

Roth, Felix

Working Paper

What is the impact of cryptocurrencies on financial markets and global trade?

Hamburg Discussion Papers in International Economics, No. 17

Provided in Cooperation with:

University of Hamburg, Department of Economics, Senior Lectureship in International Economics

Suggested Citation: Roth, Felix (2024) : What is the impact of cryptocurrencies on financial markets and global trade?, Hamburg Discussion Papers in International Economics, No. 17, University of Hamburg, Department of Economics, Senior Lecturer in International Economics, Hamburg

This Version is available at:

<https://hdl.handle.net/10419/303528>

Standard-Nutzungsbedingungen:

Die Dokumente auf EconStor dürfen zu eigenen wissenschaftlichen Zwecken und zum Privatgebrauch gespeichert und kopiert werden.

Sie dürfen die Dokumente nicht für öffentliche oder kommerzielle Zwecke vervielfältigen, öffentlich ausstellen, öffentlich zugänglich machen, vertreiben oder anderweitig nutzen.

Sofern die Verfasser die Dokumente unter Open-Content-Lizenzen (insbesondere CC-Lizenzen) zur Verfügung gestellt haben sollten, gelten abweichend von diesen Nutzungsbedingungen die in der dort genannten Lizenz gewährten Nutzungsrechte.

Terms of use:

Documents in EconStor may be saved and copied for your personal and scholarly purposes.

You are not to copy documents for public or commercial purposes, to exhibit the documents publicly, to make them publicly available on the internet, or to distribute or otherwise use the documents in public.

If the documents have been made available under an Open Content Licence (especially Creative Commons Licences), you may exercise further usage rights as specified in the indicated licence.

What is the impact of cryptocurrencies on financial markets and global trade?

Felix Roth

Hamburg Discussion Paper in International Economics [No.17]

University of Hamburg

Senior Lecturer in International Economics

October 2024

As Senior Lecturer in International Economics in the Department of Economics at the University of Hamburg, PD Dr. Felix Roth aims to promote and disseminate original, empirical research focusing on European economic integration, the economics of Monetary Union, and the impact of intangible investment on international growth.

The Hamburg Discussion Paper Series was launched to enable both internal and external researchers, faculty members as well as students at the University of Hamburg to make their research publicly available. The aim is to contribute to the current policy debate by publishing empirical data leading to novel findings and policy implications in these fields and to stimulate additional research on related topics.

The views expressed in this paper represent the opinion of the author only. For any questions or comments, please directly contact the author.

Editor:

PD Dr. Felix Roth
University of Hamburg
Senior Lecturer in International Economics
Von-Melle-Park 5
Postfach #17
20146 Hamburg
Felix.Roth@uni-hamburg.de
Homepage: <https://www.felixroth.net/>
ISSN 2625 - 7513 (online)

<https://www.wiso.uni-hamburg.de/fachbereich-vwl/ueber-den-fachbereich/mitglieder/roth-felix.html>

What is the impact of cryptocurrencies on financial markets and global trade?¹

By Felix Roth*

** University of Hamburg, Senior Lecturer in International Economics, Department of Economics,
Von-Melle-Park 5, Postfach #22, 20146 Hamburg. Email: felix.roth@uni-hamburg.de*

Abstract

This paper starts with brief introductory remarks, providing the underpinning of the academic argument and a summary statement of its main findings. It then elaborates on the evolution of existing cryptocurrencies' market capitalization from 2009 until 2022. Third, the paper investigates the economic nature of cryptocurrencies and discusses whether they are money. Fourth, it will discuss the direct and indirect impact of cryptocurrencies on financial markets and global trade. Fifth, the paper offers two main conclusions.

1. Introduction

For several decades now, advanced economies across the globe have been undergoing a process of rapid transformation toward becoming knowledge economies. It is now widely recognized that digitization and intangible capital have been crucial elements in the growth performance of these economies and their firms (Roth 2022). Judging from the latest events, this trend will soon lead to the launch of digital currencies on behalf of central banks (CBDCs) around the globe, including the introduction of a digital Euro, with digital Euro cash (Panetta 2022, Kosse and Ilaria 2022, Brunnermeier and Landauer 2022). Transforming cash money into digital cash money is thus just part of the general transformation of advanced economies into intangible capital economies. It seems valid to concur that trust or public support for digital currencies managed by global central banks will become even more important than in times of pure fiat or gold-backed currencies.

¹This manuscript contribution is based on a lecture the author delivered at the Saarland University for Technology and Science (HTW Saar) on 6 July 2022.

However, the concept of digital currencies and money are not entirely new. The concept of cryptocurrencies has been at the forefront of this digitization of money for more than a decade now. The first cryptocurrency, bitcoin, was introduced in 2008/2009 due to the systemic trust crisis in central banks and national governments around the globe in the immediate aftermath of the Lehman Brothers bankruptcy on 15 September. It triggered the largest global financial crisis since the great depression in the 1930s. It was one month later, in October 2008, when the pseudonym “Satoshi Nakamoto” posted the original Bitcoin white paper and in early 2009 when the domain “bitcoin.org” was registered (Speech Coeuré, in Basel, 15 November 2018). Since its start in 2009, the cryptocurrency market has evolved dynamically and reached an all-time high of a market capitalization of 2.6 trillion USD in November 2021. But what is the impact of cryptocurrencies on financial markets and global trade? This paper finds a direct and an indirect impact and offers two main conclusions:

First, the overall direct impact of cryptocurrencies on financial markets and global trade will most likely be negative. Given the fact that cryptocurrencies do not fulfill the functions of money but are rather speculative assets the currently ongoing growing interconnectedness with the wider financial system poses a threat to (global) financial stability, with its potential detrimental implications for financial markets and global trade.

