

The influence of bitcoin trading on the market capitalization of banking institutions

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Abstract. This study investigates the relationship between Bitcoin trading activity and the market capitalization of commercial banks in Thailand. It addresses a research gap by examining whether Bitcoin trading influences banking-sector valuation after controlling for key macroeconomic determinants. The analysis uses daily and weekly observations from 2013 to 2020, covering the aggregate market capitalization of eleven commercial banks listed on the Stock Exchange of Thailand (SET). Multiple linear regression analysis was employed to estimate the effect of Bitcoin trading volume while controlling for inflation (CPI), lending interest rates (MLR), the nominal effective exchange rate (NEER), and gross domestic product (GDP). The findings reveal a statistically significant positive relationship between Bitcoin trading volume and commercial bank market capitalization, supporting the complement effect rather than the substitution effect. Inflation, lending interest rates, and the exchange rate also significantly influenced banking-sector market capitalization, whereas GDP produced mixed results across data frequencies. These findings provide evidence that technological innovation and macroeconomic conditions jointly shape banking-sector valuation in an emerging economy.

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1. INTRODUCTION

The fast evolution of digital technologies has dramatically changed the shape of the global finance industry by creating new opportunities and challenges to traditional financial institutions. (Kang et al., 2025; Le, 2025). Within these innovations, cryptocurrencies, have appeared to be one of the most important advances in the history of contemporary finance. Cryptocurrencies first emerged in 2009 with the launch of Bitcoin, and they have gained attention from investors, financial institutions and policymakers since then due to their decentralization and role in global capital markets (Kang et al., 2025). With Bitcoin trading

growing every more, the question is whether or not it may disrupt banking at all, and if cryptocurrencies act as complements to banks or as competitors (Zeiß et al., 2024).

Commercial banks continue to be essential for economic growth, through their role as financial intermediaries, providing payment services and extending credit. But as cryptocurrency markets have grown rapidly, banks seeking to automate their offerings and digital asset services by deploying leading financial technologies & blockchain applications are driving rapid digital transformation. As a result, the impact of cryptocurrency trading on banking performance has gained more importance with researchers, investors and regulators. Although some scholars have argued that cryptocurrencies could decrease the need for traditional financial services, others conclude that technological innovation compels banks to innovate to be competitive and develop new business opportunities (Hoxha et al., 2022).

Despite the abundant work that has been performed examining cryptocurrency price behaviour, investment returns, blockchain technology, and other financial market volatility measures; limited empirical literature exists to investigate how Bitcoin trading activity influences commercial bank capitalisation. Most previous research investigates cryptocurrency markets with respect to other cryptocurrency markets while little is offered on the interaction between crypto and traditional banking systems (especially in emerging economies). Hence, there is still a lack of proper evidence explaining Bitcoin trading effects on banking sector valuation (Le, 2025; Di Casola et al., 2025). Why Thailand is a great background for this analysis: The Thai banking industry has seen digital transformation explode over the past 5 years and more uniquely, citizens have demonstrated high propensity towards investing in cryptocurrency. Long gone are the days when commercial banks were focused solely on adapting to technology disruption by investing in digital financial services and changing consumer behaviour. Thus, it matters not only for the regulation of financial markets but also for how we evaluate the competitive-ness and stability of the banking market as a whole – or put differently, how much does Bitcoin trading impact on total banking market cap. On top of the cryptocurrency trading activity, investors' expectations and banking performance are also subject to macroeconomic conditions. Many factors directly influence the performance of financial markets; inflation, lending interest rates, exchange rates and gross domestic product (GDP) are probably among the most widely recognised. Including these variables gives a better fit to bank market capitalization change and permits us to test Bitcoin trading in the context of other fundamental macroeconomic factors. (Sharma et al., 2024; World Bank, 2025).

Thus, this research examines the impact of Bitcoin trading volume on the market capitalization of listed commercial banks in Stock Exchange of Thailand with controlling macroeconomic variables. The results of this paper are relevant to the literature on cryptocurrency, financial innovation and banking by contributing new empirical evidence from an emerging economy setting with practical implications for commercial banks, investors and policymakers striving to reconcile far-reaching technological innovation with a broader need for financial stabilisation.

2. LITERATURE REVIEW

2.1. Bitcoin trading and banking market capitalization

Bitcoin has revolutionized the world of finance with a decentralized, digital currency that came along without structured intermediaries from an outside authority. Bitcoin, as opposed to traditional financial assets, uses blockchain technology which allows individuals to process peer-to-peer bitcoin transactions without the need of commercial banks or central authorities. Bitcoin has had a dramatic rise in market cap as well as trading since its inception in 2009 with Bitcoin processing \$529 billion worth of transactions on the blockchain globally. The swift growth has captured the attention of institutional investors, commercial

banks, policy makers and financial regulators as they grapple with the questions surrounding the interplay between cryptocurrency markets and traditional banking institutions (Budish, 2025).

