sciendo

Cryptocurrency and Financial Stability: An Investigation into the Effects of Bitcoin ETFs

Paul Cristian DONOIU*
Bucharest University of Economic Studies, Bucharest, Romania
**Corresponding author, paul_donoiu@yahoo.com*

Abstract. *The approval of Bitcoin ETFs by the Securities and Exchange Commission (SEC) on 01/11/2024 was an essential event for both the cryptocurrency market and the traditional financial system. Bitcoin ETFs work as a bridge between digital assets and traditional financial instruments, contributing to increased liquidity and attracting new institutional investors who were reluctant before due to regulatory and security concerns. This study assesses the impact of the approval of Bitcoin ETFs on the stability of the financial system, focusing on the correlations and the volatility spillover effects of Bitcoin and three major financial indices (S&P 500, Dow Jones Industrial Average, and Nasdaq-100). Using Pearson Correlation, Time-Varying Parameter Vector Autoregression (TVP-VAR) and Generalized Autoregressive Conditional Heteroskedasticity (GARCH) models, this research offers a comprehensive analysis of the influence of Bitcoin on the dynamics of market. The results show that, although the correlations between Bitcoin and stock market indices reached a peak in 2021, they dropped later, suggesting a gradual decoupling from traditional financial markets. However, after the launch of Bitcoin ETFs in 2024, the correlations with financial indices – especially with S&P 500 – started to rise again, suggesting a reintegration of Bitcoin into the traditional financial system. Contrary to initial expectations, the results obtained from data covering 90 days before and after the launch of Bitcoin ETFs don't show a significant increase in short-term correlations, which suggest a smooth adaptation of the market to these new financial instruments. In addition, although Bitcoin ETFs contribute to the stabilization of cryptocurrency volatility, they introduced new types of intra-day fluctuations, highlighting the need for an advanced strategy of risk management. The study concludes that, while Bitcoin ETFs contribute to the stability of financial markets, they introduce systemic risks which require continuous surveillance from the regulatory authorities. Long-term implications of the approval of Bitcoin ETFs remain uncertain, hence more research is needed in order to comprehensively assess the impact of these new financial instruments on the global financial stability.*

Keywords: Bitcoin ETFs, the cryptocurrency market, financial stability, market volatility, systemic risk.

Introduction

The Securities and Exchange Commission (SEC) approved, on 01/11/2024, the launch of BTC ETFs, which represented a major event, both for the cryptocurrency market and for traditional markets (Babalos, Bouri & Gupta, 2024). Bitcoin ETFs are considered a bridge between the cryptocurrency market - marked by high volatility and regulatory issues - and traditional markets (Wu, 2024). The approval of Bitcoin ETFs comes after many years of debates about the impact of this category of assets on the financial system (Bondarenko and Soponar, 2024).

In the last decade, Bitcoin has evolved from a simple digital coin to a high-interest asset among investors, being considered a safe haven asset like gold (Ahmadirad, 2024). However, the extreme volatility of Bitcoin and the lack of a strict regulation led to a delay in the integration of these assets into investors' portfolios (Mazur & Polyzos, 2024). The connections between cryptocurrencies and traditional assets have been intensively studied since the introduction of the Bitcoin futures contracts (Chen, Xu & Yang, 2024).

DOI: 10.2478/picbe-2025-0221

The approval of Bitcoin ETFs is considered to be a boost for the cryptocurrency market in order to achieve its potential, leading to improved liquidity and less volatility (Olabanji, Oladoyinbo&Asonze, 2024). Bitcoin ETFs offer investors exposure to Bitcoin without actually owning the asset, reducing the risks associated with security and custody. Therefore, this new category of assets could attract new investors to the cryptocurrency market, who were reluctant until now because of the perceived risks (Augustin, Rubtsov, & Shin, 2023).

However, the introduction of Bitcoin ETFs has also posed significant challenges for the cryptocurrency market. The increased accessibility of Bitcoin has led to higher intraday volatility of the asset, while the lack of complex regulation remains an unresolved issue. These aspects emphasize the need for a robust legal framework and for efficient market surveillance mechanisms, in order to ensure the maximization of the benefits of Bitcoin ETFs and the minimization of their risks. In this context, this research aims to explore the impact of Bitcoin ETFs on the stability of global financial markets and to evaluate the extent to which they have influenced the connections between the cryptocurrency market and traditional markets.

Literature review

The introduction of Bitcoin ETFs has generated a high interest in the scientific community and recent studies have started to offer an increasingly clear picture of the mechanism by which this category of assets has influenced both the traditional markets and the cryptocurrency market. Initial studies showed that Bitcoin ETFs could reduce the volatility of the cryptocurrency market by increasing liquidity and attracting new types of investors, especially institutional investors.

For example, Babalos, Bouri & Gupta (2024) showed that after the introduction of Bitcoin ETFs, the correlations between Bitcoin and market indices like S&P 500 and Dow Jones have become more dynamic, suggesting a deeper integration of cryptocurrency in traditional financial markets. The conclusions of Nguyen, Conlon and Crane (2024) are similar, showing that the volatility of Bitcoin was relatively low in the short term, noting that ETFs could transfer volatility to other market segments, amplifying the risks during periods of financial stress.

The impact of Bitcoin ETFs on market volatility and stability

Bitcoin ETFs have often been promoted as an instrument to stabilize the cryptocurrency market, but the scientific literature shows a nuanced reality. Espel (2024) studied the intraday impact of Bitcoin ETFs on volatility and proved that while these instruments reduced the short-term volatility, they also introduced new forms of intraday volatility. Mazur and Polyzos (2024) also studied the evolution of the cryptocurrency market volatility following the launch of Bitcoin ETFs and found that, while the short-term volatility decreased, the long-term risks remain significant, especially during periods of financial stress.

Another relevant study, conducted by Lee and Park (2024), focuses on the impact of the Bitcoin ETFs on the volatility of the emerging markets. They demonstrated that the volatility of emerging markets, which are prone to large price fluctuations, has increased after the approval of Bitcoin ETFs. This phenomenon has been attributed to a contagion effect, in which the volatility of a major market, such as the cryptocurrency market, influenced the volatility of other markets. Park (2024) also suggests that high volatility, especially in periods of global economic stress, could affect the stability of financial markets, highlighting the need for additional protection and regulatory measures.