Second, the overall indirect impact of cryptocurrencies on financial markets and global trade will most likely be strongly positive. By stimulating global central banks to introduce digital currencies and by promoting the use-case of financial and blockchain technologies within the financial and retail and transport industry and the management of Global Value Chains, they will most likely yield a strongly positive impact on financial markets and global trade.

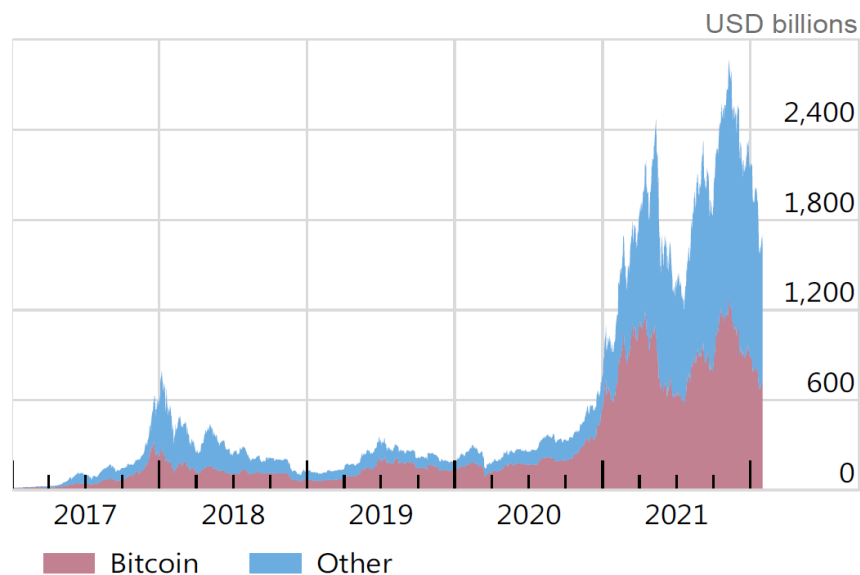
2. Evolution of Cryptocurrencies

Currently, over 16,000 cryptocurrencies exist (ECB 2022). According to the ECB report on financial stability from May 2022, 10 additional cryptocurrencies are created on a daily base (ECB 2022). Cryptocurrencies can best be described as a peer to peer payment system which allows transferring digital tokens without the need of financial institutions or state government (EP 2020). According to Landau (Landau 2022, Brunnermeier and Landau 2022) in contrast to central bank digital currencies, which use a centralized ledger, most cryptocurrencies use a decentralized ledger and blockchain technology (DLT). Whereas Bitcoin is a non-permissioned blockchain technology, stablecoins use a permissioned one. For a detailed overview of the technical background of

cryptocurrencies, here in particular bitcoin, the reader is referred to an article by Böhme et al. (2015) on the technical build-up of Bitcoin in the *Journal of Economic Perspectives* (JEP) in the year 2015.

The reports by the Financial Stability Board (FSB) and the European Central Bank (ECB) differentiates three segments of cryptocurrencies: i) unbacked cryptocurrencies (such as bitcoin); ii) currency-backed or corporate-backed cryptocurrencies such as stablecoins, and iii) decentralized finance (DeFi) and cryptocurrencies trading platforms. For a more detailed description of these segments, the audience is referred to articles by Danielsson (2021) and Landau (2022).

Figure 1. Market Capitalization of Cryptocurrencies, 2017-2021



Source: Financial Stability Board (2022). Assessment of Risks to Financial Stability from Crypto-assets, 16 February, downloadable at: <https://www.fsb.org/2022/02/assessment-of-risks-to-financial-stability-from-crypto-assets/>.

Figure 1 shows the overall crypto-asset market capitalization from 2017 to 2021 and differentiates between Bitcoins and Other Cryptocurrencies. Whereas the evolution of the market capitalization of cryptocurrencies showed no dynamic patterns from early 2017 until September 2020, since the start of the COVID-19 winter wave in October 2020, the cryptocurrencies and bitcoin market prices have seen a 600% increase until April 2021 with a total market capitalization of 2.6 trillion USD in November 2021. This is twice the value of the subprime market in 2008 with 1.3 trillion USD.

Figure 2. Market Capitalization of Bitcoin, 2009-2022



Source: www.Blockchain.com, Access on 25/6/2022.

In order to extend the times series evidence further, Figure 2 focuses on the market capitalization for the bitcoin from February 2009 until June 2022. For the 13-year time series we detect a similar pattern. Whereas the market capitalization is relatively un-dynamic for the first 10 years, since October 2020, we saw a 600% increase in market capitalization with a historical high value of 1.2 trillion USD in November 2021. This is the same value as the former sub-prime market capitalization of 1.3 trillion USD (Krugman 2022).