The rising popularity of Bitcoin has created two divergent theoretical views about its impact on commercial banks. The first view, often known as the substitution effect, says that cryptocurrencies directly compete for traditional banking services. Bitcoin allows people and businesses to send money and store value, online nearly free of charge anywhere in the world without relying on commercial banks. As such, an increase in the adoption of cryptocurrency may result in a curtailing of demand for traditional banking services such as payment processing, foreign exchange transactions and financial intermediation. In that sense, increased Bitcoin-related trading might result in a negative impact on investors' expectations of banks' future profitability, making the value of bank equity lower (Kang & Lee, 2024; Chen & Phelan, 2025; Mutanda & Nomlala, 2025).

Conversely, complement effect argues that development of cryptocurrency facilitates commercial banks to push forward digital transformation and technology innovation quickly. Cryptocurrency has in fact pushed commercial banks to drive for technological upgrades so as to keep pace with the changing environment, utilize blockchain technology, enhance digital payment systems, and also build custodial solutions for digital assets and further strengthen financial technology capabilities. Unlike the two above, many international banks have invested in blockchain-only applications and several financial institutions explored products related to cryptocurrency as well as central bank digital currency (CBDC) initiatives. Thus, the trading activity with bitcoin can promote technological change and long-term competitiveness of commercial banks and therefore positively impact their market capitalization (Zeiß et al, 2024).

Findings on the effect of Bitcoin trading activities on banking sector performance are still ambiguous. Some studies indicate that the cryptocurrency market is putting pressure on financial institutions due to providing better investment opportunities, as well as decentralized financial markets. The second one is that more and more capital flows to some digital assets, which will bring different stages of impacts on the liquidity, transaction volume and investment behaviour in commercial banks. On the other hand, some studies state that cryptocurrency development stimulates banks to offer diverse financial services, enhance operational efficiency using digital technologies, and build strategic partnerships with financial technology companies. The seemingly contradictory conclusions also demonstrate that the impact of Bitcoin trading on banking performance is heterogeneous across institutional context, regulatory scope, and financial market development stage (Di Casola et al., 2025). A recent systematic review of 21 empirical studies likewise reports that just over half (52.4%) find negative effects of cryptocurrency integration on economic growth and stability, while others document benefits such as improved financial inclusion (Mutanda & Nomlala, 2025).

Market capitalization is one of the most relevant investment indicators that shows how much confidence and optimism investors have in a firm about its future performance and growth. The market capitalization of commercial banks reflects generous anticipation of profitability, operational efficiency, financial soundness, technological professionalism and opportunity for the future business. Therefore, fluctuations in Bitcoin trading volume can indirectly leak to banking market capitalization via investor sentiment perception of the banking sector. Investors might treat cryptocurrencies as alternatives to traditional banking operations, or they may view a technology breakthrough as further opportunity for banks to bolster their competitive edge when the cryptocurrency market is at its zenith. Hence, investors' perception of the banking industry's outcomes to digital financial transition ultimately determines the results. (Benetton et al., 2024).

The relationship of Bitcoin trading and banking market capitalization may be especially significant in developing economies like Thailand. Thailand has seen substantial expansion in a digital financial service, electronic payment systems and investment in cryptocurrency over the recent ten years. Digital

transformation strategies have simultaneously been accelerated by commercial banks, through expanding mobile banking platforms and electronic payment infrastructure along with financial technology investments (Tuli, 2024; Nguyen & Nguyen, 2024; Malaquias & Hwang, 2025). The growth of Bitcoin creates a further context for this changing financial environment, in which it makes sense to ask whether increasing trading activity in Bitcoin has an impact on how investors view banks. Emerging financial markets have varied characteristics in terms of institutional structures, regulatory systems and technology adoption relative to the developed economies; thus, empirical findings from Thailand offer substantial value in broadening up existing literature (Sharma et al., 2024; Zeiß et al., 2024; Okoli, 2025).

Although there is an increasing number of studies on cryptocurrency markets, as the market has grown significantly very few have investigated what happens to activity in Bitcoin trading relative to commercial banks market capitalization, especially when controlling for key macroeconomic conditions. Previous studies have focused primarily on cryptocurrency returns, price volatility, the adoption of blockchain technology or portfolio diversification but there is a relative lack of empirical evidence explaining how trading Bitcoin impinges upon bank valuations. This gap is particularly pronounced in developing economies where digital financial transformation continues to alter the competitive environment of commercial banking (El Hajj & Farran, 2024; Le, 2025). The theoretical arguments and empirical results mentioned above suggest that the relationship between Bitcoin trading volume and banking market cap is more complicated than what we previously thought, hence need to be examined empirically. Consequently, this study presents the following research hypothesis:

H1: Bitcoin trading volume significantly influences the market capitalization of commercial banks.

2.2. Macroeconomic determinants of bank market capitalization

Market capitalization of commercial banks is different across firms and a function of the macroeconomic environment that financial institutions find themselves in. Macroeconomic variables affect an investors' expectation of profitability, solvency, credit demand and economic growth. Therefore, the changes in economic condition can directly impact stock market pricing and the capitalisation of banks. Empirical studies have consistently shown that macroeconomic indicators are drivers of banking sector performance as they affect the banks' operation as well as investor expectations regarding their future business prospects (Schiereck et al., 2024; Khan et al., 2024).