Chen and Yao (2024) explored the extent to which BTC ETFs influenced the volatility of developed financial markets. Their study highlighted that in markets with robust financial

infrastructure, the volatility generated by the Bitcoin ETFs was lower, due to more efficient mechanisms for controlling risks and because of a stricter regulatory framework. However, they showed that, even in these markets, Bitcoin ETFs led to an increase in the intraday volatility, which indicates that it is necessary to find continuous adjustment of risk management strategies.

Bitcoin ETFs and investors' behaviour

Investors' behaviour is another extensively studied aspect regarding the introduction of Bitcoin ETFs. Bondarenko and Soponar (2024) analyzed the psychological impact of the approval of Bitcoin ETFs and concluded that the investors' perception of cryptocurrencies has become more positive than before, which has led to a higher demand for Bitcoin and other digital assets. This change in perception was associated with an increase in price and volume. However, the authors warned about the risk of creating a speculative bubble, which could generate a drastic market correction.

Another study, conducted by Kim and Ahn (2023), evaluated how Bitcoin ETFs could influence the asset allocation decisions. According to the results, after the launch of Bitcoin ETFs, investors could allocate a higher proportion of their portfolios to investments in Bitcoin, due to easier access and better perception of risk. However, the Bitcoin ETFs could generate a higher risk of volatility, which would require adjustments in portfolio structure. Nakamoto and Lee (2024) bring additional details, showing that the perception of safety offered by Bitcoin ETFs led to a new wave of investors - who were reluctant to invest before - in the cryptocurrency market, which resulted in a fast increase in demand and price.

Moreover, Zhang and Tan (2024) studied the herd behaviour among investors after the launch of Bitcoin ETFs. They showed that, while more and more investors began to see Bitcoin as a valuable component of their portfolio, a herd behaviour was observed, with investors following the general trend without taking the risks into consideration. This behaviour led to significant price increases, but also to higher volatility when large numbers of investors decided to exit the market.

Bitcoin ETFs and the structure of traditional portfolios

The integration of Bitcoin in traditional portfolios through ETFs generated numerous concerns about asset diversification and financial risk management. Lamothe-Lopez and Lamothe-Fernandez (2024) proved that while investments in Bitcoin ETFs bring diversification benefits, they could generate new risks, such as volatility and uncertainty regarding regulations. The authors suggest that the long-term effects of Bitcoin ETFs approval on traditional portfolio structure should be carefully monitored, especially in the context of Bitcoin's high volatility and a lack of regulatory framework.

Moreover, Choi and Han (2024) studied the effects of Bitcoin ETFs on diversified portfolios and found that these financial instruments have a mixed impact. While Bitcoin ETFs bring diversification benefits to assets and offer large exposure to the cryptocurrency market for investors, they generated significant risks, especially during periods of high volatility. The authors emphasized the necessity of a more sophisticated strategy to mitigate risks in order to protect the portfolios against large price fluctuations. Smith and Jones (2024) also focused on risk management, proposing strategies which should include active management of the position in ETFs to mitigate the volatility risks. In another study, Wang and Lee (2024) assessed the long-term impact of the introduction of Bitcoin ETFs on traditional portfolios, noting that although these assets bring diversification benefits, they contribute to an increase in systemic risk, especially during high volatility periods. The authors stated that a constant review of the investment strategy

and a continuous adaptation to market conditions are necessary in order to effectively manage the above-mentioned risk.

To sum up, the scientific literature highlights the complexity and the impact of Bitcoin ETFs approval on global financial markets. On the one hand, these ETFs bring important opportunities for portfolio diversification and for the long-term stabilization of the cryptocurrency market. By attracting new institutional investors and by increasing liquidity, Bitcoin ETFs have ensured safer and easier access to digital assets, thus reducing the barriers to entry into the cryptocurrency market and opening new frontiers for investment. These advantages are relevant especially now, when cryptocurrencies are increasingly integrated in the global financial markets, with Bitcoin ETFs offering investors a regulated way to invest in digital assets.

On the other hand, these benefits come with significant risks that can't be ignored. The inherent volatility of cryptocurrencies represents a major challenge and the introduction of Bitcoin ETFs has brought new sources of instability, especially in the case of intraday transactions. Moreover, regulatory uncertainties and the contagion potential of the financial markets represent risk factors that could amplify the systemic instability. In this context, studies highlighted the urgent need for rigorous surveillance and adequate regulation in order to ensure the long-term stability of financial markets.

Methodology

The purpose of this study is to assess the impact of the Bitcoin ETFs approval on the stability of global financial markets, focusing on the mechanism by which these financial products influence correlations and spillover effects between cryptocurrencies and major financial indices. The main question of the research is: "What is the impact of the Bitcoin ETFs approval on the financial market stability?". This question is essential to understand if the integration of Bitcoin with the traditional financial instruments, such as ETFs, contributes to a more stable market or, on the contrary, adds new types of volatility which could affect the global financial stability.

Data description

We used a complex dataset for the analysis, which includes both long-term daily returns, collected for a period of ten years and high frequency intraday data, collected for an interval of 90 days before and after the ETFs approval. The indices analyzed in this study are S&P 500, Dow Jones Industrial Average (DJIA) and Nasdaq 100. This dataset offers a comprehensive perspective of the correlations between the evolution of Bitcoin and major financial indices during periods with high volatility and in the period surrounding the approval of Bitcoin ETFs.

Methods

To assess the impact of the approval of Bitcoin ETFs on the stability of the financial markets, we used three main analytical methods: Pearson Correlations, Time-Varying Parameter Vector Autoregressions (TVP-VAR) and a combination of Generalized Autoregressive Conditional Heteroskedasticity (GARCH) Model and TVP-VAR. These methods allowed us to comprehensively analyze both the static and the dynamic relationships between Bitcoin and major financial indices, providing a detailed perspective on the influence of the Bitcoin ETFs introduction on the market volatility.

Pearson Correlation is a statistical method used to evaluate the linear relationship between two variables. In this study, Pearson Correlation was used to assess the correlations between Bitcoin and the three main financial indices analyzed in this study. The Pearson Correlation coefficient returns a value between -1 and 1, where 1 equals a perfectly positive correlation, -1

equals a perfectly negative correlation and 0 means that there is no correlation. We used that method in order to primarily evaluate the relationship between Bitcoin and traditional financial markets, before applying more complex methods. For this study, Pearson Correlation provides a basis for comparison for the subsequent evaluation of the correlations between the studied assets (Taylor, 2015).

