ҚАРЖЫ, ЕСЕП ЖӘНЕ АУДИТ ФИНАНСЫ, УЧЕТ И АУДИТ FINANCE. ACCOUNTING AND AUDITING

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Exploring the Relationship between Economic Indicators, Investor Distrust, and Stock Market Volatility: case study of the KASE index dynamics

Abstract

Object: The aim of the article is to investigate the relationship between investor distrust and the overall financial stability of the Kazakhstan Stock Exchange (KASE) through a comprehensive analysis of qualitative and quantitative methods

Methods: Qualitative analysis involves examining the activities of KASE and investor relations practices, while quantitative analysis employs regression modeling to explore the impact of macroeconomic factors on KASE index volatility.

Findings: In the research varying levels of investor engagement and investor relations activities in Kazakhstan were revealed with significant correlations between macroeconomic indicators such as inflation, unemployment, GDP, and KASE index volatility. Results indicate that while inflation and GDP have limited impact, unemployment significantly influences market volatility, leading to the fact that investors less actively participate in the market activities in terms of poor economic conditions.

Conclusions: Insufficient investor confidence, influenced by macroeconomic conditions and financial literacy, hinders the growth of the stock market. Building trust among investors requires transparent regulations, effective governance, and investor education initiatives to foster market participation and development.

Keywords: stock market index volatility, investor distrust, stock market, bank-based theory, market based theory, IR (investor relation), macroeconomic factors.

Introduction

The significance of the relationship between investors and issuers lies in its pivotal role within financial markets. This relationship serves as the foundation for the allocation of capital and the functioning of the economy as a whole. Investors provide crucial funds to issuers, allowing them to pursue their business objectives, while issuers offer investment opportunities that enable investors to generate returns. Additionally, a strong relationship fosters transparency, accountability, and confidence, essential elements for efficient market operations. Moreover, this connection influences market dynamics, impacting pricing, liquidity, and overall market stability. Thus, understanding and nurturing the relationship between investors and issuers is fundamental for sustaining healthy financial markets and promoting economic growth (Choi, 2000).

In financial market, there are two fundamental theories, according to which the country's economy operates: bank-based and market-based. The bank-based theory argues that the banking system, especially in

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early-stage economies, plays a more significant role in fostering economic growth and development compared to markets. This perspective challenges the efficiency of markets on several fronts. Firstly, insiders, who possess greater knowledge about companies, are more responsive within the banking system. Secondly, the ease of entry and exit in the stock market diminishes shareholders' concerns over managerial decisions, as they can readily divest from one company and invest in another. This theory underscores both the advantages and drawbacks of the financial system, emphasizing the positive impact banks have on economic growth and development. Contrarily, the market-based theory suggests that over time, market systems are more conducive to economic progress. From this viewpoint, the external environment, rather than internal traits, largely influences the success of an organization. Investor distrust may arise in developing countries due to the prevalence of the bank-based theory, which posits that banks are more effective drivers of economic growth in such contexts (Levine, 2002).

Literature Review

The stock market in Kazakhstan is viewed as one of the biggest and the oldest ones. The number of issuers and investors rose gradually during the years. However, the stock market is still considered weak due to the fact that there is a lack of liquid financial instruments on the market. In addition, low liquidity is occurred due to the issuers, who do not want to be publicly traded (Niyazbekova, 2014; Omarkhanova et al., 2016). As, the financial crisis has been a history, some authors highlight the necessity to build strong relations between financial community and issuers. As Laskin notes, Investor Relation (IR) is considered as a vital tool for the communication between financial market participants and companies (issuers) as well. Below, we demonstrate the relation building process with the help of IR instruments (Laskin, 2011) (Fig. 1).



Figure 1. IR instruments

Note — *compiled by the author based on (Bushee, Miller, 2012)*

The definition provided by the National Investor Relations Institute (NIRI) offers a comprehensive understanding of investor relations, emphasizing its strategic nature and the integration of various disciplines such as finance, communication, marketing, and securities law compliance. While the concept of trust is not explicitly mentioned in this definition, it is implicitly embedded within the notion of "effective two-way communication" and the goal of achieving "fair valuation" of a company's securities (McGuinness, 1993; NIRI, 2017). Trust forms the foundation of effective communication between a company and its stakeholders, including investors. Without trust, communication channels may be strained or ineffective, hindering the flow of information and potentially affecting the valuation of a company's securities. Investors rely on transparent and trustworthy communication from companies to make informed decisions about their investments. Furthermore, the concept of "fair valuation" implies a perception of fairness and reliability in the assessment of a company's worth. Trust plays a crucial role in this process, as investors must trust the information provided by the company and believe that the valuation reflects an accurate representation of its financial health and prospects. In essence, while the term "trust" may not be explicitly stated in the definition provided by NIRI, it underpins the core principles of investor relations, effective communication, and the fair valuation of a company's securities (NIRI, 2017).