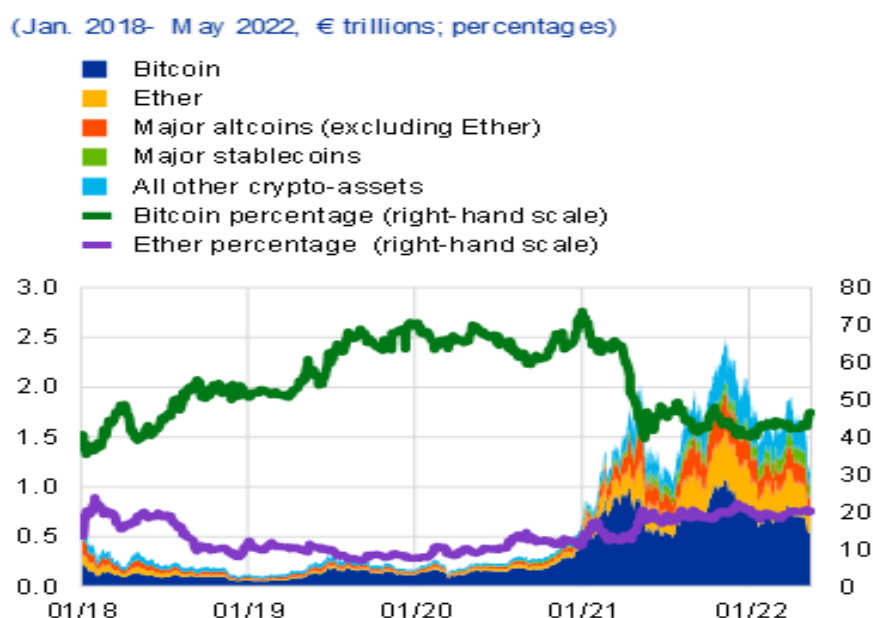
Figure 3. Drivers in the Price of Bitcoins, 2021-2022



Source: Financial Stability Board (2022). Assessment of Risks to Financial Stability from Crypto-assets, 16 February, downloadable at: <https://www.fsb.org/2022/02/assessment-of-risks-to-financial-stability-from-crypto-assets/>.

Figure 3 shows potential drivers of the bitcoin market capitalization. We learn that amongst other the announcements by Tesla's CEO Elon Musk concerning the ability to purchase Tesla cars with bitcoins and the ban of financial institutions from providing cryptocurrency-related services on behalf of the Chinese regular authorities was influencing market confidence in a pronounced manner.

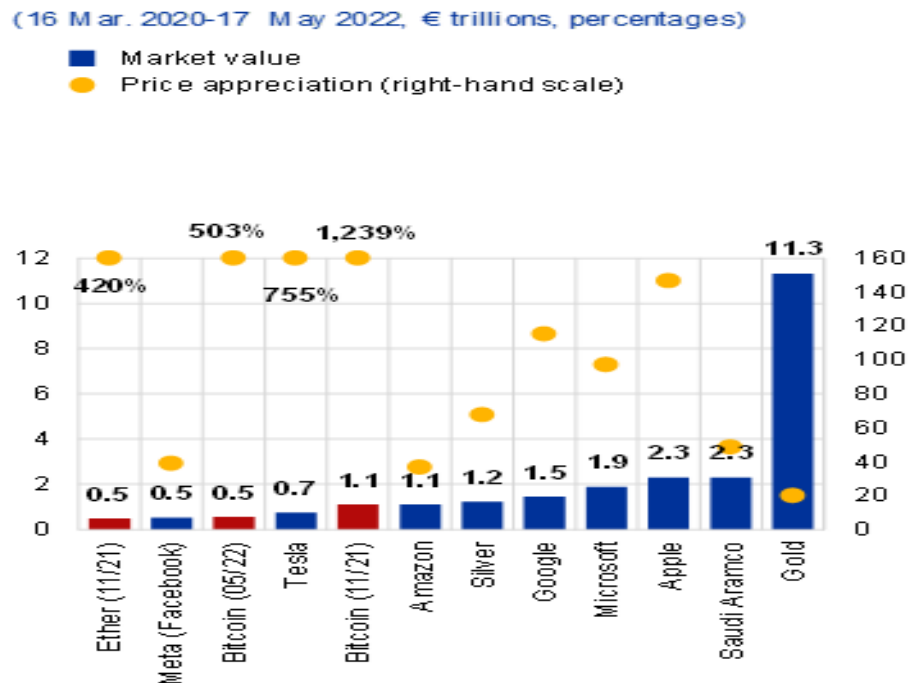
Figure 4. Market Capitalization of Cryptocurrencies, 2018-2022



Source: European Central Bank (2022). Decrypting financial stability risks in crypto-asset markets, Special feature within Financial Stability Review, May 2022, https://www.ecb.europa.eu/pub/financial-stability/fsr/special/html/ecb.fsrart202205_02~1cc6b111b4.en.html.

Figure 4 shows the importance of the two largest cryptocurrencies, Bitcoin and Ether, for the overall market capitalization of cryptocurrencies. Whereas their share was up to 85%, it has fallen to around 70% lately due to the growing diversification of the cryptocurrencies market.

Figure 5. Bitcoin vs. Largest Assets by Market Capitalization



Source: European Central Bank (2022). Decrypting financial stability risks in crypto-asset markets, Special feature within Financial Stability Review, May 2022, https://www.ecb.europa.eu/pub/financial-stability/fsr/special/html/ecb.fsrart202205_02~1cc6b111b4.en.html.

Figure 5 compares the bitcoin market capitalization and price appreciation from November 2021 to the largest assets by market capitalization around the globe. Interestingly, the market capitalization of bitcoin is already larger than the one from the Meta Corporation and similar to the Amazon corporation. Moreover, the price appreciation of Bitcoin of 1,239% is more than eight-fold in comparison to the highest corporate stock value by Apple of around 140%. This underlines the very high volatility of Bitcoins.