Inflation, while by no means the only macroeconomic variable that is analysed, is one of the most important influences with respect to financial market performance. It affects purchasing power, production costs, monetary policy dynamics and consumer spending behaviour. While moderate inflation may drive economic activity and more demand for banking services, high levels of inflation that persist can lower real returns from investments, create greater financial uncertainty, and undermine the confidence of investors. Inflation thus impacts the commercial channel of lending activities, deposit growth, operating costs and interest income for banks. As such, the market value of banking institutions is postulated to be affected by changes in inflation through its impact on profitability and financial stability (Karkowska et al., 2025).

Another key macroeconomic indicator of banking performance, is lending interest rates. Interest rates influence borrowing costs, credit demand and also banks net interest margin as well as investment choices. Moreover, while an increase in lending rates results in some immediate benefit for banks through an increase in interest income, it also tends to moderate loan demand and raises credit risks. This leads to an increase in banks' profits as the demand for credit far outstrips supply; on the other hand, lower lending rates normally boost borrowing and economic activity but may also ultimately undermine them. Investors track interest rate moves in the banking sector closely because of a heavy reliance on lending operations for much of banks' revenue (Raftis et al., 2024).

Movements in the exchange rate will also indirectly affect the capitalization of banks operating in commodity-type markets through international trade, capital flows and foreign investment in real or other financial assets. Exchange rate fluctuations influence the profitability of exports, the cost of borrowing from abroad and other international financial transactions. Exchange rate fluctuations are likely a source of uncertainty for corporate profits and as well as financial market stability in emerging economies. As a result, foreign loss exposure may not affect banks but external exposures for those commercial banks dealing with the exchange rate or international financing activities can impact profitability by undergoing forex fluctuations. So, exchange rate stability is seen an important parameter in shaping investor confidence and value of banking institutions. (Kohlscheen et al., 2024; Mamonov et al., 2024).

GDP, or Gross Domestic Product, is among the most complete measures of economic performance and business activity. In general, economic growth will lead to an increase in household consumption, corporate investment, job growth, and credit demand, creating more favourable conditions for commercial banks' business operations. Banks are largely benefiting from strong loan demand, better asset quality and improved profitability, all factors that lead to a higher market capitalization when the economy is growing strongly. However, economic slowdowns tend to limit lending activity, increase credit risk, and turn off investor interest. Thus, GDP growth is one of the prominent macro variables known to affect banking sector valuation (Moudud-Ul-Huq et al., 2024).

While these macroeconomic factors have been thoroughly analysed in banking and financial market research, the joint impact of cryptocurrency trading activity on these factors has received comparatively less empirical consideration. Many prior studies either examine the macroeconomic factors affecting stock market performance or the behavior of cryptocurrency markets in isolation. It is more informative if describing the interactions between technological and macroeconomic -further, integrating Bitcoin trading volume with inflation, lending interest rates, exchange rate, and GDP in a single empirical framework would yield additional insights into how together they affect market capitalisation of commercial banks at the centre of this mechanism for emerging economies such as Thailand (Di Casola et al., 2025; Moudud-Ul-Huq et al., 2024). The macroeconomic controls are also interrelated: evidence from Indonesia shows that inflation Granger-causes interest rates and that the exchange rate affects inflation (Aji et al., 2021), which supports estimating them jointly in one model.

From the theoretical reasoning and previous empirical evidence, we formulate the following hypotheses:

H2: Inflation significantly influences the market capitalization of commercial banks.

H3: Lending interest rates significantly influence the market capitalization of commercial banks.

H4: Exchange rates significantly influence the market capitalization of commercial banks.

H5: Gross Domestic Product (GDP) significantly influences the market capitalization of commercial banks.

The following hypothesis is formulated based on the literature review, in which Bitcoin trading volume would be our main independent variable affecting the market capitalization of commercial banks. The macroeconomic control variables included in the model are inflation, lending interest rates, exchange rates and gross domestic product (GDP) since previous studies have shown that these factors affect the valuation of banking sector viability. Figure 1 shows the proposed framework along with the relationships this research explored.