TVP-VAR is an econometric model that allows the parameters to vary over time, thus capturing the evolution of the correlations between variables in a more flexible way than traditional VAR models, which assume the stability of the coefficients. This model was used to assess how the correlations between Bitcoin and major financial indices evolve over time, especially surrounding the approval of the Bitcoin ETFs. TVP-VAR is essential to capture the structural changes that could occur in financial markets after some major events, such as the introduction of Bitcoin ETFs. Due to the time-varying parameters, this model offers a dynamic perspective on the correlations between Bitcoin and traditional financial markets (Primiceri, 2005).

The GARCH model is used to analyze the conditional volatility of returns, capturing the dynamics of price variability over time. These models are particularly useful in financial markets, where the volatility is not constant, fluctuating depending on various events with economic impact. In this study, GARCH model was used to separate the inherent volatility of the markets from the normal price fluctuations. Subsequently, a TVP-VAR model was applied on the standardized residuals of GARCH model in order to evaluate the correlations between the volatility of Bitcoin and main financial indices after the approval of Bitcoin ETFs. This method allowed us a deeper understanding of the volatility dynamics and of the way in which they influence each other in a dynamic context (Bollerslev, 1986; Eagle and Kroner, 1995).

We chose these methods to obtain a detailed perspective on the static and dynamic correlations between Bitcoin and major financial indices. Pearson Correlation offers a primary assessment of the linear relationships, while TVP-VAR captures the dynamics of these correlations surrounding some major events with economic impact. The GARCH model in combination with TVP-VAR applied on standardized residuals offers a deeper perspective on the volatility of the markets and on the correlations between traditional financial markets and the cryptocurrency market, highlighting the impact of the approval of the Bitcoin ETFs on the financial stability.

While the methodology used offers a solid perspective on the market dynamics around the approval of Bitcoin ETFs, there are some limitations, such as those related to the assumptions about volatility distribution. Both GARCH model and TVP-VAR assume a specific distribution of volatility that can't capture all the aspects of the market behaviour, especially in emerging markets or the cryptocurrency market. For example, extreme volatility or rare events (known as black swan events) can't be fully detected by these models, which may lead to an underestimation of actual risks in financial markets.

Results and discussions

Figure 1 illustrates the evolution of the daily correlations between Bitcoin and the three main financial indices in the last ten years. Around 2021, the correlations peaked, showing a period with high volatility and an increased interest of the investors for Bitcoin. After this peak, the correlations started to fall, suggesting a gradual decoupling of Bitcoin from traditional markets. However, the launch of Bitcoin ETFs in January 2024 triggered a significant shift, with the correlations starting again to rise. This rebound shows a recoupling of Bitcoin with traditional markets, especially with S&P 500, which showed a higher sensitivity Bitcoin price fluctuations.

Figure 2 completes the analysis, showing the daily correlations between the three main financial indices and Bitcoin, but this time from the perspective of how the indices influence on Bitcoin. Similar to results presented in Figure 1, the correlations rose significantly until 2021, highlighting a powerful relationship between traditional financial markets and Bitcoin. After 2021, the influence of traditional financial markets on Bitcoin started to fall, which suggest a temporary independence of Bitcoin from the traditional financial markets. However, the launch of Bitcoin ETFs in January 2024 reversed this trend and the correlations started again to rise. This trend suggests that Bitcoin has once again become more susceptible to the influence of traditional financial markets, especially in relation to S&P 500.

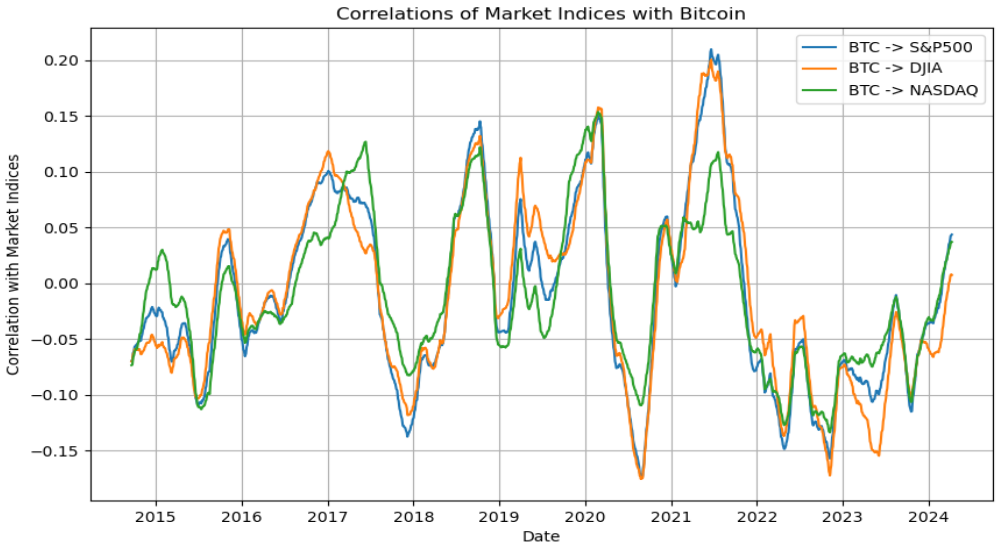

Figure 1. Correlations between BTC and Stock Indices (daily data; TVP VaR on returns)
Source: Authors' own research.