3. Are cryptocurrencies money?

Above, we have analyzed the highly volatile and dynamic evolution of the market capitalization of cryptocurrencies, reaching a historically high level of app. 2.6 trillion USD in November 2021. But what is the economic nature of cryptocurrencies? Are cryptocurrencies money? Are they the new gold? Or are they rather speculative assets? Precisely, these questions have attracted the attention of internationally renowned scholars working in this field of research (Danielsson 2018, 2021, Danielsson and Macrae 2022, Krugman 2018, Munoz and Frenkel 2021).

So let us take a step back and ask: what is money? In order to be characterized as money, Cryptocurrencies would need to meet the three basic functions of money. Cryptocurrencies would need to act as: i) a widely accepted medium of exchange, ii) a store of value, and iii) a unit of account.

Let us thus commence to investigate whether cryptocurrencies are a widely accepted medium of exchange. Given that it is not possible to use bitcoin for day-to-day tangible or intangible digital shopping in retail stores such as Amazon or Rewe, drugstores, gas stations, and pharmacies (Krugman 2018), we conclude that Bitcoin does not act as a widely accepted medium of exchange.

However, what would happen if large retail services such as the Amazon Corporation or car producers such as the Tesla Corporation would accept bitcoins as a medium of exchange? Following the argument by Danielsson (2018), we conclude that the government in charge would not permit such transactions given that there is only one legal tender; in the US, the USD, and in the Euro area, the Euro. Similar to the Chinese case, most governments around the globe would just shut down competitive private currencies such as bitcoin and Facebook's stablecoin Libra.

This might most likely explain why the Amazon corporation has already rejected the idea of accepting Bitcoin as a medium of exchange in 2014, and Tesla's CEO Elon Musk took back his own announcement to accept bitcoins as a medium of exchange to purchase a Tesla car. As highlighted by Harvard economist Kenneth Rogoff (2021), the only real possible widely accepted medium of exchange stems from illegal activity. This might be the reason of why it is possible to purchase Lamborghinis and Rolex with Bitcoin (Investopedia 2022).

Overall, we therefore conclude that cryptocurrencies do not act as a widely accepted medium of exchange.

Let us now continue our investigation and ask whether cryptocurrencies act as a store of value? As shown above the volatility in the market prices of Bitcoin with a price appreciation of 1,239% is the 8-30-fold of stocks and 60-fold of gold. In this line of argument, Krugman (2018) clarifies that whereas the management of fiat monies by central banks and governments creates inflation rates of not more than 30%, the average inflation rate of Bitcoins is around 360 percent annually. Furthermore, there were reported various incidents of hacks, thefts and market price manipulations on peripheral platforms of cryptocurrencies (Landau 2022). We, therefore, conclude that cryptocurrencies do not act as a store of value.

Figure 6. Ten Largest Cryptocurrencies

#	Name	Preis	24h %	7d %	Marktkapitalisierung	Volumen (24 Std.)	Umlaufversorgung	Letzte 7 Tage
1	Bitcoin BTC	€20,143.46	+3.50%	+1.11%	€384,230,744,923	€25,919,529,409 1,286,819 BTC	19,075,793 BTC	
2	Ethereum ETH	€1,144.94	+8.90%	+9.51%	€138,866,343,461	€15,700,179,768 13,712,650 ETH	121,286,861 ETH	
3	Tether USDt	€0.9458	+0.69%	+1.52%	€63,345,211,289	€45,819,946,401 48,447,261,626 USDt	66,977,425,011 USDt	
4	USD Coin USDC	€0.9464	+0.72%	+1.58%	€52,763,751,627	€4,816,421,033 5,086,224,541 USDC	55,719,441,177 USDC	
5	BNB BNB	€226.61	+6.21%	+8.54%	€36,990,385,113	€1,085,785,175 4,792,697 BNB	163,276,975 BNB	
6	XRP XRP	€0.349	+12.41%	+11.81%	€16,879,824,230	€1,913,555,064 5,480,340,605 XRP	48,343,101,197 XRP	
7	Binance USD BUSD	€0.9475	+0.73%	+1.63%	€16,485,830,806	€4,473,597,584 4,729,464,129 BUSD	17,428,734,694 BUSD	
8	Cardano ADA	€0.476	+6.92%	+1.33%	€16,051,935,590	€873,802,368 1,837,352,954 ADA	33,752,565,071 ADA	
9	Solana SOL	€38.74	+12.27%	+27.12%	€13,253,232,880	€1,787,539,636 46,213,836 SOL	342,638,599 SOL	
10	Dogecoin DOGE	€0.06346	+5.86%	+15.82%	€8,427,310,081	€490,485,466 7,721,690,671 DOGE	132,670,764,300 DOGE	

Source: <https://coinmarketcap.com/de/>, Access on 14/6/2022.

In order to once more point out the high volatility of cryptocurrencies, Figure 6 shows the 7-day volatility of the 10 largest cryptocurrencies. As can be detected among the 10 largest cryptos, the volatility can be as high as 27%. Analyzing the daily prices of the top-100 listed cryptocurrencies, price appreciations can easily reach 100%.