Methods

In this research, we employ both qualitative and quantitative method to analyze the activities of the Kazakhstan Stock Exchange (KASE) over past periods. The primary objective is to investigate the relationship between investor distrust and the overall financial stability of the stock market.

According to the qualitative analysis, we can take the research of Karolyi et al. (2020). To quantify the breadth of IR activities across these subcategories, the authors created an additive IR index, known as the Total index. This index aggregates responses from survey questions related to each subcategory, with responses coded numerically as 1 or 0.

Through the analysis of the historical data on KASE activities, which include trading volumes, market indices, volatility measures, and investor sentiment indicators, we seek to discover the patterns and correlations that led to the dynamics between investor distrust and market stability. Through the assistance of the statistical analysis and econometric construction, we in this research try to give an insight into the investors' distrust and its effect on the stock market resilience in the Republic of Kazakhstan. Nowadays, the KASE market is offering a range of different services to private investors, like selling and buying securities or other

types of financial instruments. KASE, in today's world, does not only facilitate trading with stocks and bonds, but also that of investment funds instruments, bonds of international financial organizations, and even the government securities. Besides these, "conventional" types of securities, stock market gives you the opportunities to do with the REPO, which is safer and the reason why the investors trust each other. Nonetheless, as Gorton et al. (2020) have shown, such transactions are the ones that enable the investors to buy or sell the securities with the contingency to re-purchase or to re-sell them in a certain period at some very specific price.

The derivatives market is also envisioned to be the most appealing one for Kazakhstani investors. This market is based on the contracts of the securities such as commodities, etc. Futures are the most popular contracts that let the producers provide a certain amount of the underlying assets in a particular time frame and at a particular price. There is a number of securities of the KASE index that have already been traded in the futures market. Since, Kazakhstani stock market is still considered as a developing market, such kind of contracts assist the transmission of transactions and increase trust among the private investors. Among the advantages, the examples of risk management, capital raising and short-term deals (since most transactions take place in a money market) are worth mentioning. These benefits are extremely crucial for the gaining of popularity and financial trust in the Kazakhstani stock exchange.

Besides, the KASE stock market provides services to issuers, such as the listing, the initial public offers (IPOs), and the securities placement. For a company interested in enhancing the attractiveness of its financial assets on the Kazakhstan stock market, it must undergo the listing process with KASE. Following the listing process, the company gains the opportunity to conduct both public and private placements of securities, facilitating the inflow of long-term capital and fostering company development. Listing also grants permanent access to the capital market. Specialized trades are employed for the placement, sale, redemption, and purchase of financial instruments. Specialized trades can be conducted in single or multiple iterations according to the preferences of the seller or buyer. Additional flotation of securities to be placed in specialized trades can only be traded on the day of the auction. An IPO involves the sale of shares to the general public on the stock market. It represents a significant step for any company seeking to diversify its sources of financing. While not every company can afford to go public due to the associated costs and prestige, an IPO has numerous long-term benefits that outweigh the initial financial investment. Ultimately, the primary goal of an IPO is to raise capital for the company's expansion or the creation of infrastructure, making it a pivotal milestone in the company's growth trajectory (Kabasova et al., 2017).

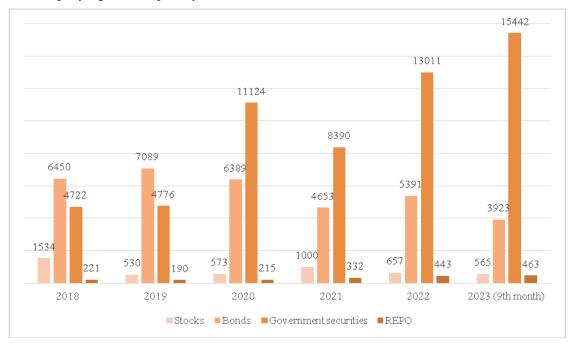


Figure 2. Trading volume on KASE (in USD mln)

Note — compiled by the author based on (KASE shareholder reports, 2023)

Based on the provided data, we can observe the trading volumes for different financial instruments on the Kazakhstan Stock Exchange over the years. Bonds have consistently had high trading volumes, indicating that they are popular among investors. The trading volume for bonds has increased steadily from 2018 to 2023. Government securities also have significant trading volumes, with an increasing trend over the years, while REPO transactions have shown notable trading volumes, with a fluctuating pattern over the years but generally maintaining a significant presence. On the other hand, the trading volume for stocks has been comparatively lower throughout the years, indicating that investors may have more trust in debt securities such as bonds and government securities.