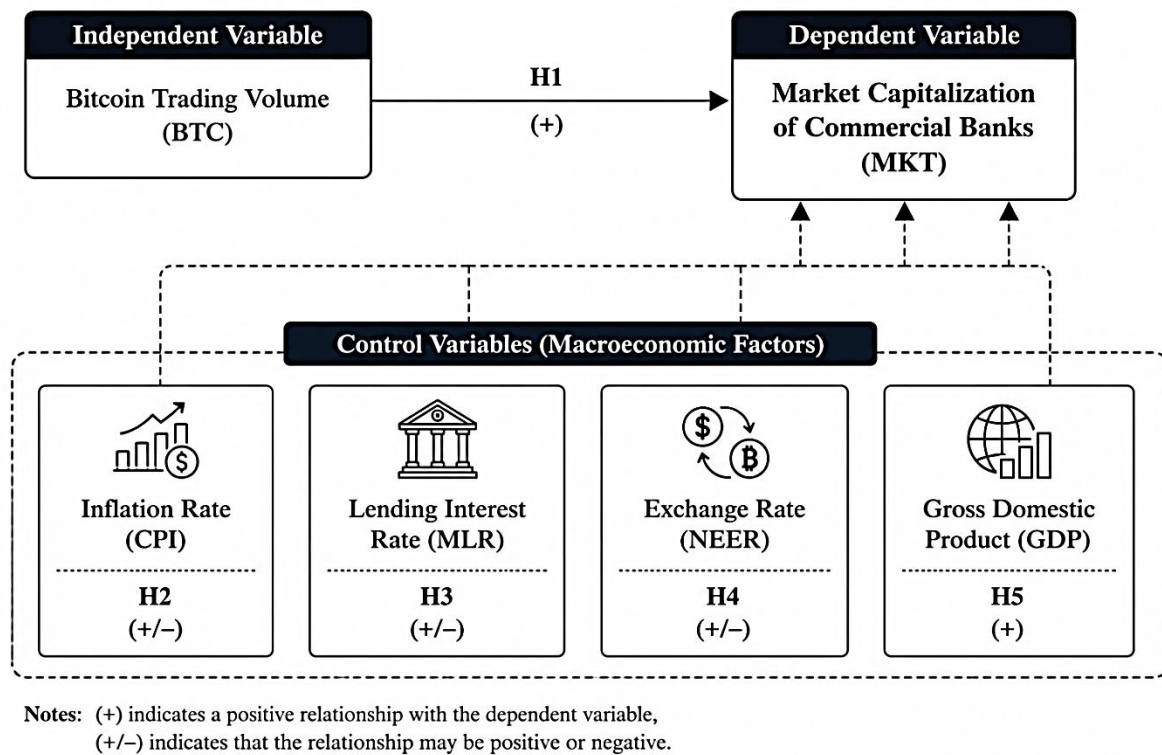


Figure 1. Proposed research conceptual framework and hypotheses

3. METHODOLOGY

3.1. Population and sample

The Thai adoption of cryptocurrencies serves as the unit of analysis for this study.

Justification for the Selection of Daily and Weekly Datasets

This study deliberately uses daily and weekly datasets for greater robustness and reliability of the empirical analysis. Daily data that allows to remember high-frequency information and including the short-term dynamics of Bitcoin trading and investors in the bank. On the other hand, a weekly observation smoothens out irrelevant market background noise and provides medium-term trends that would be lost in daily data. Using multiple data frequencies is a well-known practice in financial economics, as it were necessary to validate empirical results on different time horizon or mitigate that estimated relationships are driven by the short-run market noise. As a result, we increase the robustness of our findings by comparing both daily and weekly datasets (Bouri et al., 2024; Elliott & Urquhart, 2025).

Justification for the Study Period

Even though the datasets are between 2013 and 2020, during this time frame is when cryptocurrency adoption and digital financial transformation began to take shape in Thailand. Bitcoin started trading and gaining serious traction in these years while commercial banks were also racing ahead with digital banking strategies and fintech adoption. This phase represents thus, an appropriate environment for studying the impact of cryptocurrency market birth on investors' evaluation of banks. Additionally, the historical dataset allows for a longitudinal analysis of Bitcoin trading volume and banking market capitalization throughout multiple stages in the evolution of the markets (Sharma et al., 2024; Bank of Thailand, 2021).

This research chose Bitcoin to be the representative of digital currencies since it captures the highest market share among the rest. Citing CoinMarketCap, as of February 9, 2021, Bitcoin had an estimated market capitalization of about 875.83 billion USD which translates to roughly 70 percent of the whole digital currency market at the time. CoinMarketCap is a trusted source that compiles and provides information on the market of digital currencies according to set parameters and standards. Furthermore, data about the market capitalization of the commercial banks listed at SET and their corresponding stock prices were collected through SETSMART. The research period comprises from April 1, 2013 to December 31, 2020 and consists of 11 banks, which are:

- (1) Bangkok Bank Public Company Limited
- (2) Krungthai Bank Public Company Limited
- (3) Bank of Ayudhya Public Company Limited
- (4) Kasikornbank Public Company Limited
- (5) Kiatnakin Bank Public Company Limited
- (6) CIMB Thai Bank Public Company Limited
- (7) TMB Bank Public Company Limited
- (8) TISCO Bank Public Company Limited
- (9) Siam Commercial Bank Public Company Limited
- (10) Thanachart Bank Public Company Limited
- (11) Land and Houses Bank Public Company Limited.

3.2. Variables used in the study

Factors Pertaining to the Research with Involved in This Study, there are Independent, Dependent as well as Control Variables so understated in the following manner:

Independent Variable: The amount of Bitcoin that is traded in Thailand during the period between July 1, 2014 and December 31, 2020. This was captured with the abbreviation BTC.

Dependent: The total amount of money invested in commercial banks publicly traded on the Stock Exchange of Thailand, which the author estimates based on the total market capitalization of the eleven Thai banks in the sample that was drawn. This variable is referred to by the abbreviation MKT.

Control Variables

This study incorporated four control variables, which are discussed below:

1. **Inflation Rate:** The inflation rate is gauged by the shifts in the Consumer Price Index (CPI) that indicates the change in the inflationary level within a region is proportional to the inflationary shift in living expenditure. The CPI is said to reflect the mean amplification in the expense of goods and services offered to consumers, as such, the level of inflation is pegged on (Bank of Thailand, 2018). Data for this variable are obtained from the Public Relations Center of the Ministry of Commerce, and are referred to by the abbreviation CPI (Moudud-Ul-Huq et al., 2024; Karkowska et al., 2025).

