

**Stock Market Response to Monetary Policy Announcements:
An Event Study of Kazakhstan's Base Rate Decisions**

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ABSTRACT

This paper presents research on how the announcement of the monetary policy by the National Bank of Kazakhstan (NBK) affects the share prices of the listed companies in Kazakhstan. In particular, it compares the stock prices of banking firms and non-banking firms in response to decisions on the NBK base rate to test whether or not there is a different sensitivity to the sector. The analysis uses a common event study design by analyzing the policy announcements, 2016-2024, and uses daily stock price data of the Kazakhstan Stock Exchange (KASE). The main question to be addressed is whether, on an emerging market setting, there is a systematic change in the transmission of monetary policy to stock valuations in the banking and the corporate sector as a whole.

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1. Introduction

One of the key tools by which the central banks can control the macroeconomic variables especially inflation, interest rate and financial market dynamics is the monetary policy (Bernanke and Kuttner, 2005). The base interest rate is one of its most important instruments that influence the expectations in the market and the decision-making process of investments. In most economies, stock markets respond sensitively to alterations in policy rates, because such declarations are indicators on the changes in future economic situations and cost of capital. Although these relations are thoroughly documented in developed and most emerging economies, little focus has been on the subject within the framework of Kazakhstan, a developing economy with a rather young yet developing capital market.

The National Bank of Kazakhstan (NBK) publicizes its base rate decision on average eight times every year. Such announcements are major events that are likely to affect the mood of investors and asset prices. Nonetheless, an examination of the literature available demonstrates that there is an important gap: as many studies have been conducted on the impacts of macroeconomic indicators on Kazakh stock returns through econometric or time-series models, it is not able to reflect the short-term market relatedness to policy events. None of the studies have utilized an event study as a methodology in isolating the short-term effects directly related to NBK announcements.

Other emerging economies such as Turkey and China demonstrate that the abnormal returns are usually triggered by rate shifts, but this response largely relies on the manner in which investors understand the signal of the central bank. In the case of Kazakhstan it is question to whether the announcements made by NBK have a quantifiable market response. The significance of this question is the following:

- It shows whether there are short-run monetary policy impacts on the listed companies and investor actions.
- It assists in setting the course of the reaction: is an increase in the rates seen as a negative reaction (Because it increases the cost of borrowing) and vice versa?

- It gives us the ability to test sectoral effect and it may be anticipated that banking companies are particularly vulnerable since they are directly affected by the change in lending rates and credit requirements.

The paper fills this important gap by using an event study research approach to determine how NBK base rate affect the Kazakhstan stock market. The aim is to measure the amount of abnormal returns surrounding the announcement windows as well as to investigate whether the direction or magnitude of the rate change results in systematic investor behavior. Particular emphasis is made in comparing the sensitivity of the banking industry with large non-bank firms.

Then, the main research question that the given study will address is as follows: What is the impact of the announcement of the base rate by the National Bank of Kazakhstan (NBK) on the abnormal returns in the Kazakhstani stock market, and does the response of the banking sector significantly differ with non-bank firms?

2. Hypothesis Development

The specific expectations about market reaction with the view of large non-bank firms, based instantly on the conventional logic behind asset pricing. The increase in the base rate causes the risk-free rate in the valuation models to increase, increasing discount rates and decreasing the present value of future cash flows of the corporate. Simultaneously, as interest rates increase, the cost of borrowing money by companies increases, and thus this can limit investment, growth, and profitability in the future; this creates a precondition of an expected negative equity reaction. We are, therefore, optimistic that an increase in rate by the National Bank of Kazakhstan will be reflected in negative market situation to non-bank firms.

H1: A base rate increase announced by the National Bank of Kazakhstan is associated with negative abnormal returns for non-bank firms around the announcement.

Based on the concepts of two conflicting channels of theories, developing a hypothesis about the banking sector requires reconciliation. The traditional Endowment Effect asserts that the banks

will be advantaged by an increase in rate because their interest rate on their assets (loans) will be repriced more rapidly than their interest rate on their liabilities (deposits) hence increasing the Net Interest Margin (NIM).

However, we believe that in the scenario of the emerging market of Kazakhstan, this positive margin effect is completely subdued by the Discount rate and Credit Risk channels. Banking is the main channel through which money is transmitted hence a high rate of increase will significantly higher the cost of equity to banks than it is to non-financial companies. Moreover, in economic turbulence, the rate increases aggressively, thus increasing the likelihood of loan defaults (Non-Performing Loans) thereby invalidating the advantages of increased interest margins. We therefore assume the domination of the valuation shock of higher discount rate, greater credit risk will prevail resulting in a net negative response.

H2: The negative abnormal returns following a substantial base rate increase will be more pronounced for banking stocks than for non-bank firms.