Results

As Karolyi et al. (2020) stated, the average answer to a certain problem is the same for all the firms, and the firms are given a value of 1 if their answer is above the median, and 0 otherwise. The IR index has a broad methodology that comprises of the questionnaire (which consists of 71 mandatory and optional questions) that are divided in different categories, thus the survey can evaluate the particular investors' performance in the company. The Total Index is an all-inclusive evaluation of the corporate IR performance of the companies, which includes their global market interaction, participants intermediaries, investors, communication policies and ESG initiative. The results of the study of investor relations (IR) in Kazakhstan show different levels of involvement in various parts of the operations of IR. An all-inclusive index, which is the sum of scores by subcategory, gives a holistic picture of the country's IR landscape. In regard to the global involvement, Kazakhstani companies show a mixed level of participation with a value of 0.37. Although there is a certain presence of the country in the global markets, the level of coverage may not be as pronounced as other countries. The sub group of the intermediaries is shown to be highly engaged with an indicator of 0.50. This implies active participation in conferences, striving for listing on various exchanges, interaction with analysts and brokers to disseminate information and attract investments. However, direct interaction with investors appears to be minimal, with an indicator of 0.00. Kazakhstani firms may have limited initiatives in holding private meetings or other measures to directly meet the information needs of investors. As for the communication policy, there is some compliance, but the level of implementation is modest, as evidenced by the indicator of 0.20. This suggests that although some firms provide guidance to financial markets, the scale

As, nowadays, ESG is becoming more and more important for investors, Kazakhstani companies started to be moderately engaged with ESG initiatives. The score of 0.35–0.37 indicate these efforts, as the companies, nowadays, actively promote social responsibility, environmental and governance issues. Such results reveal a variety of public relations and highlight the strong efforts in terms of engagement with ESG initiatives and potential improvement areas. As direct investor engagement and policy implementations. Kazakhstani's market specific characteristics requires careful consideration for the IR practices improvement.

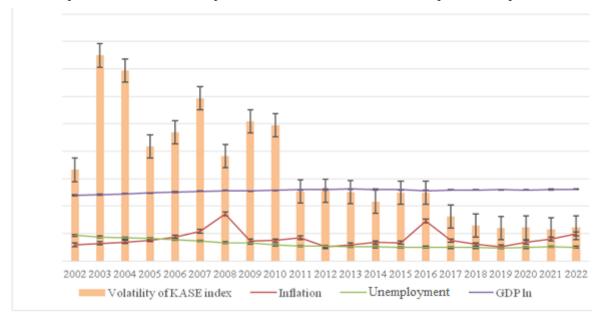


Figure 3. Volatility of KASE index and macroeconomic factors

Note — compiled by the author based on (KASE shareholder reports, 2023)

The second part of the paper is to provide a quantitative analysis. As, Kazakhstan is a bank-based economy, we apply such variables as inflation and employment, which are directly dependent on the debt-burden and interest rates. We consider two main factors that lead to the investors' distrust, as financial illiteracy and poor macroeconomic conditions within the country. Volatility of the economic indicators along with the lack of knowledge in financial markets are associated with the possible risks, leading to potential investors' anxiety. Developed econometric model includes such variables as unemployment, GDP (in log, which is used for data stabilization), inflation rate (Tibshirani, 1988). The variables have been observed throughout 20 years. The dynamics in macroeconomic variables lead to the immediate response of KASE index.

We identified that there was a rolling coaster in inflation, varying from 17,1 % in 2008, then dropping to 5,1 % in 2012. This indicates that KASE index is closely related to inflation rates, showing positive relationship between the variables, higher inflation rate leads to lower KASE index, leading to its uncertainty and highest volatility.

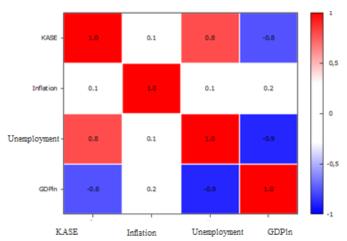


Figure 4. Correlation matrix between variables

Note — compiled by the author based on (KASE shareholder reports, 2023)

Correlation matrix is performed in order to show the relation between KASE index with other factors. As we can see, there is a stable relation between KASE index and unemployment rate, meaning that the increase in unemployment rate leads to an increase in KASE volatility. However, the correlation of KASE and GDP shows the inverse relation, increase in GDP leads to a decrease in volatility of the index, leading to its stability on the market and potential investors' trust (Patatoukas, 2021).