2. **Lending Interest Rate:** Data are collected from the Bank of Thailand's official website and are referred to by the abbreviation MLR. The central dominion of the lending interest rate is depicted by the Minimum Loan Rate (MLR). The MLR signifies the least rate at which a borrower can take out a loan. MLR incorporates the opposite payment flows which so net of income streams have impacts on savings or deposit behavior of households. Investment profits influence the entrepreneurial and saving behavior of households, moreover, each of the eleven sample banks has a prime lending rate so the average MLR for all banks is assumed the control variable (Raftis et al., 2024; Sánchez Serrano, 2025).

3. **Exchange Rate:** The NEER (Nominal Effective Exchange Rate) serves as the indicator for this variable's measurement. NEER is obtained from the 25-principal trading hegemon and competitor

currencies by calculating the weighted trade value of the Thai baht. An increase in the NEER suggests the appreciation of the baht, which implies that the Thai economy might be facing a disadvantage in terms of pricing relative to its competitors and trading partners. The NEER is collected from the Bank of Thailand's website and is represented by its designation (Bank of Thailand, 2025).

4. Gross Domestic Product, (GDP): To this variable, the measure General Government Final Consumption Expenditure at Current Market Prices is assigned; it is precisely their value that demonstrates the expenditure method of GDP accounting. This indicator shows the activity of the overall economy of the country and is the basis for the economic policy of the government. The GDP is derived from its four components which are Consumption (C), Investment (I), Government Expenditure (G), and Net Exports (X-M). The data is from the National Economic and Social Development Council and is labelled as GDP. (Moudud-Ul-Huq et al., 2024; Khan et al., 2024).

Model Specification

The empirical model measures Bitcoin trading volume effects on market capitalization of listed commercial banks with code nominate major macroeconomic variables including inflation, lending interest rates, exchange rates and gross domestic product (GDP). Minitab includes these control variables to reduce omitted-variable bias and allows the estimated coefficient of Bitcoin trading volume to have greater explanatory power over variation in banking market capitalization (Moudud-Ul-Huq et al., 2024; Karkowska et al., 2025).

3.3. Data analysis

Regression analyses were conducted separately using the daily (with regression of the raw average scores) and weekly datasets to verify that the empirical results remained robust. This gives an added robustness check, comparing the results of estimation across different data frequencies and assessing the consistency of estimated relationships. The findings based on the two datasets reinforce each other, which means that limitations with test frequency are less likely to be a cause of the results (Bouri et al., 2024; Elliott & Urquhart, 2025).

This investigation uses a quantitative approach to examine the relationship between Bitcoin trading volume in Thailand, and the total market capitalization of the banking sector. The methodology consists of the following components - Data Analysis Using Inferential Statistics: Inferential statistical procedures are used to draw conclusions regarding the population from a sample. For this research in question, the objective is to test the relationship of interest, which is Bitcoin trading volume with the market capitalization of the securities, controlling for four macroeconomic variables; these are the inflation rate, lending interest rate, exchange rate, and gross domestic product. In order to determine the effect of Bitcoin trading volume while other factors are kept constant, the researcher uses linear regression analysis or more specifically, multiple linear regression. This technique makes it possible to estimate the effect of one variable that is dependent on other independent variables, thereby making the results more reliable and easier to interpret. (Wooldridge, 2020; Gujarati et al., 2021).

Research Limitations Related to the Dataset

The datasets utilized in this work are historical observations that reflect the early development stage of cryptocurrencies in Thailand. Thus, the results should be interpreted in light of the institutional and regulatory environment at the time of investigation. However, this chosen timeframe does provide some insight that could be helpful in substantiating how cryptocurrency trading activity relates to commercial bank valuation during its genesis (and will serve as a benchmark for future comparative studies with more recent data). (Bouri et al., 2024; Wooldridge, 2020).

4. RESEARCH FINDINGS

4.1. Regression with multiple linear relations

Overview of the Regression Analysis

Linear regression analysis was performed using both daily and weekly data to test the provided hypotheses. The trading volume of Bitcoin (BTC) was taken in our study as the main independent variable, and inflation (CPI), lending interest rates (MLR), exchange rate (NEER0) development, and gross domestic product (GDP) were used as macroeconomic control variables. We estimate this regression model based on two data frequencies, which serves as a robustness test for our empirical findings and allows to compare the persistence of the estimated relationships over different time horizons.