3. Literature Review

This section reviews both theoretical and empirical literature on the impact of monetary policy announcements on stock market performance, with particular attention to event study methodologies. It is structured as follows: theoretical foundations and transmission mechanisms (Section 3.1), global empirical evidence from developed and emerging markets (Section 3.2), sector-specific responses, especially in banking (Section 3.3), and the research gap in the context of Kazakhstan (Section 3.4).

3.1. Theoretical Framework: Monetary Policy and Stock Markets

Correlation between the monetary policy and financial market is founded on the theoretical knowledge that the interest rate decisions act as indicators to investors regarding the economic perspective and outlook of the central bank in the future as far as macroeconomic factors are

concerned. The policy rate (base rate) is one of the tools that are used by central banks to manage the inflation rates, stabilize the currency, and the general economic activity. The first and most apparent effect of these decisions is on the price of assets and especially on the stock market.

The fundamental aspect of such relationship is the discounted cash flow (DCF) model, according to which the worth of a stock is estimated as the present worth of future cash flows. One of the inputs of this model is the discount rate consisting of the risk-free interest rate (e.g. government bond yield) and a risk premium. By decreasing base rate, the central bank is in essence decreasing the discount rate that will be charged on future earnings. This increases the present value of such earnings and there is increase in fundamental value that is allied to stock prices. On the other hand, an increase in the rate will raise the discount rate that lowers present values hence dampening stock price returns.

Capital Asset Pricing Model (CAPM) is also an approach that involves the use of risk-free rate in the expected return of an asset. The equilibrium return demanded by investors changes depending on a shift in the monetary policy position by changing the risk-free rate. CAPM indicates that when the central bank increments the rates, the required return also rises, and this may be less appealing to equities than fixed-income instruments such as bonds. This will catalyze a redistribution of capital and cause a decline in stock prices. In addition to the mechanism of valuation, monetary policy affects the financial markets in several channels of transmission that include:

- The interest rate channel, in which the variation in the base rate has a direct impact on the cost of borrowing money by business and consumers, which in turn impacts on investment, consumption and corporate earnings.
- The exchange rate channel, comes into play especially in open economies. An increase in the rate is normally strengthening the domestic currency as it would attract foreign capital which would make the exports less competitive but would perhaps slow down inflation. Reduction in rates can increase exports at the cost of increasing the price of imports.
- The credit channel which works on bank loans. An easier monetary policy will allow credit

to be eased, which will stimulate borrowing and economic growth, which will further increase equity prices, particularly in credit sensitive areas.

- The expectations channel, the reflections of the investor and business sentiment on forward guidance or unexpected policy changes. In the event of a rate decision that falls out of market expectations (a monetary policy surprise), shock can produce a high degree of volatility and abnormal stock returns.

These channels may be quite efficient depending on the level of market development, credibility of central bank, communication transparency, and current macroeconomic environment. In the new markets, such as the emerging markets, exchange rate and credit channels tend to dominate because institutional frameworks are weaker or deeper capital markets. Besides, the level of market efficiency is important in determining the speed and accuracy of stock prices in adopting new information. The asset prices in a semi-strong form efficient market respond quickly to announced policy changes, thus it is possible to use event study methodology to identify abnormal returns near announcement dates.

Finally, further theoretical support is done by the rational expectations hypothesis and signal extraction theory. Central bank announcements do not only reflect technical manipulations of policy tools but also to the investors in the bigger picture. Hence, even no change in the rate decision can cause the markets to shift as long as it is not similar to the expectation before or a risk is perceived to change.

All these theoretical points combined together determine why and how monetary policy interventions are capable of having observable and measurable impacts on stock markets. This leaves monetary policy announcements excellent databanks to be the subject of an event study analysis, which is meant to reflect short-run market responses to new information publications.

3.2. Empirical Evidence from Developed and Emerging Markets

Empirical research that has employed event study research design on both developed and emerging economies have uniformly shown that stock markets are sensitive to monetary policy

announcements but the direction, magnitude and duration of such effects vary by country, market structure and nature of the policy action. This difference highlights the role of institutional setting, market anticipation and credibility of central banks.

In established markets like the United States and Western Europe, announcement of monetary policies, especially conventional and well predicted ones, are likely to have faint or minimal stock market responses. The level of information efficiency in these economies is usually high, that is, the decisions made by the monetary policy are usually well foreseen and priced in by the market prior to the actual announcement. In some situations, however, in the context of financial crisis, the market might become more sensitive to policy measures. To illustrate, O'Donnell et al. (2024) revealed that the U.S. bank stocks had fallen an average of -1.03 (percent) in the interval of -1 to +3 days around the base rate cuts during the COVID-19 period. This must have been not the reduction in rate, but the perception of the market of complicated economic conditions, or the fear of shrinking operating profit of banks from the reduction of interest margins.