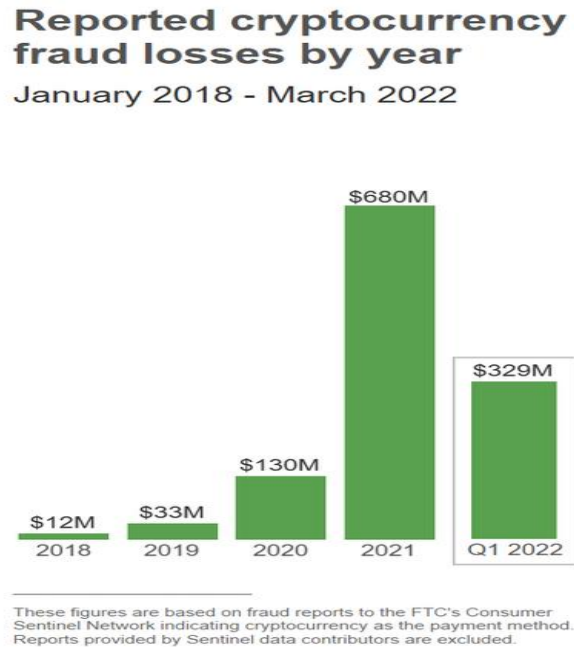
Figure 7. Market Price for Stable Coin Terra-Dollar, 2022



Source: www.Finanzen.net, Access at 25/6/2022.

In this line of argument, the case study of the stablecoin Terra USD is providing even better evidence. Figure 7 shows the evolution of Terra USD. Terra USD market capitalization has lost 99.7 % of its market price in 24h in May 2022. Many citizens have lost their savings in the Terra USD crash. Landau (2022) points out that Terra USD is secured with another worthless stablecoin.

Figure 8. Reported Cryptocurrency Fraud Losses by Year



Source: Fletcher (2022). Reports show scammers cashing in on crypto craze, Data Spotlight, Federal Trade Commission, <https://www.ftc.gov/news-events/data-visualizations/data-spotlight/2022/06/reports-show-scammers-cashing-crypto-craze>.

In order to underline the evidence concerning the potential risk of hacks and thefts, Figure 8 shows the reported cryptocurrency losses by year as provided by the Federal Trade Commission in the US. First, every fourth dollar of reported fraud in the US is related to fraud incidences in the cryptocurrencies markets. Second, the fraud takes an exponential pattern, with reported fraud in 2021 totaling 680 million USD.

Let us finally commence to investigate whether cryptocurrencies are a unit of account: According to Danielsson (2018), the volatility (as elaborated upon above) of cryptocurrencies, in particular bitcoin, precludes it from becoming such a unit of account because shopkeeper will not want to change their prices every time bitcoin goes up or down in value. Danielsson clarifies that

citizens do not want high volatility in the purchasing power of their salary or savings and concludes that in order for bitcoin to become a unit of account, the purchasing power of a bitcoin would need to be stabilized beforehand. We conclude that Bitcoins do not act as a unit of account.

In addition to the three classical criteria, it needs to be highlighted that there is no lender of last resort function for cryptocurrencies nor Facebooks Libra (Danielsson 2019 and Eichengreen 2021). At least do cryptocurrencies act as the new gold, and thus as a macro hedge against economic uncertainty? According to Krugman, in contrast to bitcoins, gold has an economic purpose as it is used for dental gold and jewelry. Krugman, however, admits that bitcoins might survive as a macro hedge against economic uncertainty. In respect, however, Danielsson and Macrae (2022) point out that in times of emergency, cryptocurrencies would need access to the internet and electricity. Given that gold does not need neither, the author argues that gold will stay the macro hedge, similar to the last 1000 years.

Conclusion: The above argumentation has clarified that bitcoin meets none of the three functions of money. It is thus economically inefficient vis-à-vis existing fiat money, which is officially managed by global central banks and treasuries. In addition, it is economically less efficient as an adequate macro hedge against economic uncertainty vis-à-vis gold. So what are cryptocurrencies and how do they arrive at such a high market capitalization as elaborated upon?

Cryptocurrencies should be viewed as a classical self-fulfilling speculative asset price bubble. As such, they will most likely follow the usual patterns of manias, panic, and crashes, as pointed out by Kindleberger et al. (2015). In addition, given the fact that they serve no economic purpose/fundamentals, a panic in the cryptocurrencies markets might well lead to a complete fall-out in the near future. According to Krugman, Stiglitz, and Rogoff, this best resembles a Ponzi scheme (such as the one from Bernie Madoff), and Danielsson (2018) calling Bitcoins a lousy investment (Danielsson 2018b).

Krugman, therefore concludes that citizens should be safeguarded from Cryptocurrencies. A similar stance has been made by the European Supervisory Authorities (2022) and the executive board of the ECB (Coere 2019, Panetta 2022, Lagarde in CNBC 2022), with ECB president Lagarde warning that cryptocurrencies “are worth nothing”. Moreover, cryptocurrencies are criticized: i) for being inefficient as a payment system (Carstensen 2018, Landau 2022), for their environmentally unfriendly high energy usage (Carstensen 2018, Landau 2022, Landau and Brunnermeier 2022), and for fostering illegal/criminal activities such as trafficking illegal drug and arms (Stiglitz in Böcking 2022 and Rogoff 2022).

4. Impact of financial markets and global trade

4.1 Direct Impact

We have concluded that the overall direct impact of cryptocurrencies on financial markets and global trade would most likely be negative. How come? This is foremost related to the economic inefficiency of cryptocurrencies with regard to financial stability. As pointed out above, given the fact that cryptocurrencies are self-fulfilling speculative asset price bubbles serving no economic purpose, a panic in the cryptocurrencies markets might well lead to a complete fall-out in the near future.

This would create per se no problem for the stability of (global) financial systems if cryptocurrencies markets were strictly kept separated from broader financial markets. In such a case, a complete fall-out would only incur losses to individual households, firms, and financial agents but would not impact the stability of the (global) financial system, per se.