Table 1

Model summary (weekly data)

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.6281 ^a	0.3945	0.3884	1,646,585,402,053.64

a. Predictors: (Constant), GDP, NEER, BTC, MLR, CPI

ANOVA^a (weekly data)

Model	Sum of Squares	df	Mean Square	F	Sig.
1. Regression	706,541,246,956,461,000,000,000,000	4	176,635,311,739,115,000,000,000,000		
Residual	1,084,497,394,502,450,000,000,000,000	400	2,711,243,486,256,140,000,000,000	65.149	.000b
Total	1,791,038,641,458,920,000,000,000,000	404			

a. Dependent Variable: MKT

b. Predictors: (Constant), NEER, BTC, MLR, CPI

Coefficients* (weekly data)

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1. (Constant)	-43,081,123,211,390.70	10,523,503,377,166.70		-4.094	0.000
BTC	61,160.84**	12,047.70	0.264**	5.077	0.000
CPI	301,208,934,990.92**	113,051,805,514.99	0.161**	2.664	0.008
MLR	4,128,417,652,302.81**	323,422,137,412.78	0.662**	12.765	0.000
NEER	-48,191,002,737.66*	18,976,570,318.50	-0.167*	-2.540	0.011

a. Dependent Variable: MKT

*. Coefficients is significant at the 0.05 level (2-tailed).

**. Coefficients is significant the 0.01 level (2-tailed).

The explanatory variables are jointly significant ($F = 65.149$, $p < 0.001$) as the regression model explains variations on the market capitalization of listed commercial banks in Thailand. The adjusted R^2 of 0.3884 implies that 38.84% of the variation in banking market capitalization can be explained by BTC trading activity along with the macroeconomic drivers, the rest may come from additional economic or firm-specific factors missing from this model.

After establishing the statistical significance of the overall regression model, the estimated coefficients were interpreted to reflect how much each explanatory variable would impact banking market capitalization.

It is evident from the regression coefficients that Bitcoin trading volume (BTC), inflation (CPI) as well as lending interest rates (MLR), and exchange rates (NEER) represent statistically significant determinants of banks' market capitalization. In particular, we find positive coefficients for trading volume of Bitcoin, inflation and lending interest rates implying that increases in these variables lead to a higher capitalization of the banking market value. By contrast, the exchange rate (NEER) has a statistically significant negative coefficient suggesting that during the time of study, appreciation in the Thai baht is related to a decrease in banking market capitalization.

Assuming the explanatory variables, apart from lending interest rates (MLR) with strong effect standardized ($\beta = 0.662$), while Bitcoin trading volume and inflation also have a formidable magnitude of effective standardized ($\beta = 0.264$ and $\beta = 0.161$). The exchange rate (NEER) has the weakest negative effect ($\beta = -0.167$), but the results are still significant statistically. This shows that cryptocurrency market and macroeconomics factors affect the valuation of commercial bank in Thailand together.

4.2. Results of hypothesis testing

This digital currency impact study on commercial banks in Thailand using multiple regression analysis had the following results during hypothesis testing:

Hypothesis 1 (H1) Bitcoin trading volume has a significant effect on the market value of commercial banks.

With regard to the banking market cap, the regression results reveal that the Bitcoin trading volume has a statistically significant increase in predictive power for both daily and weekly datasets ($\beta = 0.219$, $p < 0.01$; $\beta = 0.264$, $p < 0.01$). Accordingly, the evidence for a relationship between Bitcoin trading activity and banking market capitalization is statistically significant. Nevertheless, the relationship predicted from theory initially was in the wrong direction. On the contrary, increased trading activity of Bitcoin is associated with higher market capitalization of commercial banks instead of a decrease in bank market capitalization. Thus, the hypothesis is partly supported with regards to statistical significance and not supported in relation to the expected negative direction.

Hypothesis 2 (H2) proposed that inflation significantly influences banking market capitalization.

Regression results show that inflation (CPI) positively and statistically significantly affects banking market capitalization at 1% significance level. Therefore, H2 is supported. Such findings point to inflation as an important macroeconomic determinant of banking valuation in the era studied.

Hypothesis 3 (H3) proposed that lending interest rates significantly influence banking market capitalization.

The results indicate the positive largest standardized coefficient of lending interest rates among other explanatory variables based on the empirical findings also confirming that lending rate is a very strong commercial bank valuation determinant. Accordingly, H3 is supported.

Hypothesis 4 (H4) proposed that exchange rates significantly influence banking market capitalization.

The NEER exchange rate coefficient is significant and negative, implying a decreased banking market cap in response to appreciation of the Thai baht in the sample period. Hence, H4 is supported.

Hypothesis 5 (H5) proposed that GDP significantly influences banking market capitalization.

While GDP has a statistically significant positive effect in the daily dataset, it is not significant in the weekly estimation. Thus, the empirical data only partially supports H5, indicating that macroeconomic growth exerts varying power across datatypes.

