The Role of Crypto Trading in the Economy, Renewable Energy Consumption and Ecological Degradation	To analyse the connections between crypto trading, economic development of the country, renewable energy	107	The findings concluded that the increasing crypto trading led to enhanced GDP, real gross fixed capital formation, and globalization.

		consumption, and environmental degradation.		
Yang H.; Malik A. (2024).	Optimal Market-Neutral Multivariate Pair Trading on the Cryptocurrency Platform	To propose a novel arbitrage approach in multivariate pair trading, termed the Optimal Trading Technique (OTT).	0	Findings reveal that cryptocurrencies carry significant financial risks.
Lu, C. (2022).	Cryptocurrency and Digital Assets: A Positive Tool for Economic Growth in Developing Countries	To explore whether or not cryptocurrency can propel economic growth in developing countries.	11	Cryptocurrencies are a positive tool for growth in developing countries, provided that increasing adoption will improve the financial literacy necessary to access the digital resources.
Abdelkaoui, F., Sidaoui, A., Nasser, F., & Bouzidi, M. (2024).	Cryptocurrency and Macroeconomic Dynamics: Case of 10 Asian Economies	To investigates the impact of cryptocurrency on economic growth in 10 countries across Asia during past period 2013–2020.	01	Economic growth was influenced negatively by the cryptocurrency 'Bitcoin'. The study concluded that this instrument leads to an increase in the inflation rate in a country according to the quantity theory of money and leads to a disorder in the monetary policy of a country.
Obisesan, G.O., Dada, S.O., Ajayi, I.E. (2024).	The impact of crypto currency on economic growth of African countries	To assess the impact of crypto currency on economic growth in Africa	00	Bitcoins exert negative significant impact economic growth of developing African counties; Ethereum exert positive and significant impact on economic growth of developing African countries and Binance coin exert significant negative impact on Africa economic growth of developing African countries
Sherifi I.; Lebid O.; Goncharova O.; Drobyazko S.; Sidko I. (2024).	Financial Risks of Business Management of Cryptocurrency Operations	To assess the financial risks of cryptocurrencies	01	Bitcoin is an asset with high risks, and a significant part of its volatility can be explained by the speculative component.
Baş T.; Özaydln O.; Dura Y.C. (2023).	Does Bitcoin Affect Term Deposits? Evidence from MINT Countries	To examine the relationship between Bitcoin volume and term deposit investments in Mexico, Indonesia, Nigeria, and Turkey (MINT) from 2016 to 2021.	00	Findings indicate a negative association between Bitcoin volume and term deposits in all the MINT countries, except Mexico. This suggests that individual investors in economically and financially unstable nations are increasingly turning to Bitcoin as an alternative investment option.
Guo, D.; Zhang, H. (2024).	Cryptocurrency and Financial Stability	To assess the impact of cryptocurrencies on financial stability	02	The key finding is that Bitcoin has an effect of defiatization in the global financial market. Therefore, cryptocurrency not only decentralizes the role of commercial banks as a medium of payment but also decentralizes the role of central banks as a monetary policymaker.
Bruhn P.; Ernst D. (2022).	Assessing the Risk Characteristics of the Cryptocurrency Market: A GARCH-EVT-Copula Approach	To analyse the financial risk characteristics of individual cryptocurrencies and of a broad cryptocurrency market portfolio.	09	Empirical analysis indicates that all examined cryptocurrencies show high volatility in their price movements, and this can have a significant impact on the economy
Tomić, N., Todorović, V., & Čakajac, B. (2020)	Potential effects of cryptocurrencies on monetary policy	To determine the ability of central banks to conduct monetary policy successfully in conditions of widespread use of cryptocurrencies in payment transactions.	42	It is concluded that, cryptocurrencies do not have the capacity to endanger the traditional monetary system at the current level.