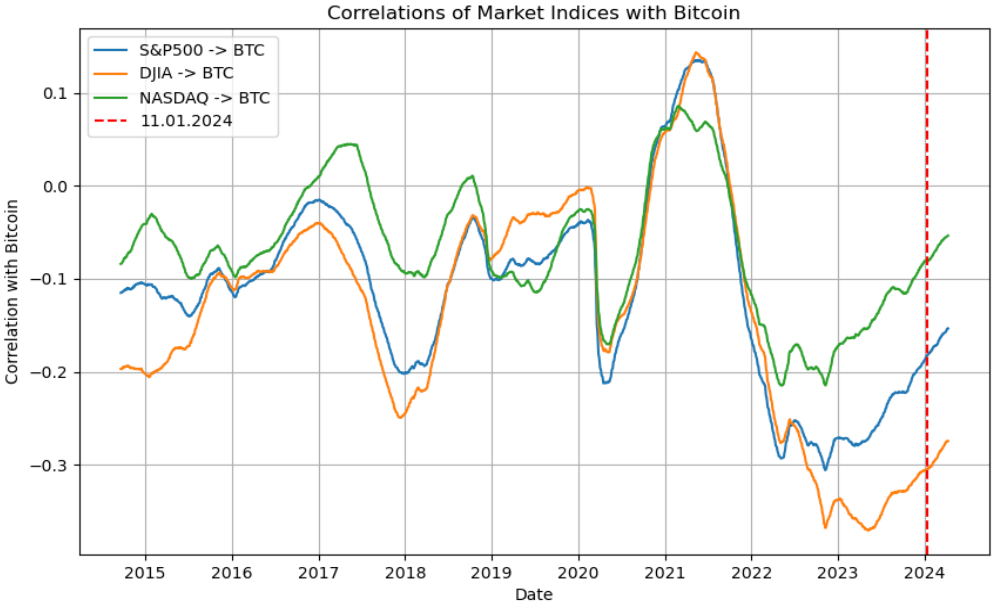

Figure 2. Correlations between Stock Indices and BTC (daily data; TVP VaR on returns)
Source: Authors' own research.

Next, *Figure 3* presents the Pearson correlations between Bitcoin and the three main financial indices 90 days before and after 01/11/2024. Contrary to initial expectations, the results don't indicate a significant increase of the correlations after the approval of Bitcoin ETFs. Thus, the correlations remained relatively stable, suggesting that the introduction of Bitcoin ETFs did not produce a significant change in the correlations between Bitcoin and traditional financial markets. This stability of correlations may be interpreted as an indication that markets quickly and efficiently integrate this new financial product, without causing major financial turbulence.

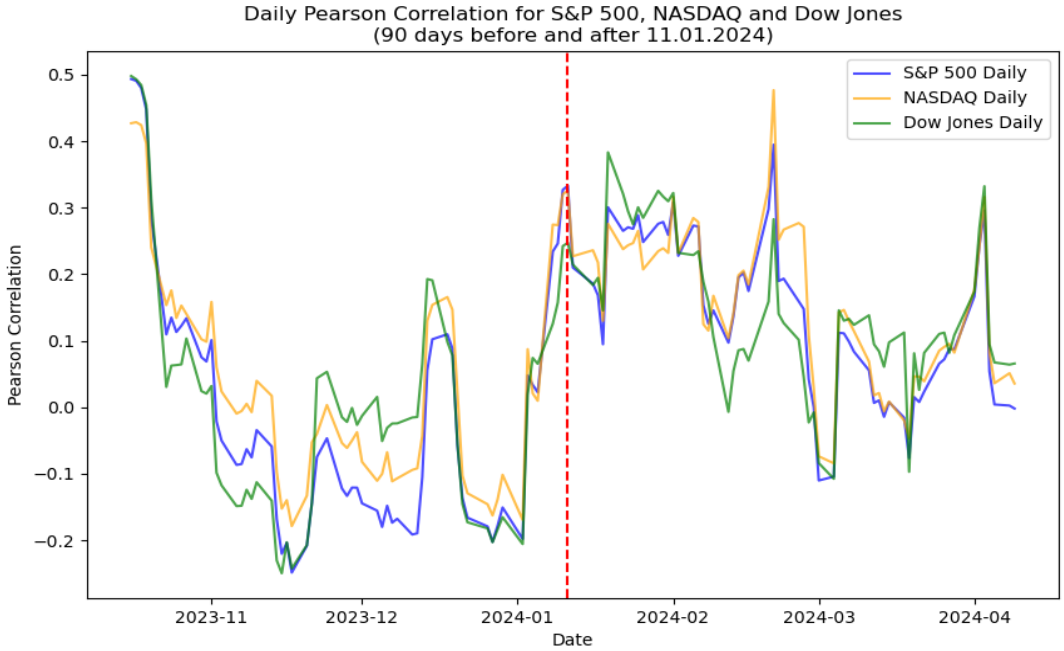

Figure 3. Pearson Correlations – Daily Data, 90 Days Before and After the Reference Date
Source: Authors' own research.

For a more detailed analysis of the volatility dynamics and of the mutual influence between Bitcoin and traditional markets, *Figure 4* presents the daily correlations between Bitcoin and the three main financial indices, using the TVP-VAR model applied to GARCH standardized residuals. As we can see, in the 90-day period, the correlations remained stable, with a slight upward trend after the Bitcoin ETFs approval. This relatively high stability suggests that Bitcoin maintained a stable relationship with stock markets and the introduction of Bitcoin ETFs didn't significantly alter the correlations between these assets. This situation reflects an effective integration of Bitcoin with traditional markets, without unexpected volatility.

Figure 5 presents the daily correlations between the three major financial indices and Bitcoin, using the same TVP-VAR model applied to GARCH standardized residuals. The difference is that Figure 5 shows how traditional financial markets influenced Bitcoin in the 90-day interval. Similar to Figure 4, the correlations remained stable, suggesting that financial markets and Bitcoin maintained a stable, well-integrated relationship. The stability of these correlations after the approval of Bitcoin ETFs highlights that, while Bitcoin was influenced by the price movements in traditional markets, this impact didn't result in significant changes in its volatility.
To assess the intraday correlations, *Figure 6* presents histograms showing the distribution of the Pearson Correlation coefficients between Bitcoin and the analyzed financial indices based on 5-minute frequency data. After the launch of Bitcoin ETFs on 01/11/2024, the distribution of

correlations shows a slight shift toward higher values, which suggests a short-term increase of interconnection between Bitcoin and traditional financial markets. However, the distribution remained fairly wide, indicating that the relationship between Bitcoin and traditional financial markets continued to be variable and sensitive to rapid market changes.