However, the reports on financial stability by the FSB (2022) and ECB (2022) suggest a growing interconnectedness between cryptocurrencies and broader financial markets: e.g. i) hedge funds plan to invest at least 7% of their assets into cryptocurrencies (FSB 2022), ii) in Germany institutional funds have been allowed to invest up to 20% in cryptocurrencies (FSB 2022), iii) 56% of European institutional investors indicate that they have some level exposure to cryptocurrencies (ECB 2022), iv) new products such as leverage token increase the exposure to cryptocurrencies, pronounced increase in marketing and lobbying activities on behalf of cryptocurrencies (Krugmann 2022), and v) big payment networks such as PayPal, Mastercard and Visa have stepped up their services for cryptocurrencies (Panetta 2022).

The above evidence changes our above assumptions. Given the increased interconnectedness between cryptocurrencies and broader financial markets, a sudden complete fall out of the cryptocurrencies would pose a threat to the stability of the (global) financial system. Systemic banks which are considered to be too big-to-fail and would need to be bailed-out/aided with the help of the European Stability Mechanism, the European Commission, and national governments. Given that the cryptocurrency market capitalization of 2.6 trillion USD in November 2021 was already double the size of the US sub-prime market of 2008 with 1.3 trillion USD, the new (global) financial crisis should have at least a similar or worse negative effect on the (global) financial market as one from 2008. Similar to the financial crisis of 2008, the detrimental effects

on global trade would most likely be a size of around 20% decline and more. (Eichengreen 2009, Nagengast and Stehrer 2016).

We have now discussed the direct negative effect. But is there no direct positive impact? Indeed, there is. However, it is rather to be neglected vis-à-vis the technological advances in the fintech market, as will be pointed out later on.

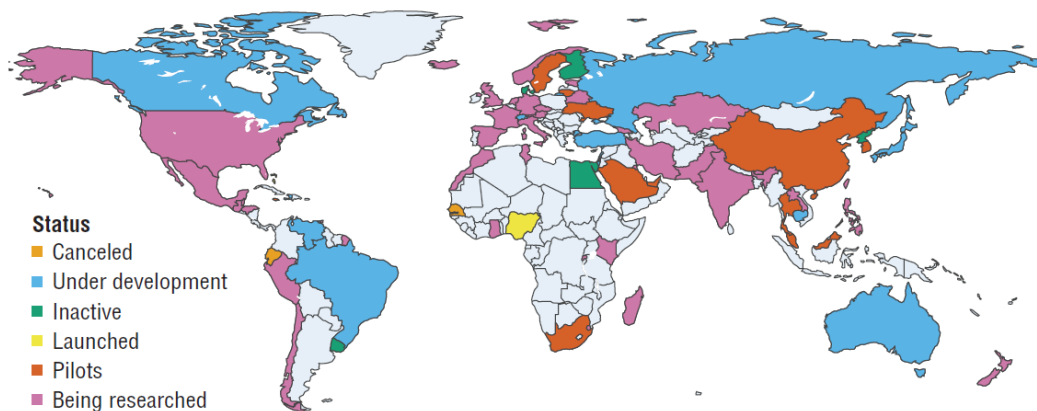
4.2 Indirect Impact

CBDCs and the digital Euro

The increasing demand for Bitcoins, paired with Facebook's attempt to launch the global stable coin Libra in 2019, has met immediate resistance by academics (Schoenholtz and Cecchetti 2019), treasuries (French and German Ministries of Economics 2019), and central banks (Hurtz and Zydra 2022) in the European and the US given the potential threat to: i) monetary sovereignty and ii) fiscal stability for consumers. These incidences and the increasing demand for digital currencies by the younger generations finally convinced the global central bank community and, in particular, the European Central Bank to implement digital currencies on behalf of the central banks (CBDCs) or, in the case of the ECB the digital Euro.

Figure 9. CBDC Exploration around the World

FIGURE 1 CBDC EXPLORATION AROUND THE WORLD



Source: Duffie and Economy (2022). Data for the map was retrieved from the Atlantic Council's Central Bank Digital Currency Tracker.

Source: Duffie et al. (2022). Technology and Finance: The future of banking. CEPR.

Figure 9 shows an overview of CDBC's around the world as published by Duffie et al. (2022) on the future of banking. As stated by the Atlantic Council's CBDC-Tracker, on June 3, 2022, 91 countries were engaged on different levels, out of which nine launched a CBDC and 15 launched a pilot project under them China. Overall, these 91 countries are combining over 90% of the global GDP (Boar and Wehrli 2021).

Global central banks investigate two broad forms of possible application: i) a wholesale payment application restricted to large-value and high-priority transactions, such as interbank transfers, or ii) a widely available, consumer-facing payment instrument targeted at retail transactions (general purpose CDBC) (Coere 2018). Given the fact that the latest publications by the ECB only speak about the introduction of a retail CBDC, this will be the focus of our investigation. What is the impact of retail CBDCs on financial markets and global trade?