In Europe, the reply is more asymmetric, especially when the European Central Bank (ECB) provides forward guidance or takes part in the measures that are aimed at inflation targeting. To be more precise, according to Perdichizzi (2017), the responses were stronger when it comes to crisis-related periods as well as surprise aspects in traditional rate policy, but weaken or are flat in reaction to unconventional interventions like an asset purchase program. Kim et al. (2013) also revealed that the German and U.S. market will respond irregularly or in a weak manner to the central bank news, which demonstrates the importance of policy credibility and anchoring of the inflation expectations in stabilizing investor reactions.

By contrast, emerging markets are much more heterogeneous in their responses to monetary policy announcements, which are more intense at times and to more expansionary or unexpected policies. O'Donnell et al. (2024) found that foreign exchange policy interventions (seen as pro-growth or liquidity-enhancing) had positive returns of abnormal returns of between +1.17% and +1.54% on Chinese banking stocks. This response can be explained by the fact that the policy guidance has a structural importance in the Chinese state-based financial system, where the

announcements of the government have a high signaling value. Baykara (2021) applied a -5-to-+5-day event window in Turkey and discovered statistically significant negative abnormal returns on the reaction to the rate increase, where the investors were worried about the costs of borrowing and the impact of politics on the monetary policy.

A trend to observe throughout the emerging markets is the increased responsiveness of the market reaction to the direction and perceived competence of the announcement, and not the act of a rate change. The central banks in most of these countries are under partial transparency or are seen to be under political pressure, a factor that adds weight to the communication by the central banks. This is also pushed by the presence of unanchored inflation expectations or immature capital markets. The global evidence is taken as a whole to affirm the usefulness of event study methodology in reflecting the short-term market response to announcements of monetary policy. It also shows the variation in the behavior of a market and this is where it is necessary to ensure that the findings are contextualized within the financial, institutional, and political environment of a particular country. This contextual distinction is especially critical in the example of an emerging market and a developing capital market such as Kazakhstan, which has a rather low level of liquidity, and a somewhat recent past of transparent monetary policy activities starting from 2016.

3.3. Sectoral Sensitivity: The Case of Banking Stocks

The banking and financial services sector is by far the most sensitive sector of the stock market to the announcement of monetary policies. This is because it is a sensitive issue due to the very nature of the banking business which is based on interest and lending margins. The interest billed on loans less the interest paid on deposits or borrowings or the so-called net interest margin (NIM) is beneficial to banks. Any change in the base rate by the central bank has an immediate impact on such margins particularly where short-term and long-term interest rates move asymmetrically. Theoretically speaking, the monetary policy has an impact on the banks by affecting their asset side and their liability side of the balance sheet. Under the asset column, fluctuation in the base rate has a direct impact on the pricing of loans and on the valuation of bonds. In the liability side,

interest rates will change the cost of capital and will influence the deposit flows. Accordingly, positive abnormal stock returns are normally achieved by expansionary policy (e.g., a rate cut) which increases the availability of credit and bank profitability in the short-run by stimulating loan demand and reducing the cost of funding. On the other hand, contractionary policy (e.g. increase in rate) will be able to restrain lending (and squeeze margins), essentially hurting the bank firms.

Baykara (2021), who paid attention to Turkey, supported such conclusions by demonstrating that an increase of the rates, particularly when they were considered to have a political background, significantly and negatively affected the bank stock returns. In this kind of market, where independence of the central bank at times is doubted, investor confidence becomes central to mediate the response to the monetary policy cues. What is unique about the banking industry is not the fact that it is directly exposed to interest rates, but also the fact that it is in the middle of the monetary transmission channel. To an extent, the credit channel flows via banks and therefore their stock performance serves as a good indicator of how the monetary policy efficiency and credibility are perceived by the markets. In this sense, banking stocks can be considered an early warning of the market as a whole and can be commonly analyzed as a specific section of the event studies.

3.4. Kazakhstan: A Gap in Event Study Applications

Ever since the National Bank of Kazakhstan (NBK) has been using more transparent policy framework in 2016, such as through the systematic announcement of a base rate decision roughly eight times annually, there is now a clear opportunity to conduct an empirical research. Nevertheless, the scholarly literature has not yet been able to conduct a systematic analysis of how these structured announcements are responded to by the short-term investor. This gap is the subject of this work, which is the first attempt at examining the immediate response of the Kazakh stock market to announcements of NBK base rates. The analysis focuses on the returns of banking stock, and the sample of major non-bank firms on the announcement day itself, and on the 3-days windows centering around the announcement day. This methodology gives empirical data to determine whether monetary policy documents are quickly integrated into the prices of stocks.

Importantly, the analysis puts the reaction of the banking sector directly against the reactions of other key listed companies, and it will be tested whether the banks are more sensitive to these key policy decisions. Through this specific analysis, applied to the specific economic environment of Kazakhstan, this study would help to better understand, and provide a policy-relevant insight into how equity markets in the resource-endowed emerging economies react to the communication of central banks.