Source: Scopus database

Impact of cryptocurrencies on economic growth and economic stability

A thorough examination of existing literature reveals a nuanced understanding of the impact of cryptocurrencies on economic growth and stability, with varied findings emerging from different studies. As illustrated in Table 1 above, a significant proportion of research articles (N = 11, or 52.4%) suggest that cryptocurrencies have a detrimental impact on economic growth and stability. However, other studies present a more optimistic outlook. For instance, Ahmed (2024) discovered that Shariah-compliant crypto tokens could serve as a vital funding mechanism for small and medium-sized enterprises (SMEs), enabling them to raise capital efficiently on crypto exchanges. This, in turn, can stimulate production and contribute to economic growth. The financial inclusion of SMEs is a rapidly emerging development, as it can facilitate access to financing, boost production, and ultimately enhance a country's GDP. These findings are corroborated by Othman et al. (2020), who argued that cryptocurrency and gold standard monetary systems can play a significant role in reducing global income inequality and wealth disparities. By providing SMEs with access to financing through cryptocurrencies, these systems can help distribute wealth more evenly, benefiting marginalized groups and promoting greater economic equality. This highlights the potential of cryptocurrencies to drive positive economic outcomes, particularly in regions where traditional financing options may be limited.

A comprehensive analysis of the retrieved papers reveals a predominant consensus that cryptocurrencies have a detrimental impact on economic growth and stability. A staggering 11 papers (52.4%) agree that cryptocurrencies have a negative impact on economic growth and stability, highlighting the pervasive concerns surrounding the economic implications of cryptocurrencies. As shown in Table 1, a subset of authors (14.3%), including Lukianchuk, Grebeniuk and Cherniak (2017), Sukomardojo (2023) and Kayani and Hasan (2024), express ambivalent views on the impact of cryptocurrency integration on economic development and stability. While acknowledging the potential benefits, these scholars also contend that cryptocurrencies have detrimental effects on economic development and stability, highlighting the complexity of this issue. In stark contrast, only 1 paper (4.76%) suggested that cryptocurrencies do not pose a significant threat to traditional monetary systems and, therefore, do not substantially impact economic growth and financial stability. This outlier perspective underscores the minority view that cryptocurrencies can coexist with traditional financial systems without exerting a deleterious influence. The preponderance of evidence suggesting that cryptocurrencies have a negative impact on economic growth and stability can be attributed to several factors. The unregulated nature of cryptocurrencies, coupled with their inherent volatility, creates an environment conducive to economic instability. Furthermore, the lack of taxation mechanisms for cryptocurrency investments can lead to government revenue losses, ultimately undermining economic growth. These findings collectively underscore the need for prudent regulatory frameworks and taxation policies to mitigate the adverse economic impacts of cryptocurrencies.

5. Discussion

Impact of cryptocurrencies on economic growth and stability

Money laundering, human trafficking, and financing of transnational criminal groups

A growing body of research highlights the alarming connection between cryptocurrencies and illicit activities, including terrorism financing, human trafficking, and money laundering. Lukianchuk, Grebeniuk, and Cherniak (2017) pioneered this line of inquiry, revealing that cryptocurrencies serve as a conduit for nefarious activities. Subsequent studies have corroborated these findings. Fletcher, Larkin and Corbet (2021) demonstrated how criminals and terrorists exploit Bitcoin's peer-to-peer architecture and pseudo-anonymity to facilitate extensive terrorist financing and money laundering schemes. Similarly, Sanz-Bas et al. (2021) cautioned that despite their potential economic benefits, cryptocurrencies pose significant risks and are vulnerable to abuse. Specifically, they noted that individuals and criminal organizations have leveraged cryptocurrencies to carry out fraudulent activities, including money laundering. Recent research by Hamilton and Leuprecht (2024) has further underscored the gravity of this issue. Their study reveals that cryptocurrencies have become a key enabler of illicit activities by transnational criminal networks, including terrorism, drug trafficking, pornography, sanctions evasion and ransomware. Moreover, they warn that crypto-enabled cybercrimes are increasing exponentially, posing a significant threat to economic stability, development and growth. Almeida and Gonçalves (2023) suggest that the cryptocurrency market is characterized by irrational investors who base their decisions on market sentiment. These characteristics could amplify the potential adverse effects of cryptocurrencies on financial stability.