Agents involved in financial markets and global trade benefit from digital currencies as provided by central banks globally, as follows: Digital currencies provide

- i) consumer protection against theft, fraud, and market manipulation,
- ii) stable prices,
- iii) a lender of last resort function,
- iv) a guarantee to convert digital currencies (tokens) into real currencies,
- v) a political legitimacy through high levels of public support/trust (Roth 2022),
- vi) conventional and unconventional (such as helicopter money) monetary policies (Panetta 2022),
- vii) a reduction of transaction costs through an efficient, instant, and anonymous peer-to-peer cross-border payment scheme,
- viii) a geopolitical counterweight against the Chinese digital currency (Boonstra 2022),

As identified by Brunnermeier and Landau (2019, 2022), however, retail CDBC's also pose a risk to financial stability and financial dis-intermediation. The risks are as follows:

- i) CDBC's could crowd out bank deposits and payment activities, which may impair financial stability and reduce lending to the economy
- ii) in times of crisis, when there is a sudden loss of confidence in banks – significant bank runs into retail CBDC's might occur.

Blockchain technology

International renowned economics agree on the fact that even if the blockchain technology for cryptocurrencies make inefficient payment systems, the blockchain technology should yield highly efficiency gains in the global market services. (Rogoff 2022, Landau 2022).

As pointed out by a report for the European Parliament, software applications using blockchain technology are currently developed by IBM and Intel and are implemented within financial markets and global trade. The first use-case concerns the implementation of the blockchain software R3 Corda, which has been implemented in the Italian Banking Industry in order to improve the efficiency of handling their customer relations. The second use-case is the implementation of blockchain technology in global value chains. According to a report by the World Trade Organization (Ganne 2018), the implementation of blockchain technology will strongly positively increase efficiency and productivity in global trade. According to the Asian Development Bank the transaction costs of global commodity trade alone are as high as 1.6 trillion USD. The WTO report points out that the blockchain technology will significantly cut these costs.

Fintechs

It is argued that cryptocurrencies help the market economy, including financial markets, by providing an efficient instrument for pooling start-up money through the process of Initial Coin Organizations (Munoz and Frankel 2021). Moreover, it is argued that cryptocurrencies such as Ripple are beneficial for global trade, given their potential to reduce transaction cost by offering a payment system, which permits instant peer-to-peer payment (Munoz and Frankel 2021). As suggested by Roubini (2022), however, these benefits of cryptocurrencies can be neglected once comparing them to the economic efficiency gains as provided by the innovative and dynamic fintech industry and the implementation of blockchain technology in the markets service, including finance, retail, and transport. Just to name a few examples: Venmo and even now, even Clearing House have created very efficient instantaneous peer-to-peer payment systems.

5. Conclusions

This paper offers two main conclusions:

First, the overall direct impact of cryptocurrencies on financial markets and global trade will most likely be negative. Given the fact that cryptocurrencies do not fulfill the functions of money but are rather speculative assets the currently ongoing growing interconnectedness with the

wider financial system poses a threat to (global) financial stability, with its potential detrimental implications for financial markets and global trade.

Second, the overall indirect impact of cryptocurrencies on financial markets and global trade will most likely be strongly positive. By stimulating global central banks to introduce digital currencies and by promoting the use-case of blockchain and financial technologies within the financial and retail and transport industry and the management of Global Value Chains, they will most likely yield a strongly positive impact on financial markets and global trade.

References:

- Blockchain.com (2022). Chart on Market Capitalization (USD) of Bitcoin. <https://www.blockchain.com/de/explorer/charts/market-cap>.
- Boar, C. and Wehrli, A. (2021). Ready, steady, go? – Results of the third BIS survey on central bank digital currency. BIS Papers No 114.
- Boonstra, W. (2022). CBDC and the international position of the Euro. SUERF Policy Note 269.
- Böcking, D. (2022). Joseph Stiglitz fordert Verbot von Kryptowährungen. Der Spiegel 22/2022. <https://www.spiegel.de/wirtschaft/joseph-stiglitz-nobelpreistraeger-fordert-verbot-von-kryptowaehrungen-a-db70b924-6970-4cff-9da4-cb8f29d923b0>.
- Böhme, R., Nicolas, C., Edelman, B. and Moore, T. (2015). Bitcoin: Economics, Technology, and Governance. Journal of Economic Perspectives 29 (2): 213-238.
- Brunnermeier, M., James, H. and Landau, J.-P. (2019). The digitalization of money. NBER Working Paper No.26300.
- Brunnermeier, M.K. and Landau, JP. (2022). The digital Euro: policy implications and perspectives. Publication for the committee on Economic and Monetary Affairs, Policy Department for Economic, Scientific and Quality of Life Policies. European Parliament, Luxembourg.
- Carstensen (2018). Money in the digital age: what role for central banks?. Speech at the University of Frankfurt.
- CNBC (2022). Christine Lagarde says crypto is worth nothing. 23.05.2022. <https://www.cnn.com/2022/05/23/ecb-chief-christine-lagarde-crypto-is-worth-nothing.html>.
- Coeuré, B. (2018). The new frontier of payments and market infrastructure: on cryptos, cyber and CCPs. Speech in Basel on 15 November 2018,
- Coeuré, B. (2019). Digital challenges to the international monetary and financial system. Speech at the Central Bank of Luxembourg–Toulouse School of Economics conference on the future of the international monetary system. September.
- Coinmarketcap.com (2022). Ten largest cryptocurrencies. <https://coinmarketcap.com/de/>.