4. Methodology

In this chapter the empirical method of studying the responses of the Kazakhstan stock market to announcements of the monetary policies by the National Bank of Kazakhstan (NBK) is described. The study uses a rigorous event study design formalized by MacKinlay (1997) which has been improved by cross-sectional regression models to control the firm-specific parameters including size, leverage and profitability. The analysis is conducted in three steps, namely, firstly, cleaning and constructing the dataset, secondly, computing abnormal returns and lastly testing whether there are Threshold Effects and Sectoral Asymmetry using multivariate regression analysis.

4.1. Construction of Data and Sample

The data set will be stock closing prices of all the leading companies of the Kazakhstan Stock Exchange (KASE) per day, 2016-2024. The sample will be segmented into two different groups which will make it easier to compare the sectors: Non-Banking Sector: Consists of large listed companies in industries such as energy, telecommunication, utilities (e.g., KazMunayGaz, Kazatomprom, Kazakhtelecom). Banking Sector: This encompasses all of the listed commercial banks (e.g., Halyk Bank, Bank CenterCredit, Kaspi Bank). We employ the KASE Index (KZKAK) as the market proxy. While this is a price index, the short duration of the event window minimizes the bias from excluding dividend yields.

Financial Controls: To determine the independent effect of monetary policy and the fundamental of firms, the quarterly financial data were combined with the daily stock returns. Financial

ratios that lacked daily values were filled using the method of fill-forward using the latest quarterly report. The major control variables are:

- Firm Size ($\ln_assets$): The natural logarithm of total assets, used to test the "Size Penalty" hypothesis.
- Leverage: Short and Long Term Debt divided by Total Assets, to control for financial risk.
- ROA (Return on Assets): Net Income divided by Total Assets, to control for profitability.
- Macro Controls: Daily returns of Brent Oil prices and the USD/KZT exchange rate were included to filter out exogenous macroeconomic shocks.

Data Cleaning: The data was rigorously cleansed to make it strong. Repeated observations, as a result of anomalous trading days, were made stable by giving precedence to legitimate price occurrences. The non-positive values of the asset values or the extreme values of the ratios of the outliers (e.g., ROA of more than 50 percent) were considered missing in order to avoid the influence of estimation biases.

4.2. Variable and Event Definition

The sample is composed of 75 distinct monetary policy decisions of the NBK in the sample period. These events were subjectively classified depending on the size of the rate change in order to test the non-linear market responses.

Key Independent Variables:

- Standard Hike ($hike$): A binary dummy variable equal to 1 if the base rate was increased by any amount, and 0 otherwise. The total amount of standard hike events is 14.
- Aggressive Hike (big_hike): A binary dummy variable equal to 1 if the base rate increase was strictly greater than 0.25% (25 basis points). This variable is central to testing the "Threshold Effect." The total amount of aggressive hike events is 9.

- Crisis Period (crisis): A dummy variable marking years of extreme volatility (1 January 2016 to 1 January 2017, 1 March 2020 to 1 March 2021, 23 February 2022 to 23 February 2023) to test if market sensitivity increases during economic and political stress.

4.3. Estimation of Abnormal Returns

Abnormal returns (ARs) represent the component of stock performance attributable solely to the event, net of general market movements. The market-adjusted return model was employed, defining the abnormal return for firm i at time t as:

$$AR_{i,t} = R_{i,t} - R_{m,t} \quad (1)$$

Where $R_{i,t}$ is the observed daily log return of the firm, and $R_{m,t}$ is the return of the KASE Index. The analysis focuses primarily on the Event Day ($t=0$) abnormal return using abret_0 factor to capture the immediate market reaction to the announcement. Cumulative abnormal returns, which include -1 to +1 days around the announcement, are captured by abret_3 factor. Also, results include -2 to +2 days around the announcement which are captured by abret_5 factor.

4.4. Empirical Testing Strategy

The empirical analysis abandons simple univariate comparisons in favor of multivariate regressions with robust standard errors clustered by firm (`vce(cluster ticker_id)`). This approach corrects for heteroskedasticity and serial correlation common in financial data.

The hypothesis testing is structured into three distinct econometric models, applied separately to the Banking and Non-Banking sectors for direct comparison.

Model 1: Baseline Reaction (The "Noise" Test) This model tests whether the market reacts to any rate hike, regardless of size. It serves as a baseline to verify standard asset pricing theory.

$$AR_{i,t} = \alpha + \beta_1(Hike) + \gamma(Controls) + \varepsilon_{i,t} \quad (2)$$

We expect negative and significant values for β_1 for both banks and non-bank firms.