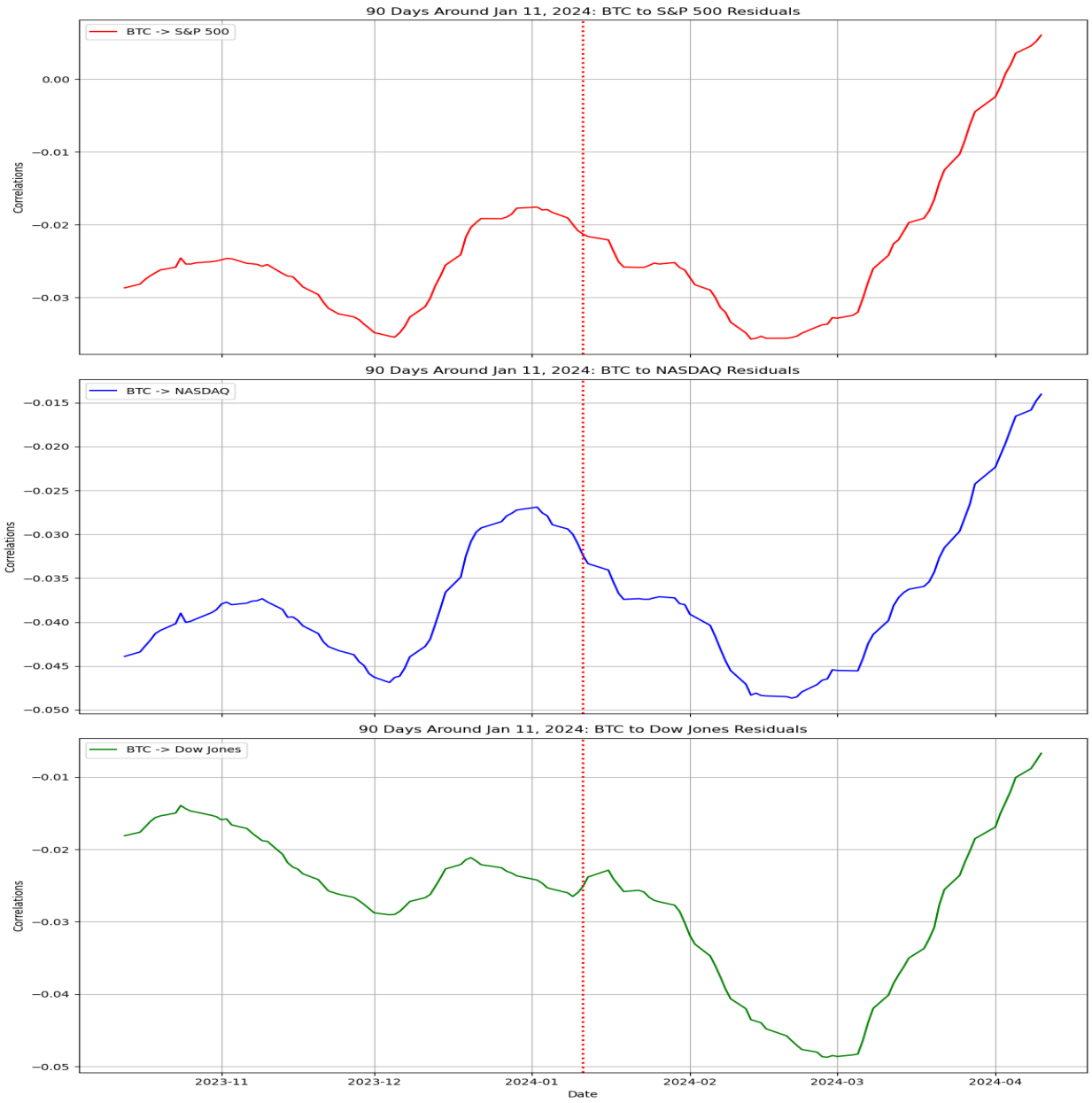

Figure 4. Correlations between BTC and stock indices (daily data; TVP VaR on standardized residuals)

Source: Authors' own research.

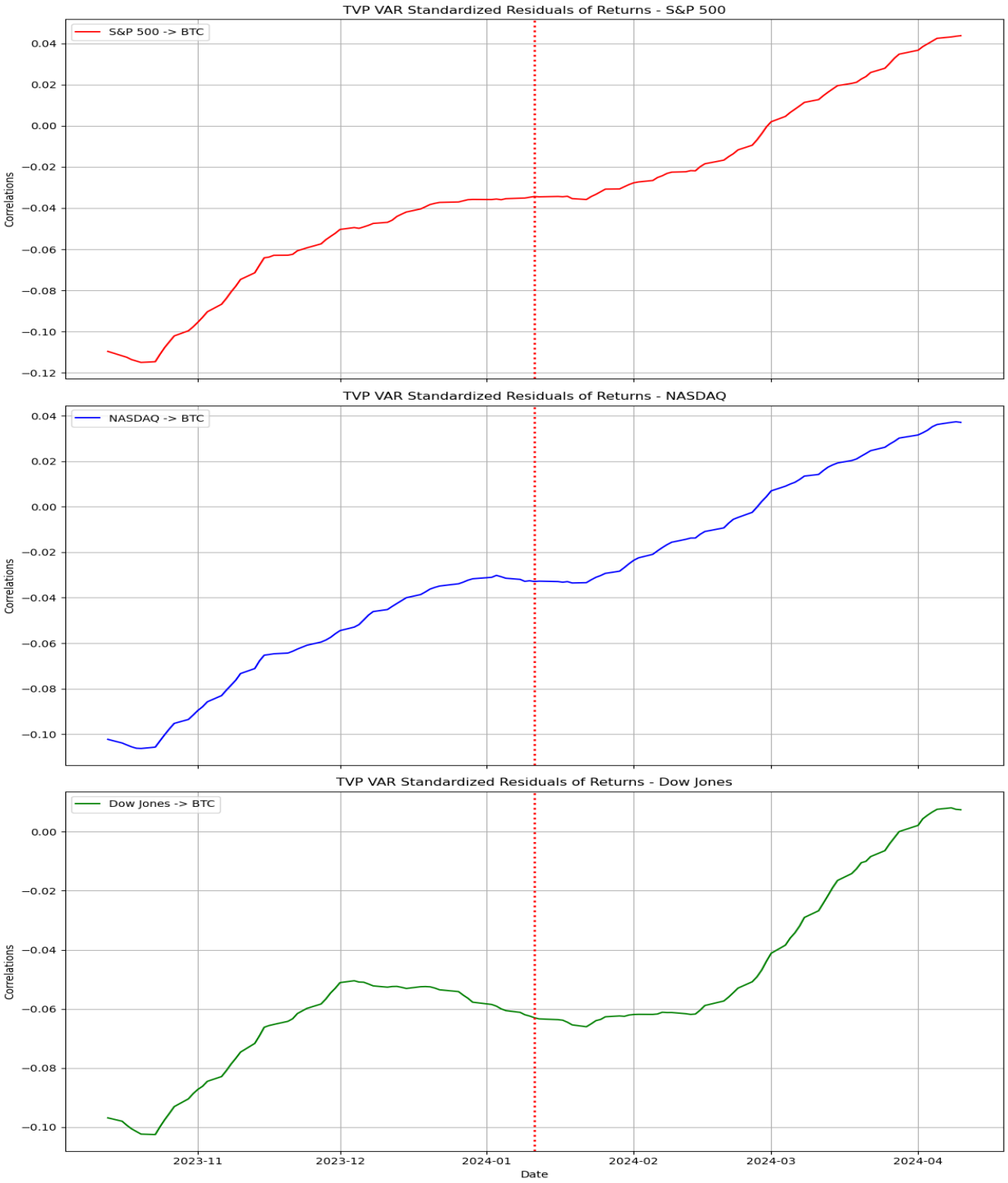

Figure 5. Correlations between Stock Indices and BTC (daily data; TVP VaR on standardized residuals)