- Dal Bianco, S. (2021). The economic nature of bitcoin – Money, new gold or speculative assets?. In: Munoz and Frenkel (eds). The Economics of Cryptocurrencies. Routledge International Studies in Money and Banking: Oxon, 3-10. 28-34.
- Dal Bianco, S. (2021). CBDC. In: Munoz and Frenkel (eds). The Economics of Cryptocurrencies. Routledge International Studies in Money and Banking: Oxon, 3-10. 28-34.
- Danielsson, J. (2018a). Cryptocurrencies don't make sense. VOX EU Column 13 Feb 2018. <https://cepr.org/voxeu/columns/cryptocurrencies-dont-make-sense>.
- Danielsson, J. (2018b). Cryptocurrencies are lousy investments. VOX EU Column 15 Jun 2018. <https://cepr.org/voxeu/columns/cryptocurrencies-are-lousy-investments>.
- Danielsson, J. (2019). Cryptocurrencies: Policy, economics and fairness. Systemic Risk Centre. London School of Economics.
- Danielsson, J. (2021). What happens if bitcoin succeeds?. VOX EU Column 26 Feb 2021. <https://cepr.org/voxeu/columns/what-happens-if-bitcoin-succeeds>.
- Danielsson, J. and Macrae, R. (2022). Bitcoin isn't much of a macro hedge. VOX EU Column 25 June 2022. <https://cepr.org/voxeu/columns/bitcoin-isnt-much-macro-hedge>.
- Duffie, D., Foucault, T, Veldkamp, L. and Vives, X. (2022). Technology and Finance: The future of banking. London, UK. Centre for Economic Policy Research.
- ECB (2022). Decrypting financial stability risks in crypto-assets markets. Published as part of the Financial Stability Review. https://www.ecb.europa.eu/pub/financial-stability/fsr/special/html/ecb.fsrart202205_02~1cc6b111b4.en.html.
- Eichengreen, B. (2009). The Financial Crisis and Global Policy Reforms. Proceedings, Federal Reserve Bank of San Francisco, issue Oct, 299-334.
- Eichengreen, B. (2021). The Stablecoin Illusion. Project Syndicate. July 13, 2021. <https://www.project-syndicate.org/commentary/stablecoins-pose-threats-to-financial-markets-by-barry-eichengreen-2021-07>.
- European Parliament (2020). Blockchain for supply chains and international trade. European Parliamentary Research Service. Brussels.
- European Supervisory Authority (2022). EU financial regulators warn consumers on the risk of crypto-assets. <https://www.esma.europa.eu/document/eu-financial-regulators-warn-consumers-risks-crypto-assets>.
- Financial Stability Board (2022). Assessment of Risks to Financial Stability from Crypto-assets. 16 February 2022.
- Finanzen.net (2022). Chart Terra – Dollar (Luna USD). www.Finanzen.net.
- Fletcher, E. (2022). Reports show scammers cashing in on crypto craze. Data Spotlight. Federal Trade Commission, <https://www.ftc.gov/news-events/data-visualizations/data-spotlight/2022/06/reports-show-scammers-cashing-crypto-craze>.
- French and German Ministries of Economics (2019). Joint Statement in Libra. Helsinki, 13 September 2019.
- Ganne, E. (2018). Can Blockchain revolutionize international trade?. WTO Publications.
- Hurtz, S. and M. Zydra (2022). Zuckerberg wird doch kein Notenbanker. Süddeutsche Zeitung. 26 January 2022.

- Investopedia (2022). 5 surprising things you can buy with crypto. <https://www.investopedia.com/buy-with-crypto-6542628>.
- IMF (2021). Global Financial Stability Report. Covid-19, Crypto, and Climate: Navigating Challenging Transitions. Washington DC.
- Kindleberger, C. and Aliber, R. (2015). Manias, Panics, and Crashes – A History of Financial Crises. Seventh Edition. Palgrave Macmillan.
- Kosse, A. and Ilaria, M. (2022). Gaining momentum – Results of the 2021 BIS survey on central bank digital currencies. BIS Papers No 125.
- Krugman, P. (2018). Transaction Costs and Tethers: Why I’m a Crypto Skeptic. The New York Times. 31 of July 2018.
- Krugman, P. (2022). New York Times’ Paul Krugman calls cryptocurrencies a ‘scam’. Fox News. <https://www.foxnews.com/media/new-york-times-paul-krugman-cryptocurrencies-scam>.
- Landau, JP. (2022). Crypto currencies and digital money: Taking stock. VOX EU Column 27 Jun 2022. <https://cepr.org/voxeu/columns/crypto-currencies-and-digital-money-taking-stock-0>.
- Munoz, J. and Frenkel, M. (2021). Cryptocurrencies in an economic context, In: Munoz and Frenkel (eds). The Economics of Cryptocurrencies. Routledge International Studies in Money and Banking.
- Nagengast, A. Stehrer, R. (2016). Why world trade collapsed during the financial and economic crisis. Deutsche Bundesbank Research Brief 7th edition.
- Panetta, F. (2022). For a few cryptos more: the Wild West of crypto finance. Speech at Columbia University, New York 25 April 2022. (2022 13 April VOX For a few Cryptos more).
- Rogoff, K. (2021). Ein Fluch schlimmer als Bargeld. Project Syndicate. 04.06.2021.
- Rogoff, K. (2022). What’s the Crypto Regulation Endgame? Project Syndicate. 06.06.2022.
- Roth, F. (2022). Intangible Capital and Growth – Essays on Labor Productivity, Monetary Economics, and Political Economy. Vol. 1. Springer.
- Roubini, N. (2022). Economist Roubini says US economy getting very close to recession. Video of interview with Bloomberg. 21.06.2022. <https://www.bloomberg.com/news/videos/2022-06-21/roubini-says-us-getting-very-close-to-recession-video>.
- Schoenholtz K. L. and S. Cecchetti (2019). Libra: A dramatic call to regulatory action. VOX EU Column 28 Aug 2019.