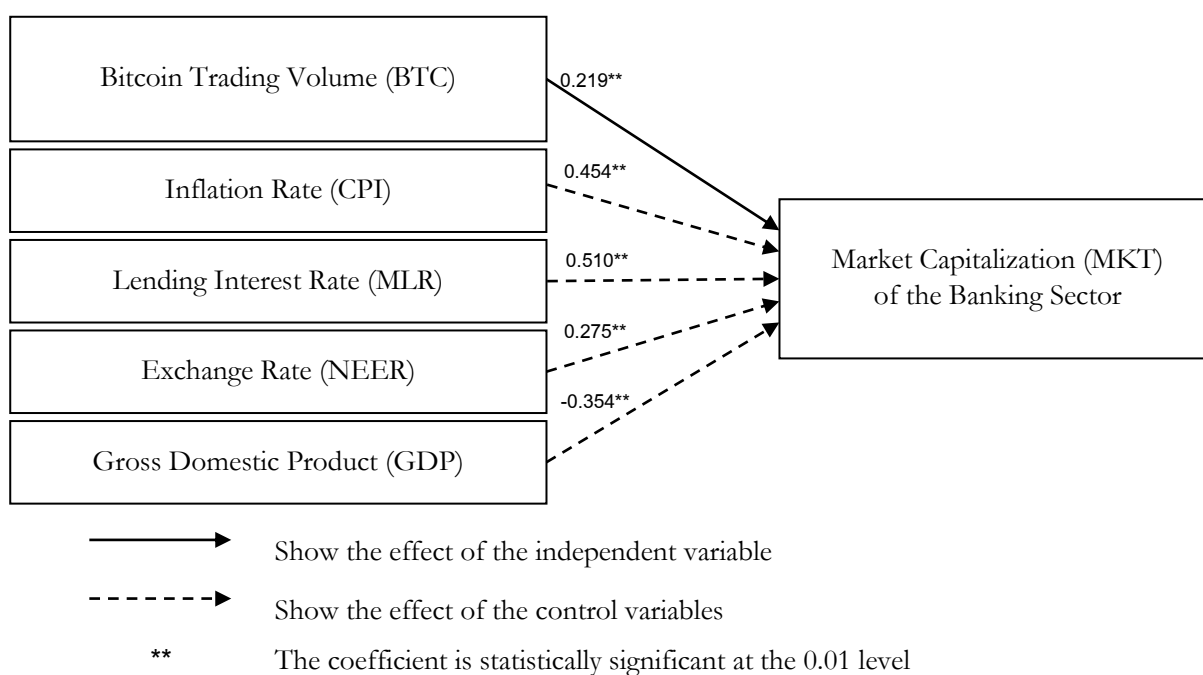


Figure 2. Summary of hypothesis testing results for the daily data frequency set

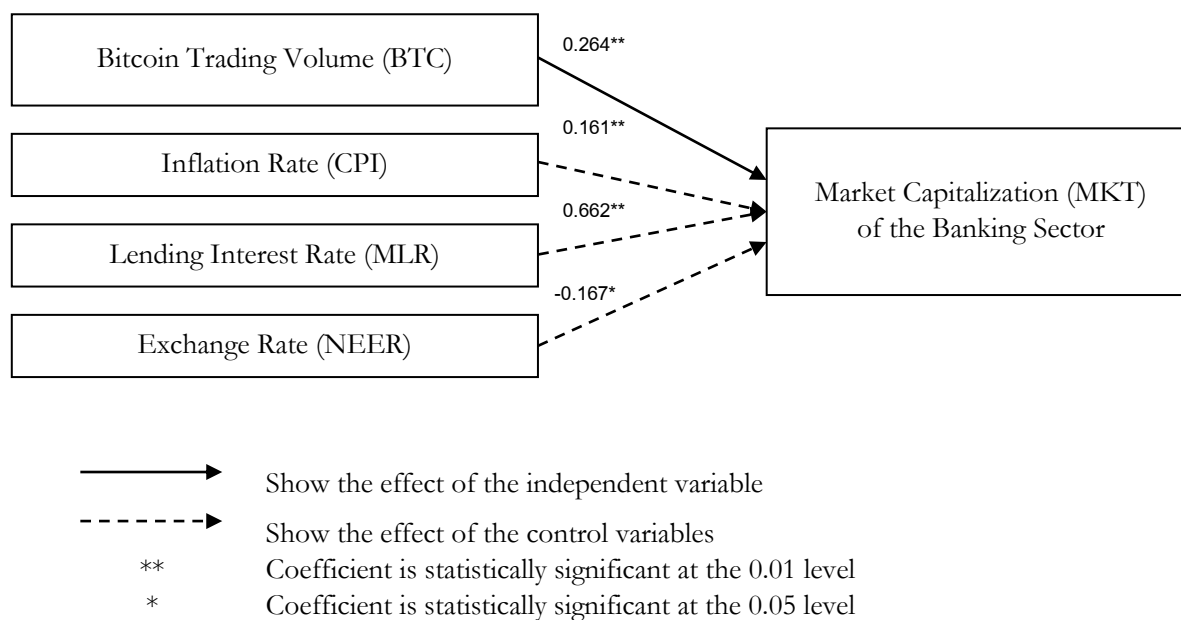


Figure 3. Summary of hypothesis testing results for the weekly data frequency set

Table 2

Summary of hypothesis testing

Hypothesis	Result	Direction
H1	Partially Supported	Positive instead of expected negative
H2	Supported	Positive
H3	Supported	Positive
H4	Supported	Negative
H5	Partially Supported	Daily only

Overall Summary of Findings

In conclusion, empirical results reveal that Bitcoin trading volume in addition to macroeconomic indicators together determine the market capitalization of commercial banks in Thailand. Lending interest rates are the most positively impacted, followed by Bitcoin trading volume and inflation velocity. In addition, the robustness and reliability of the empirical findings will be further supported by obtaining consistent results for the daily- and weekly-datasets.