Cryptocurrencies and regulatory challenges

According to Kayani (2024), cryptocurrencies pose a significant challenge to regulatory authorities, who struggle to monitor them effectively. Similarly, Frediani (2024) notes that the UK lacks specific regulations for crypto assets, although several initiatives are underway to establish a future regulatory framework. Despite this regulatory gap, some traditional financial services rules are being applied to crypto transactions. For instance, the Anti-Money Laundering and Counter-Terrorist Finance (AML/CTF) rule requires UK-based businesses that exchange or provide custody services for crypto assets to register with the Financial Conduct Authority (FCA) (Frediani, 2024). To address the risks and challenges associated with the crypto market, the UK has also publicly stated its intention to create a robust regulatory framework for crypto assets, aiming to protect consumers and the financial market.

In contrast, the US is reportedly lagging in implementing regulations for crypto assets. In the United States, the Securities and Exchange Commission (SEC) has classified certain crypto assets as securities under the Securities Act of 1933, subjecting them to SEC regulation (Hennelly, 2022). Conversely, digital assets that exhibit characteristics of commodities are regulated by the Commodity Futures Trading Commission (CFTC) under the Commodity Exchange Act (CEA) (Frediani, 2024; Guseva, 2021).

Frediani (2024) noted that the European Union currently relies on traditional financial system rules and regulations to govern cryptocurrencies. The Markets in Financial Instruments Directive framework (MiFID II) provides a regulatory foundation, encompassing both a directive (MiFID II) and a regulation (MiFIR), which was initially enacted in 2007 and later refined to address emerging financial technologies and challenges. MiFID II/MiFIR regulates crypto-assets that are deemed financial instruments, including transferable securities, money-market instruments, collective investment units, derivatives, and emissions allowances (Frediani, 2024). Additionally, the 5th Anti-Money Laundering Directive (AMLD5) addresses crypto assets, introducing new definitions such as "virtual currency" and "custodian wallet provider" (Lindeni & Shirazi, 2023). However, despite these regulatory efforts, a uniform approach to crypto-to-crypto transactions remains elusive among EU Member States (Frediani, 2024; Lindeni & Shirazi, 2023). Conversely, countries like China have implemented stringent regulations, effectively banning or restricting cryptocurrencies (Chen et al., 2022). Measures include prohibiting cryptocurrency trading, shutting down exchanges, and banning fundraising through initial coin offerings (ICOs). The primary objective of this approach is to curb excessive speculation and mitigate potential financial risks.

In December 2022, the Basel Committee on Banking Supervision (BCBS) released its Final Standards on the prudential treatment of crypto asset exposures (Bank for International Settlements, 2022). These standards establish requirements for banks' crypto-asset exposures under the Basel Framework's Pillars 1, 2, and 3. The Bank for International Settlements (2022) classified crypto assets into two groups. Group 1 crypto assets meet specific classification conditions, including tokenized traditional assets and crypto assets with effective stabilization mechanisms (Wong et al., 2024). These assets are subject to capital requirements based on risk weights, as outlined in the existing Basel Framework.

In contrast, Group 2 crypto assets fail to meet the classification conditions, posing higher risks and requiring a more conservative capital treatment. This poses challenges for regulatory authorities, who struggle to manage these assets effectively. According to Öztürk and Sülüngür (2021), the lack of supervision discourages risk-averse individuals and states from adopting cryptocurrencies. The International Monetary Fund (2022) notes that applying existing regulatory frameworks to crypto assets or developing new ones is challenging due to the rapidly evolving nature of the crypto market. Regulators face difficulties in acquiring the necessary talent and skills to keep pace with the crypto market, given limited resources and competing priorities (Duan et al., 2023). Moreover, monitoring crypto markets is complicated by the patchy nature of data and the challenges of tracking thousands of actors who may not be subject to traditional disclosure or reporting requirements (International Monetary Fund, 2022).