Model 2: The Threshold Effect (The "Shock" Test) This model replaces the standard hike dummy with the Aggressive Hike indicator to test if the market ignores noise but prices in shocks.

$$AR_{i,t} = \alpha + \beta_1(Big_Hike) + \beta_2(ln_assets) + \gamma(Controls) + \varepsilon_{i,t} \quad (3)$$

We expect β_1 to be more negative and statistically significant for banks than for non-banks.

Model 3: Interaction and Robustness To verify that the results are not driven purely by crisis periods or specific firm risks, interaction terms are introduced:

$$AR_{i,t} = \alpha + \beta_1(Hike) + \beta_2(Crisis) + \beta_3(Hike * Crisis) + \gamma(Controls) + \varepsilon_{i,t} \quad (4)$$

and

$$AR_{i,t} = \alpha + \beta_1(Big_Hike) + \beta_2(Crisis) + \beta_3(Big_Hike * Crisis) + \gamma(Controls) + \varepsilon_{i,t} \quad (5)$$

This allows the study to determine if the negative reaction is driven by the policy decision itself or the macroeconomic environment in which it occurs.

5. Results & Discussion

The given section reports the empirical results on the stock market reaction to the announcements of the monetary policy by the National Bank of Kazakhstan (NBK) within 2016-2024. Analysis is done in four steps. To begin with, descriptive statistics will be given to emphasize the features of event sample and differences in volatility across sectors. Second, the reaction of non-bank firms is examined in order to test the standard asset pricing hypothesis (Hypothesis 1). Third, the banking industry is investigated to find out whether the industry is specifically sensitive to the changes in rates (Hypothesis 2). Lastly, the effect of crisis periods is isolated by performing robustness checks using interaction terms.

5.1. Descriptive Statistics

The sample will include 75 individual monetary policy announcements made by the NBK. Table 1 is the summary of the distribution of these events according to the direction and the magnitude of rate change.

Table 1: Distribution of Monetary Policy Events (2016–2024)

Event Category	Definition	Frequency
No Change	Base rate unchanged	40
Rate Cut	Base rate decreased (< 0)	21
Standard Hike	Base rate increased (> 0)	14
<i>of which: Aggressive Hike</i>	<i>Increase $> 0.25\%$</i>	<i>(9)</i>
Total Events		75

The sample is comprised of 75 distinct policy decisions. All rate increases are covered under "Standard Hike". Aggressive Hike is a sub-group of Standard Hike implying increases that are strictly more than 25 basis points. Aggressive Hikes distribution over crisis periods is as follows 2016 (1 event), 2020 (1 event), and 2022 (5 events).

As a background to the robustness checks in Section 5.4, it should be noted how these hikes are distributed during the times of crisis. The sample consists of three large crisis windows, which are the 2016 free-float adjustment made by NBK, the COVID-19 shock in 2020, and geopolitical turmoil of 2022 caused by the conflict between Russia and Ukraine.

- 2016 Crisis: 1 Aggressive Hike.
- 2020 Crisis: 1 Aggressive Hike.
- 2022 Crisis: 5 Aggressive Hikes. Overall, 7 of the 14 increases in the rate experienced in the sample fell in the years of the crisis, and most of the intense tightening was in 2022.

The following Table 2 (below) gives the summary of the major regression variables, divided into the Non-Bank (Panel A) and the Banking (Panel B) industry.

Table 2: Descriptive Statistics of Key Variables

Variable	Mean	SD	Min	Max	N
<i>Panel A: Non-Bank Firms</i>					
abret_0	0.020	1.545	-11.045	10.253	358
change	-0.010	0.747	-2.500	3.250	525
hike	0.176	0.381	0.000	1.000	518
big_hike	0.108	0.311	0.000	1.000	518
ln_assets	27.729	1.261	25.820	30.508	490
leverage	0.253	0.175	0.001	0.828	460
roa	1.731	1.530	-4.104	13.876	490
oil_ret	0.001	0.029	-0.165	0.095	518
usdkzt_ret	0.002	0.012	-0.014	0.071	511
<i>Panel B: Banks</i>					
abret_0	0.201	3.068	-11.220	33.878	237
change	-0.010	0.747	-2.500	3.250	525
hike	0.176	0.381	0.000	1.000	518
big_hike	0.108	0.311	0.000	1.000	518
ln_assets	29.276	2.378	25.791	34.695	490
leverage	0.225	0.390	0.021	3.620	490
roa	0.832	2.436	-3.946	28.136	490
oil_ret	0.001	0.029	-0.165	0.095	518
usdkzt_ret	0.002	0.012	-0.014	0.071	511

The first important point that Table 2 makes is the difference in the volatility of market reactions. The standard deviation of abnormal returns for raw availability of data in Banks (3.068) is almost twice the non-bank firms (1.545). This implies that the banking stocks in Kazakhstan are very much more responsive to new information and market shocks than the industry stocks.

Tables 3 and 4 below present information on how the market responds to specific monetary policy signals. The subsequent tables show the full dataset used in the estimation of the models.