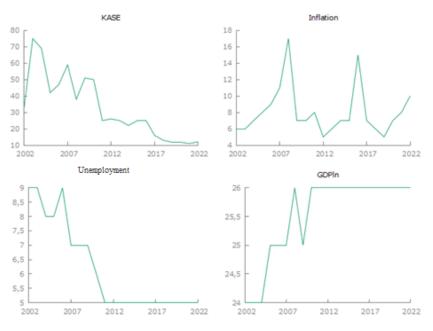


Figure 5. Macroeconomic variables volatility 2002–2022

Note — *compiled by the author based on (World Bank Data)*

Based on the graph provided, there appears to be a potential positive and negative relationship between inflation, unemployment, and volatility in the KASE index. However, the relationship with GDP is less clear and may depend on various other factors influencing the stock market. In order to analyze the impact of macroeconomic factors on the KASE index, we construct the multiple linear regression model:

KASE (indexvolatility) =
$$b0 + b1GDP + b2Inflation + b3UnEmp + \varepsilon$$
, (1),

where, GDP — gross domestic product for the period of twenty years (yearly data);

Inflation and Unemp — Inflation and unemployement of the Republic of Kazakhstan from 2002–2022 (yearly basis).

Table. OLS, observations from 2002–2022 were used. (T = 21). Dependent variable: KASE

Variables under observation	Coefficient	Std.error	t-statistics	p-value
Inflation	0,270199	0,938072	0,2880	0,7766
Unemployment	9,35146	1,62966	5,738	<0,0001***
GDPln	-1,07101	0,479343	-2,234	0,0384**

F statistics 2.01e-09

R squared 0,624470

* p < .05, ** p < .01, *** p < .001Note — compiled by the author based on (KASE shareholder reports, 2023; World Bank Data)

For every one-unit increase in Inflation, the KASE index volatility increases by approximately 0.270199 units. Increase in Unemployment, the KASE index volatility increases by approximately 9.35146 units, while for every one-unit increase in GDPln, the KASE index volatility decreases by approximately 1.07101 units. The model results suggest that Inflation, Unemployment, and GDPln are significant predictors of KASE index volatility, with Unemployment having the strongest impact followed by GDPln, while Inflation does not appear to have a significant effect.

Discussions

Through rigorous analysis, we aim to quantify the relationships between these factors and the KASE index, offering valuable insights into investor attitudes and market behavior. The intersection of economic indicators, financial literacy, and macroeconomic conditions underscores the underlying reasons for distrust toward the stock market in Kazakhstan. Through our modeling efforts, we seek to better understand these dynamics and work towards building trust and confidence in the financial markets.

As it is seen in the Table, all three analyzed indicators: Inflation, Unemployment and GDPIn are considered as important forecasters of the volatility of the KASE index. Unemployment has the greatest impact, followed by GDPln. However, according to the results of the model, inflation does not seem to have a statistically significant effect on the volatility of the KASE index.

As for the quantitative study of investor relations (IR), the authors face problems due to the lack of time series data for the same firms, which makes it difficult to analyze changes within firms over time. However, we are less concerned about the potential cognitive biases resulting from repeated surveys of the same firms. In addition, the survey questions change from year to year, while the main functions of the IR coincide only partially. This deliberate change is aimed at identifying new trends in international relations and requires changing issues over time. This variability also helps mitigate potential biases in responses.

Conclusions

The primary hindrance to the initial growth and development of the stock market often stems from insufficient investor confidence. Without a solid foundation of trust, investors may be reluctant to engage with the market, leading to stagnant growth and limited development. Building confidence among investors is crucial for fostering participation and driving the expansion of the stock market. This confidence can be cultivated through transparent regulations, effective governance mechanisms, reliable market infrastructure, and consistent communication of market performance and opportunities. Additionally, investor education initiatives can play a vital role in enhancing understanding and trust in the workings of the stock market, ultimately paving the way for its growth and advancement.

In summary, this study offers insightful information about the relationship between the KASE volatility index and key economic indicators such as unemployment and GDP. The correlation analysis highlights a strong positive correlation between the KASE volatility index and unemployment, indicating that higher levels of unemployment are associated with increased volatility in the KASE index. Conversely, a negative correlation is observed between GDP and the KASE volatility index, suggesting that higher GDP levels tend to coincide with decreased volatility in the index, reflecting greater stability in the market.