5. SUMMARY AND DISCUSSION

This research focused on the effect Bitcoin trading activity has on the performance of commercial banks in Thailand. The independent variable for this analysis was the trading volume of Bitcoin (BTC) in Thailand. Moreover, based on previous research, four other variables—the country's inflation rate, lending interest rate, exchange rate, and gross domestic product—were added as control variables to mitigate the impact of other factors unrelated to Bitcoin trading volume. The dependent variable was the market capitalization of 11 commercial banks which are members of the Stock Exchange of Thailand (SET) index. This commercial banking research in Thailand was done through the use of a multiple regression analysis to establish the relationship between Bitcoin trading volume and commercial bank performance as measured through capitalisation. The research was undertaken to establish if there exists a relationship between trading volumes of Bitcoin and performance of commercial banks and in the affirmative, the nature of that relationship. The working hypothesis suggested that the Bitcoin trading volume in Thailand would negatively impact the commercial banks market capitalization. The rationale is that since banks offer higher transaction fees, they provide less value than digital currencies. (Sharma et al., 2024; ZeiB et al., 2024). Thus, an increase in digital currency trading volume should decrease the commercial banks performance and market value. Findings from the study suggest that Bitcoin trading volumes greatly correspond with the market cap of commercial banks within Thailand. This finding contradicts the hypothesis which primarily suggested an inverse correlation. Nevertheless, the control variables such as: value of inflation, interest rate on loans, and currency exchange rate had a pronounced effect on the total market cap, aligning with Hypotheses 2 to 4. The control variable representing the gross domestic product (GDP) of Thailand had inconclusive outcomes: considered as a dependent variable, the daily dataset supported a significant impact, but the weekly datasets did not show statistical significance.

The empirical results showed that there was a positive, high-level relationship between the Bitcoin trading volume and commercial bank market capitalization in Thailand. The previous section expected that the hypothesis would be negative, however this model shows a statistically significant positive relationship. This discovery points to views that high levels of cryptocurrency trading in realized won't weaken the banking place as well. Rather, it might prompt commercial banks to accelerate digital transformation and embrace financial technologies as well as enhance their competitive position in the face of technological innovation.

However, the positive correlation revealed in this work supports the complementary view of financial innovation, which argues that digital currencies and traditional banking systems can exist alongside each other without corrosion. With the growing cryptocurrency markets, commercial banks are more likely to invest in digital banking platforms, blockchain applications, digital payment systems and financial technology infrastructure to stay competitive and ensure their capabilities meet new customer trends. As a result, investors may come to view lenders that are early adopters of technological innovation as superior growth assets in comparison to their more prudently inclined competitors and reward them accordingly with higher market capitalizations. (Sharma et al., 2024; Zeiß et al., 2024).

The results also reveal that macroeconomic variables continue to be significant predictors of banking market capitalization. Lending interest rates are the most strongly positively correlated indicators; whilst this just reinforces how crucial lending income remains a driving force for confidence and profitability in banks. We observe a direct relationship between inflation and banking market capitalization over the period of investigation in addition to exchange rates having a substantial negative relation, indicating are sensitive nature of bank valuations on an international level. It concludes that technological innovation and macroeconomic fundamentals together determine the market value of commercial banks (Raftis et al., 2024; Sánchez Serrano, 2025). The joint positive effects of inflation and lending rates are consistent with evidence that inflation feeds into policy and lending rates (Aji et al., 2021).

This result has been interpreted in the context of a dynamic Thai banking sector, characterized by rapid expansion through digital financial services, mobile banking platforms, electronic payment systems and financial technology investments in recent years. This result should be interpreted in the context of Thailand's dynamic banking sector, which has experienced rapid expansion in digital financial services, mobile banking platforms, electronic payment systems, and financial technology investments over the last decade. Instead of perceiving cryptocurrencies merely as competitive threats, a growing number of banking institutions have incorporated digital technologies into their strategic development. Instead of perceiving cryptocurrencies merely as competitive threats, a growing number of banking institutions are incorporating digital technologies into their strategic development. Take the Siam Commercial Bank (SCB), they invested in Ripple's blockchain technology to bolster its cross-border payment capabilities. Nonetheless, we can think of this example as an illustration of a more general digital transformation on the Thai banking sector rather than the main reason for our empirical results (Zeiß et al., 2024).

In summary, the results point towards Bitcoin trading activity as signaling financial innovation more broadly instead of acting as a direct replacement for commercial banking. Indeed, the relationship between cryptocurrency markets and conventional banking sector appears to be complementary for emerging economies like Thailand, where digital transformation, financial development alongside traditional macroeconomic fundamentals determine investors' assessment of a commercial bank.

6. SUGGESTIONS

6.1. Increasing data collection

More detailed data is needed from all firms that act as intermediaries for trading in digital currencies in Thailand, as it will improve the accuracy and validity of the research results.

6.2. Adding more digital currencies and extending the study duration

It is suggested that more distinct types of digital currencies be added as independent variables and the duration of data collection be made longer to improve the depth of future studies. This will aid in comprehensively understanding the digital currencies' market for more accurate real-world simulations.

6.3. More investigation into the legal and regulatory policies

An equally important area of further research focuses on developing policies that govern the safeguarding of digital currencies. Studying these makes it possible to determine their effect on public concern related to the adoption of digital currencies.

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