Table 3: Mean Abnormal Returns (AR[0]) by Standard Hike Status

Sector	Standard Hike		Non-Hike (Other)		Total	
	Mean	N	Mean	N	Mean	N
Non-Banks	0.302	64	-0.063	255	0.010	319
Banks	-0.286	57	0.323	174	0.173	231
Total	0.025	121	0.093	429	0.078	550

Note: "Non-Hike" includes Rate Cuts and No Change decisions.

Table 3 shows us that Banks have negative mean abnormal returns, while Non-Bank firms are not.

Table 4: Mean Abnormal Returns (AR[0]) by Aggressive Hike Status

Sector	Aggressive Hike		Non-Aggressive		Total	
	Mean	N	Mean	N	Mean	N
Non-Banks	0.470	44	-0.063	275	0.010	319
Banks	-0.612	37	0.322	194	0.173	231
Total	-0.024	81	0.096	469	0.078	550

Note: Aggressive Hike is defined as an increase > 0.25%.

Table 4 presents even more negative mean abnormal returns for Banks using Aggressive Hike Status.

5.2. Findings of Non-Bank Firms (Hypothesis 1)

Hypothesis 1 assumed that an increase in the base rate would be linked with negative abnormal returns on the non-bank firms because of the elevated discount rates and the cost of borrowing. Nonetheless, the regression outcome shows that the industrial sector is quite inelastic to the monetary policy.

Table 5: Market Reaction to Standard Hikes (Non-Banks)

Variables	AR [0]	CAR [-1, +1]	CAR [-2, +2]
hike	0.165 (0.215)	0.468 (0.248)	-0.218 (0.459)
ln_assets	-0.068 (0.077)	-0.021 (0.192)	0.097 (0.132)
leverage	-0.311 (0.663)	-0.101 (1.483)	0.017 (1.560)
roa	0.053 (0.046)	0.236 (0.178)	0.364* (0.168)
oil_ret	-1.082 (2.449)	-8.328* (4.026)	-10.68* (5.391)
usd/kzt ret	14.67 (12.37)	7.912 (21.33)	63.83 (38.93)
constant	1.789 (2.210)	0.019 (5.578)	-3.490 (6.279)
Observations	319	291	287
R-squared	0.022	0.030	0.054

Note: Robust standard errors in parentheses. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

The coefficient of hike in the standard hike specification (Table 5) is positive (0.165) but statistically non-significant ($p > 0.1$). It means that the market does not systemically reprice non-bank stocks during the day of the increase of a rate.

Table 6: Market Reaction to Aggressive Hikes (Non-Banks)

Variables	AR [0]	CAR [-1, +1]	CAR [-2, +2]
big_hike	0.293 (0.414)	0.879 (0.913)	-0.329 (1.562)
ln_assets	-0.071 (0.078)	-0.029 (0.192)	0.101 (0.225)
leverage	-0.293 (0.654)	0.141 (1.446)	0.128 (1.586)
roa	0.052 (0.047)	0.233 (0.168)	0.363** (0.142)
oil_ret	-0.905 (2.589)	-7.694 (5.063)	-10.87* (5.519)
usd/kzt ret	12.45 (12.40)	0.116 (29.91)	66.07 (52.90)
constant	1.846 (2.250)	0.181 (5.583)	-3.595 (6.380)
Observations	319	291	287
R-squared	0.024	0.034	0.054

Note: Robust standard errors in parentheses. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

The coefficient of big_hike is positive and insignificant when aggressive hikes are tested (Table 6) (0.293). Such insignificance continues in the cumulative abnormal returns windows CAR [-1, +1] and CAR [-2, +2]. It is noteworthy that the control variable oil_ret is negative and has significant value at the 10% level in a number of models (e.g., coefficient -10.87 in CAR [-2, +2]) which indicates that commodity price volatility is a more useful determinant of Kazakh industrial firms compared to domestic interest rate decisions. This, therefore, rejects Hypothesis 1.

5.3. Findings of Banks (Hypothesis 2)

Hypothesis 2 assumed a greater rate sensitivity in banking sector than in non-banks, the negative "valuation effect" (discount rates and credit risk) to dominate the positive "income effect" (margins). The outcomes are very strong evidence to this hypothesis.