Cryptocurrencies and systemic risk

Studies have highlighted that cryptocurrency, while offering potential benefits to investors, is also accompanied by inherent systemic risks that can have broader implications for financial stability. Research by Asiri, Alnemer, and Bhatti (2020), as presented in Table 1, reveals that cryptocurrency uncertainty indices play a significant role in transmitting shocks to other financial asset categories, with their impact escalating substantially during crisis periods. This study sheds light on the profound influence of cryptocurrency uncertainty on the broader financial market, particularly during times of economic turmoil. The inherent volatility of cryptocurrencies generates systemic risks that permeate the financial infrastructure, posing significant challenges for individual investors and established financial institutions alike (Safarli & Safarli, 2024). To navigate this

unpredictable landscape, a strategic and adaptive approach is crucial, as cryptocurrency values fluctuate erratically (Safarli & Safarli, 2024). Traditional risk management mechanisms, which are effective for conventional financial instruments, may be inadequate in the face of cryptocurrencies' rapid and drastic price fluctuations (Safarli & Safarli, 2024). This volatility poses a potential threat to financial stability, necessitating a reevaluation of risk management frameworks by banks and other financial institutions (Safarli & Safarli, 2024). To address the challenges posed by cryptocurrency volatility, robust strategies must be developed to navigate the ever-changing market dynamics. This requires innovative risk management approaches that can effectively mitigate the systemic risks associated with cryptocurrencies and ensure financial stability.

A similar investigation by Pacelli et al. (2024) uncovered evidence of spillover effects between cryptocurrency and traditional financial markets, exposing a complex interplay of risk factors that transcend geographical boundaries and asset classes. Colombo and Yarovaya (2024) find that unsophisticated retail investors are more likely to invest in crypto due to its popularity and historical growth, which may increase systemic risks. According to a study by Panigrahi (2023), the volatility of cryptocurrencies poses a significant threat to the financial stability of the Indian economy. Specifically, the study revealed that a mere 1% increase in cryptocurrency investment would lead to a substantial 5% decline in financial stability, underscoring the potential systemic risks associated with cryptocurrency markets. These findings suggest that the interconnection of cryptocurrency and traditional financial markets may have far-reaching implications for national and global financial stability, regulatory policies, and risk management practices. Rahman et al. (2024) provide further support for these findings, noting that cryptocurrencies, despite their differences, pose systemic risks to traditional and regulated financial systems, which can, in turn, lead to economic instability. Collectively, these studies highlight the importance of recognizing the complex interrelationships between cryptocurrency and traditional financial markets, as well as the potential risks and implications for financial stability and regulatory frameworks.

Cryptocurrencies and its impact on inflation

The relationship between cryptocurrencies and inflation in the economy has been a topic of intense debate and scrutiny among investors, policymakers, and researchers, sparking discussions on potential correlations, risks, and implications. Recent research by Abdelkaoui, Sidaoui, Nasser, and Bouzidi (2024) suggests that Bitcoin has a detrimental impact on economic growth. According to their findings, the introduction of Bitcoin leads to an increase in inflation rates, which is consistent with the quantity theory of money. Furthermore, the study concludes that Bitcoin disrupts monetary policy, potentially undermining a country's economic stability. A study by Sukomardojo et al. (2023) similarly suggests that widespread adoption of cryptocurrencies for payments and investments could lead to fluctuations in their value, impacting the prices of goods and services. For instance, a sudden surge in cryptocurrency prices may encourage individuals to hoard rather than spend, slowing down the circulation of money and potentially influencing inflation rates. Conversely, a significant increase in cryptocurrency value could lead to increased holding, potentially exacerbating economic deflation. Liu and Tsyvinski (2018) provide additional insights, demonstrating that while Bitcoin responds to inflation shocks, it falls short of serving as a reliable hedge against inflation, unlike traditional safe-haven assets such as gold and Treasury bonds. However, these results are at odds with an earlier study by Zghidi and Abdelkafi (2019), which found that using Bitcoin can decrease inflation expectations in the medium and long term by 19-27%. The authors attribute this effect to the competitive pressure exerted by Bitcoin on traditional currencies, driving suppliers to adjust prices and quality to achieve an equilibrium that reflects consumer utility. Smales (2024) and Rodriguez and Colombo (2025) provide recent evidence suggesting that cryptocurrencies act as an inflation hedge only under specific conditions. These conflicting findings highlight the complexities surrounding the economic implications of cryptocurrencies and underscore the need for further research to fully understand their effects on inflation and price stability in an economy.