While the relationship with inflation is not as pronounced, the study identifies years with higher unemployment rates, such as 2002 and 2003, correlating with increased volatility in the KASE index. This implies that higher unemployment rates may contribute to heightened market uncertainty. On the other hand, the logarithm of GDP generally exhibits an upward trend over the years, indicating overall economic growth. Higher GDP levels typically indicate a healthier economy, potentially leading to lower volatility in the stock market. However, fluctuations in GDP growth rates suggest that the relationship between GDP and volatility may not always be straightforward. Overall, this research provides valuable insights into the interplay between economic indicators and stock market volatility, shedding light on the factors influencing market dynamics in Kazakhstan.

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Экономикалық көрсеткіштер, инвесторлардың сенімсіздігі және қор нарығының құбылмалылығы арасындағы байланысты зерттеу: KASE индексінің динамикасының мысалы

Аңдатпа:

Мақсаты: Мақаланың мақсаты — сапалы және сандық әдістерді кешенді талдау арқылы инвесторлардың сенімсіздігі мен Қазақстан қор биржасының (KASE) жалпы қаржылық тұрақтылығы арасындағы байланысты зерттеу.

Әдісі: Сапалық талдау KASE қызметін және инвесторлармен өзара қарым-қатынас тәжірибесін зерделеуді көздейді, ал сандық талдау KASE индексінің құбылмалылығына макроэкономикалық факторлардың әсерін зерттеу үшін регрессиялық модельдеуді пайдаланады.

Қорытынды: Зерттеу инфляция, жұмыссыздық, ЖІӨ және КАЅЕ индексінің құбылмалылығы сияқты макроэкономикалық көрсеткіштер арасындағы елеулі корреляциямен Қазақстандағы инвесторлардың қатысуы мен инвесторлармен байланыс жөніндегі қызметтің әртүрлі деңгейлерін анықтады. Нәтижелер инфляция мен ЖІӨ-нің әсері шектеулі болғанымен, жұмыссыздық нарықтың құбылмалылығына айтарлықтай әсер ететінін көрсетеді, бұл инвесторлардың нашар экономикалық жағдайларда нарықтық қызметке азырақ қатысуына әкелелі.

Tұжырымдама: Макроэкономикалық жағдайлар мен қаржылық сауаттылықтан туындаған инвесторлардың жеткіліксіз сенімі қор нарығының өсуін тежеп отыр. Инвесторлар арасында сенімді қалыптастыру нарыққа қатысу мен дамуды ынталандыру үшін ашық реттеуді, тиімді басқаруды және инвесторларды оқыту бастамаларын талап етеді.

Кілт сөздер: қор нарығы индексінің құбылмалылығы, инвесторларға сенімсіздік, қор нарығы, банк теориясы, нарық теориясы, IR (инвесторлық қатынастар), макроэкономикалық факторлар.

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Исследование взаимосвязи экономических показателей, недоверия инвесторов и волатильности фондового рынка: пример динамики индекса KASE

Аннотация:

Цель: Целью данной статьи является исследование взаимосвязи между недоверием инвесторов и общей финансовой стабильностью Казахстанской фондовой биржи (KASE) посредством комплексного анализа качественными и количественными методами.

Методы: Качественный анализ предполагает изучение деятельности KASE и практики взаимоотношений с инвесторами, а количественный анализ использует регрессионное моделирование для изучения влияния макроэкономических факторов на волатильность индекса KASE.

Результаты: Исследование выявило различные уровни участия инвесторов и деятельности по связям с инвесторами в Казахстане, со значительной корреляцией между макроэкономическими показателями, такими как инфляция, безработица, ВВП и волатильность индекса КАSE. Результаты показывают, что, хотя влияние инфляции и ВВП ограничено, безработица существенно влияет на волатильность рынка, что приводит к тому, что инвесторы менее активно участвуют в рыночной деятельности в условиях плохих экономических условий.

Выводы: Недостаточное доверие инвесторов, вызванное макроэкономическими условиями и финансовой грамотностью, сдерживает рост фондового рынка. Укрепление доверия среди инвесторов требует прозрачного регулирования, эффективного управления и инициатив по обучению инвесторов для содействия участию на рынке и его развитию.

Ключевые слова: волатильность индекса фондового рынка, недоверие инвесторов, фондовый рынок, банковская теория, рыночная теория, IR (отношения с инвесторами), макроэкономические факторы.

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