Table 7: Market Reaction to Standard Hikes (Banks)

Variables	AR [0]	CAR [-1, +1]	CAR [-2, +2]
hike	-0.597** (0.212)	-0.032 (0.570)	0.397 (0.944)
ln_assets	-0.375*** (0.059)	-0.447 (0.264)	-0.707** (0.205)
leverage	0.059 (0.195)	0.046 (0.295)	-0.212 (0.265)
roa	0.062 (0.080)	0.612 (0.095)	-0.054 (0.105)
oil_ret	6.631 (11.83)	2.210 (14.90)	-7.292 (16.02)
usd/kzt ret	-0.229 (16.96)	-29.64 (44.59)	-60.13 (79.65)
constant	11.14*** (1.830)	13.08 (7.604)	20.62** (5.939)
Observations	231	199	193
R-squared	0.032	0.035	0.062

Note: Robust standard errors in parentheses. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table 7 shows a negative reaction that is statistically significant. The event day (AR[0]) coefficient is -0.597 ($p < 0.05$). This means that an average rate increase will cause an instant decrease of 0.60 percent in banking share prices. This proves the point that investors consider the increase in rates to be a net negative to Kazakh banks, probably because of the poor expectation of less lending or the poor quality of loans.

Table 8: Market Reaction to Aggressive Hikes (Banks)

Variables	AR [0]	CAR [-1, +1]	CAR [-2, +2]
big_hike	-0.982*** (0.210)	-0.804 (0.590)	0.245 (0.495)
ln_assets	-0.361*** (0.059)	-0.451 (0.251)	-0.721** (0.206)
leverage	0.091 (0.190)	0.047 (0.266)	-0.023 (0.251)
roa	0.076 (0.083)	0.085 (0.123)	-0.046 (0.118)
oil_ret	6.187 (11.98)	1.463 (15.09)	-7.323 (16.10)
usd/kzt ret	6.208 (16.50)	-17.34 (32.37)	-58.49 (68.22)
constant	10.71*** (1.813)	13.25 (7.160)	21.05** (5.984)
Observations	231	199	193
R-squared	0.036	0.040	0.061

Note: Robust standard errors in parentheses. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

The adverse effect is enhanced in the face of monetary policy tightening. Table 8 has a coefficient of big_hike = -0.982, value is less than 0.01.

- Magnitude: An aggressive increase causes almost -1.0% abnormal return on the announcement day.
- Significance: The value is strong at 1%.
- Control variables: It seems that larger banks (ln_assets) are also exposed to larger penalties (coefficient -0.361) implying that systemic banks are more vulnerable to these macro-policy shocks.

This finding enables us to accept Hypothesis 2. Monetary policy has a significant and negative sensitivity on banking sector that is not apparent in the non-banking sector.

5.4. Checks of Robustness (Crisis Interaction)

Interaction terms were added to find out whether the negative reaction of banks is caused by the economic pressures of crisis years (2016, 2020, 2022) only.

Table 9: Crisis Interaction with Standard Hikes (Banks)

Variables	AR [0]	CAR [-1, +1]	CAR [-2, +2]
hike	-0.006 (0.194)	0.076 (0.686)	0.181 (1.133)
crisis	0.889 (0.820)	-0.081 (0.640)	-0.147 (0.900)
hike $\times$ crisis	-1.582* (0.767)	-0.372 (1.066)	0.730 (1.145)
ln_assets	-0.355*** (0.061)	-0.449 (0.266)	-0.707** (0.208)
leverage	0.178 (0.151)	0.041 (0.295)	-0.234 (0.232)
roa	0.091 (0.068)	0.063 (0.094)	-0.064 (0.096)
oil_ret	6.127 (12.75)	1.661 (15.09)	-6.611 (16.10)
usd/kzt ret	1.756 (16.89)	-24.54 (38.76)	-65.98 (67.37)
constant	10.25*** (1.762)	13.16 (7.674)	20.65** (6.042)
Observations	231	199	193
R-squared	0.049	0.036	0.063

Note: Robust standard errors in parentheses. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table 9 indicates that in case of conventional increases, crisis periods are almost the sole determinant of the negative response. The base value hike (during non-crisis years) stands at -0.006 and this is non-significant. The interaction term hike*crisis = -1.582 ($p < 0.1$) is an indication that the small rate hikes are treated by the investors as noise in high economic times only to punish the banks in case of rate hikes in low economic times.

Table 10: Crisis Interaction with Aggressive Hikes (Banks)

Variables	AR [0]	CAR [-1, +1]	CAR [-2, +2]
big_hike	-0.488*** (0.114)	-1.249 (0.829)	-0.484 (0.486)
crisis	0.858 (0.808)	-0.181 (0.676)	-0.218 (0.959)
big_hike $\times$ crisis	-1.125 (0.720)	0.840 (1.165)	1.337 (1.040)
ln_assets	-0.354*** (0.060)	-0.450 (0.249)	-0.710** (0.212)
leverage	0.177 (0.147)	0.030 (0.246)	-0.240 (0.229)
roa	0.098 (0.072)	0.081 (0.115)	-0.051 (0.102)
oil_ret	6.271 (12.77)	1.969 (14.96)	-6.412 (15.97)
usd/kzt ret	2.913 (16.55)	-20.46 (34.62)	-63.77 (64.13)
constant	10.25*** (1.741)	13.28* (7.102)	20.80** (6.187)
Observations	231	199	193
R-squared	0.049	0.042	0.064

Note: Robust standard errors in parentheses. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Nonetheless, Table 10 shows a critical difference in case of aggressive hike increases made by National Bank of Kazakhstan. The individual term big_hike = -0.488 and significant at the 1% level ($p < 0.01$). The interaction term big_hike $\times$ crisis = -1.125 (non significant). The relevance of the base term demonstrates that even when there is not a crisis, the market is pricing aggressive hikes of interest rates negatively.