Disruption of Conventional Banking Paradigms

Recent studies have highlighted the profound impact of cryptocurrencies on the global financial market, particularly about the concept of defiatization. Guo and Zhang (2024) found that Bitcoin and other cryptocurrencies have a defiatization effect, which challenges the traditional roles of commercial and central banks. Specifically, cryptocurrencies decentralize the payment process, reducing the need for intermediaries and also diminishing the central bank's control over monetary policy. Furthermore, Sukomardojo et al. (2023) suggest that the expanding cryptocurrency market may siphon liquidity from traditional banking systems, potentially impacting monetary policy and banking stability. Beyond inflation and exchange rates, cryptocurrencies can also exert influence on interest rates, investments, and broader financial stability. These findings are corroborated by Girish and Painoli (2024), who observed that cryptocurrencies can eliminate the need for regulated

middlemen, thereby streamlining financial transactions. Similarly, Kumshe, Daneji, Dame, and Abubakar (2024) noted that cryptocurrencies pose a significant challenge to traditional banking paradigms by providing alternative mechanisms for transmitting and storing value. The emergence of cryptocurrencies has also instigated competitive pressure on conventional banks to innovate and adapt, as noted by Jingyi (2019). This pressure is likely to drive the development of new financial products and services, ultimately transforming the banking landscape. Collectively, these studies underscore the transformative potential of cryptocurrencies and their capacity to reshape the global financial system.

Lowing investment with financial institutions

The emergence of cryptocurrencies has been found to have a significant impact on investments by financial institutions. A recent study by Baş, Özaydln, and Dura (2023) unveiled a significant trend in the MINT countries (Mexico, Indonesia, Nigeria, and Turkey), where a negative correlation was found between Bitcoin trading volume and term deposits. This phenomenon was observed in all MINT countries except Mexico, implying that investors in economically and financially volatile nations are increasingly seeking alternative investment opportunities in Bitcoin. This shift in investor behavior suggests that cryptocurrencies are gaining traction as a hedge against economic uncertainty and traditional banking systems. Echoing these findings, Adela (2023) conducted a study in the UAE that revealed cryptocurrency capitalization has a negative long-term impact on bank deposits. The study's results showed that positive and negative asymmetric coefficients indicate a detrimental effect on bank deposits, underscoring the growing competition between traditional banking systems and cryptocurrencies. These findings are further reinforced by Jingyi (2019), who observed that the rise of cryptocurrencies has exerted significant competitive pressure on conventional banks. As investors increasingly turn to cryptocurrencies, traditional banks are facing a decline in investments, including savings and other financial products. This trend suggests that the emergence of cryptocurrencies is prompting a paradigm shift in the financial landscape, with far-reaching implications for traditional banking systems and the global economy.

Cryptocurrencies and Exchange Rates

Sukomardojo et al. (2023) argued that cryptocurrencies can influence national currency exchange rates. These findings align with the results of a study by Fahlander (2022), which suggests that increased crypto adoption has an effect of increasing exchange rate volatility in both high- and low-income countries. If there is an increase in interest and investment in a particular cryptocurrency, the national currency could weaken as investors turn to digital assets (Sukomardojo et al., 2023). This can reduce the competitiveness of exports and increase the cost of imports, affecting the country's trade balance. Conversely, if there is concern or nervousness in the cryptocurrency market, investors may return to more stable national currencies, strengthening their exchange rates.

6. Study implications

The findings of this study underscore the imperative need for policymakers worldwide to establish regulatory frameworks for overseeing the integration and adoption of cryptocurrencies within their jurisdictions. In the absence of such regulations, systemic risks are likely to arise, posing a threat to the stability of the global conventional financial system. Furthermore, well-crafted regulations will enable financial systems to mitigate potential inflationary pressures that may stem from the integration of cryptocurrencies. Regulatory authorities would be well-advised to consider the Bank for International Settlements' recommendations on crypto assets and establish capital requirements that adequately address risk exposures. Furthermore, existing rules and regulations governing traditional financial systems should be enhanced to mitigate the emerging threats posed by cryptocurrencies. In light of the rapid transformation of the financial sector driven by the emergence of cryptocurrencies, financial institutions need to navigate the complexities of digital currencies. A critical factor in this evolution is striking a balance between fostering innovation and adhering to regulatory frameworks.