Source: Authors' own research.

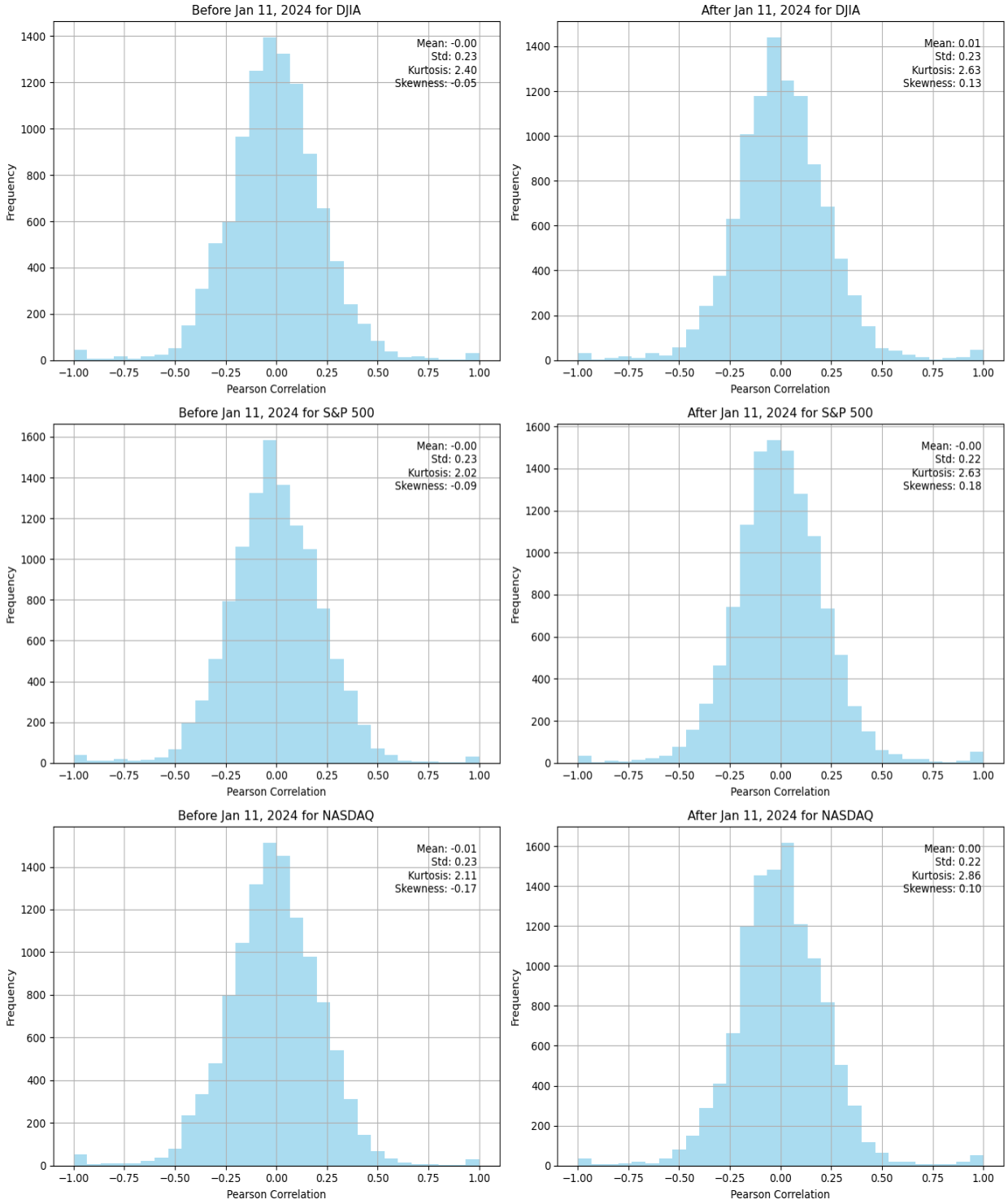

Figure 6. Histograms on the Distribution of Pearson Correlation Values – 5-minute data

Source: Authors' own research.

Next, *Figure 7* presents the correlations between Bitcoin and the analyzed financial indices 90 days before and after the approval of Bitcoin ETFs. The graphs on the left show the influence of Bitcoin on financial indices, while the graphs on the right present the reverse relationship. After the approval of Bitcoin ETFs, it can be observed increased correlations between the analyzed assets, indicating a potential increase in the integration of Bitcoin and traditional financial markets. However, around March 2024, the graphs on right show a fast decrease in the value of correlations, indicating a temporary diminution of the influence of traditional financial markets on Bitcoin, followed by a comeback at higher levels, which suggests a subsequent stabilization.