Although the response is mathematically bigger in times of crisis, the fact that the base term is significant points to the fact that aggressive tightening is considered an inherent negative signal to banks despite the macroeconomic context. This validates the fact that the transmission mechanism of the aggressive policy decisions that are made at the NBK have a powerful transmission effect on the bank equity valuations.

6. Conclusion

6.1. Summary of Findings

This paper has explored the effect of monetary policy announcements made by the National Bank of Kazakhstan (NBK) on the stock exchange of this country. The main goal was to estimate whether monetary policy signal transmission portrays sectoral asymmetry between bank and non-bank firms. The result of the event study, which involves 75 policy decisions that took place in the period of 2016 to 2024, gives strong evidence that transmission in the monetary policy of this emergent market is highly segmented.

First, the analysis does not give any statistical support to the Hypothesis 1. Against the normal asset pricing theory, the non-banking sector (which included large-cap industrial, energy and telecom companies) did not respond to significant increases in the base rates. The coefficients of both the standard and aggressive increases were statistically insignificant (and in most cases positive), which means that the self-valuations of the real-sector firms in Kazakhstan are practically immune to short-term shocks in the domestic interest rates. It is probably due to the presence of the "commodity-dominance" of these companies, whose returns are not due to the cost of capital in the domestic market, but rather to the prices of oil on the global market.

Second, Hypothesis 2 is strongly accepted. Banking has a negative sensitivity to monetary tightening which is distinct and statistically significant. The findings indicate that there is a strong Threshold Effect:

- **Standard Hikes:** An overall increase in the rates would lead to the average rate of abnormal reduction of 0.60 percent in the banking stocks in the lack of significance ($p < 0.05$). But robustness checks suggest that this reaction could be mostly because of the economic crisis periods.
- **Aggressive Hikes:** The extensive tightening (> 25 basis points) of the NBK, is followed by negative valuation shock of an average of 0.98% by the announcement date. Critically, the regression analysis also establishes that the aggressive increases are punished by the market

in any circumstance of a crisis, which implies that there is a basic channel on the price of credit where the high rates are seen to impair loan quality and reduce credit demand.

Third, the regression estimates reflected a strong negative coefficient of size of firm ($\ln_assets$, which is approximately -0.36), which means that big systemic banks are more vulnerable to policy shocks than small banks. This is probably an indication of the increased regulatory stress and increased capital requirements of systemically important financial institutions at times of tightening.

6.2. Limitations of the Study

Though this work offers new insights into the Kazakh market, there are a number of limitations that need to be considered:

- **Sample Size and Event Clustering:** Although the whole period of inflation-targeting of the post-2015 period is covered, the sample of tightening events is quite small. The number of rate increases in the sample was only 14 in total with the 9 Aggressive Hikes with a large fraction (5 of them) occurring during the 2022 geopolitical crisis.
- **Sectoral Heterogeneity:** The Non-Bank portfolio is a mixture of various industries, including but not limited to mining and telecommunications. Though the aggregate finding had no sensitivity, it can also be that individual capital-intensive sub-sectors (such as utilities) are interest rate sensitive (the announcement effect) which is not reflected on average when the sample includes commodity exporters.
- **Short-term Focus:** This piece of research is an event study, so it only captures the immediate investor response (the announcement effect). It fails to estimate the economic effects of long-term tight monetary policy on the profitability of corporates or dividend payout, which could be felt in months, not days.

6.3. Future Research Areas

There are several possible future research directions:

- The results indicate that future research should examine whether the market is responding symmetrically to the rate cuts as the history of the NBK in terms of inflation targeting lengthens. In theory, an easing cycle is supposed to increase bank valuations, however, in an emerging market, it may also be viewed as indicator of a falling economic stance.
- Transmission Channel Decomposition: Future studies may use a path analysis to establish the reason behind why the banks would respond negatively. Controlling change in the government bond yield curve and interbank lending rates on the day of the announcement can help with it.
- Cross-Regional Comparison: The comparative study between Kazakhstan and other resource-dependent emerging economies (e.g., Azerbaijan, Russia, and Gulf Cooperation Council states) would be desirable.

In conclusion, this work shows that monetary policy transmission to the stock prices in Kazakhstan is asymmetric and strong. Although the industrial sector is immune against the domestic rate signals, the banking sector is the first shock absorber, and it reprices much and negatively to the aggressive tightening of the monetary policy.

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