As technological advancements propelled by cryptocurrencies continue to accelerate, traditional banks must adopt innovative solutions while addressing regulatory concerns. Achieving this equilibrium is crucial for ensuring the harmonious coexistence of traditional banking and the burgeoning cryptocurrency ecosystem. The success of this balance will determine the adaptability of traditional banks to the evolving financial landscape, where innovation and compliance converge to shape the future of financial systems. Moreover, the study's findings serve as a warning to financial institutions to develop and implement robust risk management strategies that can mitigate systemic risks associated with cryptocurrencies. To achieve this, institutions should invest in advanced and

effective digital risk management infrastructure, enabling them to manage and minimize potential risks proactively.

Furthermore, central banks can consider the implications of cryptocurrency integration on monetary policy, making adjustments as needed to maintain economic stability. Policymakers can also leverage cryptocurrency integration as a way of fostering financial inclusion expanding access to financial services for underserved populations. The findings of this study contribute to the existing theoretical knowledge on the impact of cryptocurrency integration on economic stability and development. This contribution enriches our understanding of the subject and its far-reaching implications for the economy as a whole. The study's findings can contribute to the development of new economic theories or models that incorporate the impact of cryptocurrency integration on economic development and stability.

Furthermore, this study serves as a crucial resource for society, highlighting the potential risks associated with the adoption of cryptocurrency. Through acknowledging these risks, investors can make informed decisions, thereby avoiding potential financial losses and protecting their wealth. Furthermore, the study's findings underscore the importance of implementing financial literacy programs that educate the public about the mechanics and risks associated with cryptocurrencies. Empowering society with this knowledge can help individuals make informed decisions about cryptocurrency investment and integration, ultimately promoting financial stability and well-being.

7. Conclusion

A comprehensive review of existing literature on the impact of cryptocurrency integration reveals a paradoxical relationship between cryptocurrencies and economic growth, development, and stability. While cryptocurrencies offer benefits to investors, the overwhelming majority of findings suggest that they negatively affect economic growth and stability, primarily due to their inherent volatility and potential to generate systemic risks. Furthermore, the study highlights the disruptive influence of cryptocurrencies on the banking sector, as traditional financial products face intense competition from these decentralized digital currencies. Challenges in regulatory oversight and management of cryptocurrencies create vulnerabilities in the financial system, potentially enabling illicit activities such as terrorism financing, money laundering, and human trafficking. While this study's findings are noteworthy, it is essential to acknowledge the limitation posed by the relatively small number of documents reviewed (21 research papers). The results may not be comprehensive, and a more extensive review of the literature may yield different outcomes. The field of cryptocurrency research is still emerging, and the scarcity of publications in this area presents a challenge. Future research should prioritize exploring the interplay between cryptocurrency markets and monetary policy, including the potential impact of cryptocurrencies on inflation and interest rates.

Additionally, investigating the effects of various regulatory frameworks on cryptocurrency markets and economic stability is crucial, as it will provide valuable insights for financial stakeholders on effective strategies for managing these markets. In conclusion, the financial risks associated with cryptocurrencies necessitate immediate global attention. Proactive regulations are crucial in strengthening financial systems, raising awareness among financial stakeholders and the broader public, and ultimately protecting economies from cryptocurrency market risks.

In addressing whether cryptocurrency integration is a 'blessing or a curse' for economic development and stability, this review suggests that while the allure of innovation and potential for financial inclusion presents a 'blessing' for some, the prevailing evidence points towards a significant 'curse' in the form of systemic risks, regulatory voids, and avenues for illicit finance that undermine sustainable economic progress. The path forward requires not outright rejection but vigilant, adaptive, and globally coordinated regulatory efforts. For cryptocurrencies to contribute positively to sustainable development, their evolution must be guided towards transparency, stability, and integration within frameworks that prioritize long-term economic and social well-being over speculative gains. Future research should not only delve deeper into refining these regulatory frameworks but also quantitatively assess the impact of cryptocurrencies on specific Sustainable Development Goals, moving beyond general economic indicators to evaluate their actual societal value.

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The authors declare that they have no conflict of interest.

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