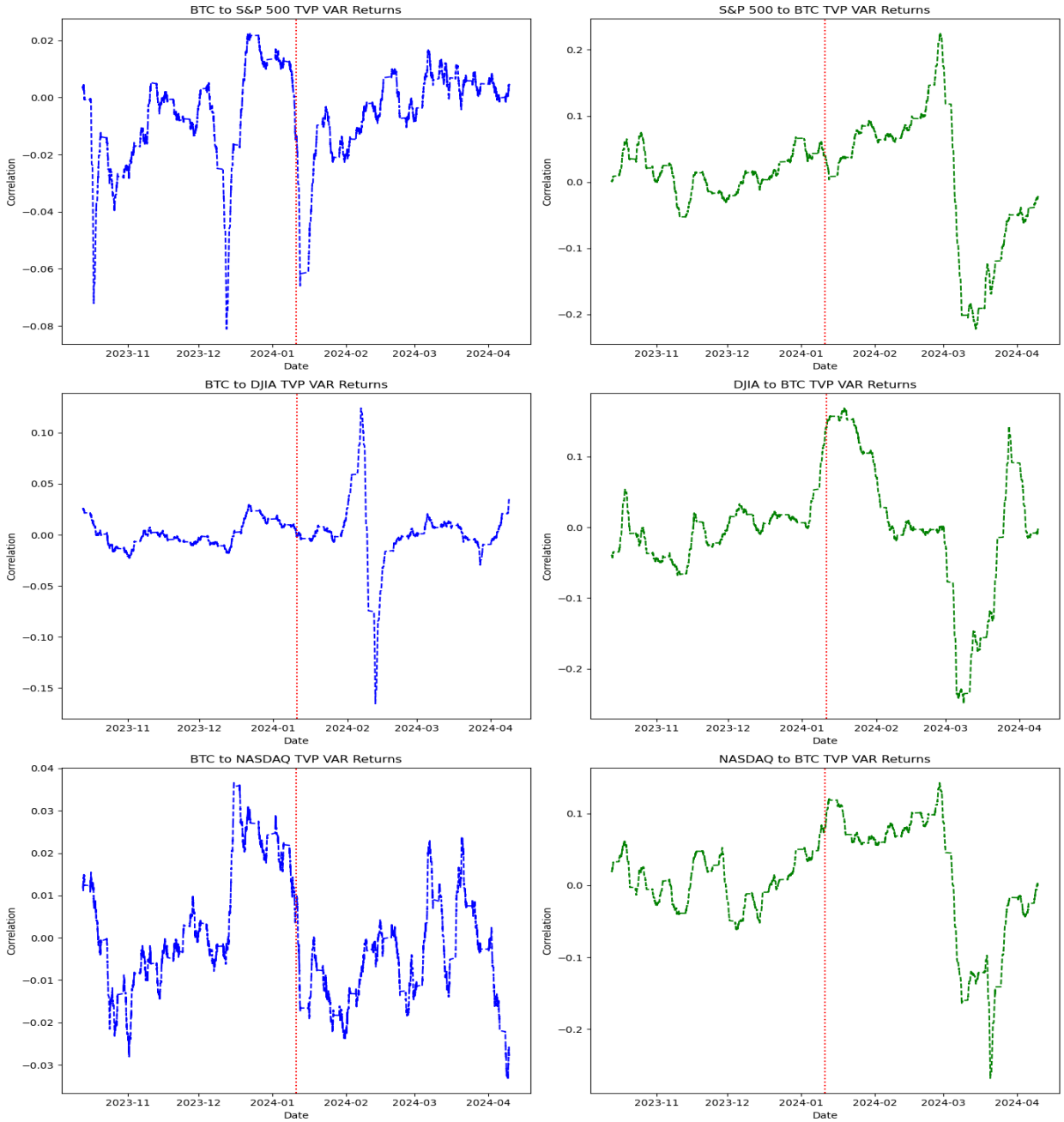

Figure 7. TVP VaR on Returns (5-minute data)

Source: Authors' own research.

In addition, to further understand the volatility dynamics and the interconnectedness between Bitcoin and traditional financial markets at the intraday frequency, *Figure 8* presents the correlations between Bitcoin and the three major financial indices, using the TVP-VAR applied on GARCH standardized residuals, computed using 5-minute frequency data. The results indicate that, after the launch of Bitcoin ETFs, the correlations fluctuated without displaying a clear trend. These fluctuations illustrate a persistent instability of the relationship between Bitcoin and the analyzed financial indices, suggesting that, even though Bitcoin has become more interconnected with traditional markets, the relationship remains complex and sensitive to rapid market changes.

