

EDITORIAL

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Editorial to special issue “Hidden market linkages between Bitcoin, cryptocurrencies and financial markets: Evidence from high-frequency data and higher-order moments” in financial innovation

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The cryptomarket has evolved into a complex system of different types of cryptoassets, each playing an important role within the system. With specific features, opportunities, and risks. Studying their apparent and hidden linkages and general connectedness not only inside the system but also the linkages to the outer markets, being it either the traditional financial markets or the macroeconomic and monetary indicators and variables, plays a crucial role in understanding the market, managing risks, and aiming for profitable opportunities. The cryptomarkets are far from being simply Bitcoin or even just the most popular and capitalised cryptocurrencies and tokens which might have been the case just a few years back. Now, they comprise stablecoins, non-fungible tokens (NFTs), derivatives, as well as rich services in the decentralized finance (DeFi) space such as lending and borrowing platforms, liquidity provision, farming and harvesting, and gaming to name the most prominent ones. All these subareas are highly interconnected and mostly highly leveraged, which increases systemic risks and produces space for possible liquidation cascades. The still rather recent implosion of the Terra-Luna ecosystem clearly uncovered how leveraged the system really is, with many large liquidations and project collapses being directly connected to the mayhem that followed. As the alleged fraud of the FTX exchange is still being unveiled in its details, the complexity that needs to be understood is clearly in the spotlight. However, it is not only the interlinkages within the system that are essential in grasping the market dynamics. Even if the cryptomarkets could have been seen as rather detached from the traditional (financial) markets, the pandemic era and the follow-up characteristic by unprecedented fiscal and monetary stimuli have shown that cryptomarkets are being more and more integrated with the real economy. This structural change needs to be properly studied and analysed. The presented special issue “Hidden market linkages between Bitcoin, cryptocurrencies and financial markets: Evidence from high-frequency data and higher-order moments” collects studies looking at the linkages from various perspectives, following

the above-described logic. These can be clustered into four main groups: market spillovers, portfolio management, herding and market crashes, and regulation.

The market spillovers provide rich coverage of aspects and features of the cryptomarkets. Gherghina and Simionescu (2023) study the asymmetric effect of the pandemic news on cryptocurrencies through the E-GARCH models, showing that both adverse and optimistic news have the same effect on Bitcoin returns. Based on the results of the nonlinear autoregressive distributed lag model, they argue that Bitcoin is resistant to the pandemic effects and can serve as a hedge during market turmoils. Hanif et al. (2023) inspect the connectedness in realised higher moments between cryptocurrencies, major stock markets, and commodities using the time–frequency connected models. The results partially challenge the ones of Gherghina and Simionescu (2023) as they uncover that cryptocurrencies, stocks, and commodities are highly interconnected in terms of volatility and jump components, as well as their higher moments. Conversely, gold and oil are argued to be a good hedge and a safe-haven investment within this wide portfolio. In a similar vein, Mensi et al. (2023) use the cross-quantilogram method on a set of cryptoassets together with gold, oil, and equity markets to show that the cryptoassets can serve as hedges, i.e. they are weakly correlated with the traditional markets, but not as safe havens as they tend to move together with the traditional markets during general drawdowns. Kristoufek (2022) uses the spillovers framework similar to Hanif et al. (2023) to argue that stablecoins do not function as ignition points to market bubbles in the cryptomarkets. Bouri et al. (2023) examine the ability of Bitcoin to react to the news more swiftly than the traditional financial markets and thus serve as a possible prediction factor for the US stock markets, reporting its significant predictive power.

Portfolio management topics are tightly connected to the spillovers and linkages topic in trying to avoid extreme negative co-movements. Bhuiyan et al. (2023) inspect the diversification potential of Bitcoin during the pandemic and the Russia-Ukraine war in the wavelets framework and compare its performance with gold as a traditional rival in the hedge—diversifier—safe-haven competition. Bitcoin turns out to be a decent hedger with low correlations mostly at the short-term horizons. Lv et al. (2023) deliver a theoretical treatment of the dynamic portfolio choice under uncertain rare events, which is characteristic for the cryptomarkets. They show that optimal choice is more significantly affected by price diffusion ambiguity than by jump ambiguity, and only trivially affected by volatility diffusion ambiguity. Investors then tend to be more aggressive during the stable markets but increase their portfolio positions during large volatility jumps. Again in a more methodological approach, Lorenzo and Arroyo (2023) explore mean–variance portfolio optimisation models sensitivity to uncertainty in the risk-return estimates which is crucial for such wild markets as the cryptomarkets are. They propose enhancing the mean–variance model with a pre-selection stage based on a prototype-based clustering algorithm to reduce the number of cryptoassets considered at each investment period. The method is applied to the entire cryptocurrency market and two other subsets, showing the method's superiority and suggesting that machine learning techniques provide an efficient tool to treat such wide markets.

The above-discussed high connectedness of the cryptomarkets raises alarms with possible market implosions and cascades of losses across the markets, often materialising in a herding behaviour of market participants. Studying the dynamics of such

dramatic events is also part of this special issue. Kukacka and Kristoufek (2023) use an extended cusp model on a set of popular cryptocurrencies, discussing the interactions between the fundamental and speculative components of the pricing dynamics, uncovering large differences across the studied assets. The price and return dynamics are argued to emerge from complex interactions between fundamental and speculative components, including episodes of price bifurcations. Both on-chain and off-chain metrics need to be studied to better understand the pricing dynamics. De Blasis et al. (2023) describe and analyse the Terra-Luna collapse of May 2022 within the BEKK model framework and discuss implications for stablecoin developers, exchanges, traders, and regulators.

And even though the research into cryptomarkets often focuses on the financial aspects, it is the regulations and regulatory uncertainty that might be problematic to quantify but they play an undisputable role in the future development of cryptocurrencies and their penetration into the standard system of functioning. Van der Linden and Shirazi (2023) explore the EU's "Markets in crypto-assets" (MiCA) regulation framework and whether it can help with future adoption. They argue that MiCA will most likely not accelerate the adoption of cryptoassets in the EU financial services sector, or less than intended. Kshetri (2023) goes into more detail and proposes a framework for understanding how the quality of formal institutions in promoting entrepreneurship drives the focus of such institutions concerning the initial coin offerings (ICO) using inductive analysis. The author discusses different approaches towards treating cryptomarkets regulation, depending on the general quality of the national entrepreneurship-related institutions, perceived threats to national and political interests, and their tax haven nature, often leading to crypto-ventures promotion on one side, and regulatory sandboxes on the other. Kraiyberg (2023) delves into one of the hype-phenomena of the last bull run, non-fungible tokens (NFTs), from the perspective of intellectual property rights and evaluates the likelihood that NFTs would replace existing mechanisms that protect producers' rightful claim to use their assets or the need to apply the legal code that governs the intellectual property rights. The study lays the building stones for further discussion and development in this area.

As is clear from the above, this special issue brings together a wide range of topics and interesting findings that strongly contribute to the existing topical literature. The cryptomarkets and their research remain a dynamic and fascinating area. Even during the perceived bear market and tranquillity of the last year or two, the necessity to understand the underlying mechanisms and interlinkages among cryptoassets and the outside remains. The depth and complexity of the whole system bring new topics almost on a weekly basis; and that is the case during the bear market. One may only look ahead to another (possible) bull market when the interest and the need for knowledge will get to another level.

Author contributions

All authors read and approved the final manuscript.

Declarations

Competing interests

The author declares that he has no competing interests.

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