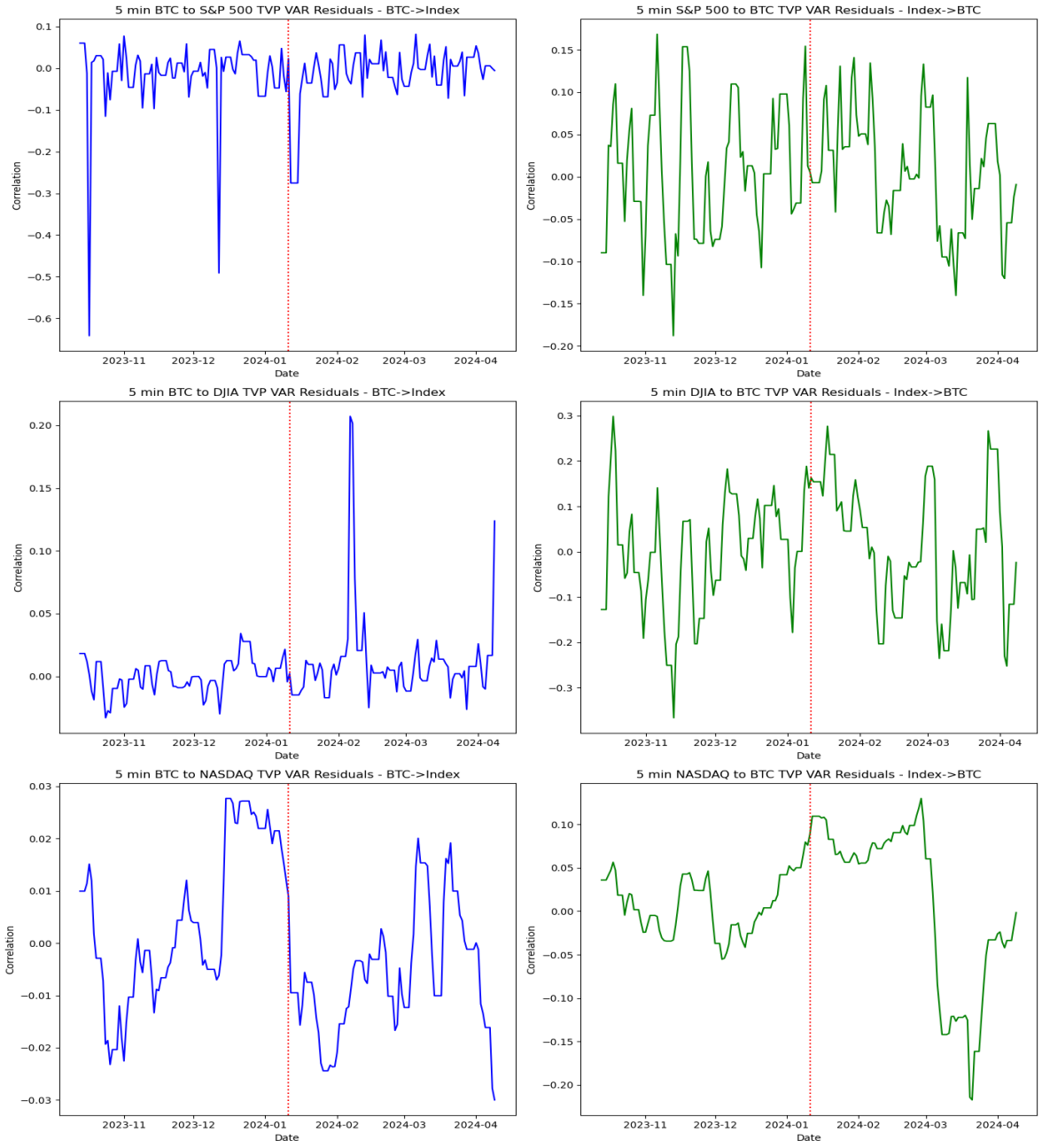

Figure 8. TVP VaR on Standardized Residuals (5-minute data)

Source: Authors' own research.

Another aspect that should be further researched is the relationship between Bitcoin ETFs and macroeconomic variables such as inflation, central bank interest rates or interbank interest rates. Judging by the fact that financial markets react to monetary policy decisions, it is possible that Bitcoin ETFs may exhibit different correlation patterns in response to macroeconomic shocks. A deeper analysis may show if Bitcoin ETFs act as hedging instruments or, on the contrary, they amplify market volatility in periods of economic uncertainty.

The results obtained in this study show that Bitcoin ETFs contribute to market integration without creating excessive volatility. The gradual reintegration of Bitcoin with traditional financial markets, especially after the launch of Bitcoin ETFs, indicate that the progress in regulation and institutional mass adoption play an essential role in the dynamics of cryptocurrencies. Although our conclusions don't indicate major immediate changes in correlations, the long-term impact remains uncertain. The future market fluctuations, the institutional strategies and the evolving regulations may influence the stability of Bitcoin. These results highlight the importance of continuous monitoring and of a flexible approach in regulation in order to balance innovation and security in the cryptocurrency market.

Conclusions

The approval and introduction of Bitcoin ETFs significantly influenced both the cryptocurrency market and traditional financial markets, contributing to a more profound integration of these markets. This study analyzed the correlations and the volatility spillover effects between Bitcoin and three major financial indices (S&P 500, Dow Jones Industrial Average and Nasdaq-100) in order to assess the specific impact of these financial instruments.

The results show that the correlations between Bitcoin and traditional financial markets reached a peak in 2021, followed by a period of gradual decoupling. However, after the approval of Bitcoin ETFs in January 2024, the correlations began to increase again, especially with S&P 500, indicating a reintegration of Bitcoin with traditional financial markets. However, short-term data (90 days before and after the approval) don't suggest drastic changes in market behaviour, which indicates that the financial system has efficiently absorbed the impact of the ETFs introduction, without causing major instability.

Regarding volatility, Bitcoin ETFs contribute to market stability by increasing liquidity and attracting new institutional investors. However, these instruments also introduced new sources of intraday volatility, highlighting the importance of solid risk management strategies. Moreover, concerns persist about the long-term systemic risk, especially without a globally uniform regulatory framework.

Considering these perspectives, future research should focus on the long-term market reaction to Bitcoin ETFs, especially on the impact of these instruments on the global financial stability in periods of economic recession. Moreover, future research should analyze the way in which the legal framework can be optimized in order to balance the benefits of the Bitcoin ETFs with the potential risk that these financial instruments may pose to both the cryptocurrency market and traditional financial markets.

Furthermore, the emergence of quantum computers represents a possible challenge for the cryptographic fundamentals of Bitcoin and other digital assets. As quantum algorithms evolve, concerns about the blockchain security and integrity could influence investor trust and the regulatory policies. Future research may analyze the advancements in quantum computing and how they may reshape the stability and the adoption level of Bitcoin ETFs within the traditional financial system.

References

Babalos, V., Bouri, E., & Gupta, R. (2024). Does the introduction of US spot Bitcoin ETFs affect spot returns and volatility of major cryptocurrencies.

Bollerslev, T. (1986). Generalized autoregressive conditional heteroskedasticity. *Journal of Econometrics, 31(3),* 307-327.

Bondarenko, N., & Soponar, P. (2024). Bitcoin ETF approval: Catalyst for crypto realization and augmented real-world utility.

Choi, H., & Han, S. (2024). The influence of Bitcoin ETFs on diversified portfolios: A risk management perspective. *Journal of Portfolio Management.*

Engle, R. F., & Kroner, K. F. (1995). Multivariate simultaneous generalized ARCH. *Econometric Theory, 11(1),* 122-150.

Espel, T. J. (2024). Impact of US Bitcoin ETF introduction on BTC and ETH intraday regime seasonality.

Kim, J., & Ahn, S. (2023). Bitcoin ETFs and asset allocation: A new frontier for institutional investors. *Journal of Financial Economics.*

Lee, J., & Park, H. (2024). Bitcoin ETFs and emerging market volatility: A contagion effect? *Emerging Markets Review.*

Mazur, M., & Polyzos, E. (2024). Spot Bitcoin ETF.

Primiceri, G. E. (2005). Time varying structural vector autoregressions and monetary policy. *The Review of Economic Studies, 72(3),* 821-852.

Smith, D., & Jones, A. (2024). Managing volatility: Advanced strategies for Bitcoin ETFs. *Journal of Investment Strategies.*

Taylor, S. J. (2015). *Asset price dynamics, volatility, and prediction.* Princeton University Press.

Wang, L., & Lee, C. (2024). Long-term impacts of Bitcoin ETFs on traditional portfolios: Risk and return perspectives. *Global Finance Journal.*

Zhang, L., & Tan, X. (2024). The herding effect and Bitcoin ETFs: Behavioral finance perspectives. *Journal of Behavioral Finance.*

This paper was co-financed by The Bucharest University of Economic Studies during the PhD program.