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REACTION AND ADAPTATION OF THE STOCK MARKETS TO THE FULL-SCALE INVASION OF UKRAINE

РЕАКЦІЯ ТА АДАПТАЦІЯ ФОНДОВИХ РИНКІВ НА ПОВНОМАСШТАБНЕ ВТОРГНЕННЯ В УКРАЇНУ

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This article investigates the reaction and adaptation of stock markets in response to the Full-Scale Invasion of Ukraine in February 2022. It examines the immediate effects on the Ukrainian stock market, highlighting the significant decline in trading volumes and stock prices due to geopolitical uncertainty. The study analyzes the behavior of major indices, including the PFTS and S&P 500, and explores investor sentiment during this crisis. Notably, while the S&P 500 experienced an initial drop, it rebounded as investors perceived a buying opportunity, reflecting resilience in more diversified markets. In contrast, the Ukrainian market faced severe disruptions, prompting regulatory responses and measures to restore confidence. The paper also considers gold’s reaction as a safe-haven asset, emphasizing its role in mitigating risks amid heightened geopolitical tensions. The findings underline the complexities of market dynamics during crises and the varying impacts on domestic and international investors.
Keywords: stock markets, S&P500, PFTS, safe-haven assets, investment.

Ця стаття досліджує реакцію та адаптацію фондових ринків у відповідь на повномасштабне вторгнення в Україну в лютому 2022 року. В роботі проаналізовано реакцію українського фондового ринку та наслідки подій, підкреслюючи значне зниження обсягів торгівлі та цін на акції через геополітичну невизначеність. Робота аналізує реакцію основних індексів, включаючи ПФТС та S&P 500, а також аналізує настрій інвесторів під час цієї кризи. До прикладу, хоча S&P 500 зазнав початкового падіння, він відновився, оскільки інвестори сприйняли цю ситуацію як можливість для купівлі, що відображає стійкість у більш диверсифікованих ринках. У той же час український ринок зіткнувся з серйозними викликами, що спонукало до регуляторних відповідей і заходів для відновлення довіри. Стаття також розглядає реакцію золота як захисного активу, підкреслюючи його роль у пом'якшенні ризиків на тлі підвищених геополітичних напружень. Результати підкреслюють складність динаміки та волотильності ринку під час криз та їх вплив на внутрішніх та міжнародних інвесторів. Основною метою є саме аналіз реакції фондових ринків на повномасштабне вторгнення на прикладі таких індексів як S&P500 та ПФТС, водночас дане питання зберігає свою актуальність, адже аналіз подібних ринкових реакцій на глобальні світові кризові події є необхідним для побудови розуміння поведінки інвесторів в подібних сценаріях. Основні методи дослідження це спостереження, порівняння та аналіз. Отримані результати вказують на те, що глобальна реакція на прикладі індексу S&P500 на повномасштабне вторгнення була сприйнята іноземними інвесторами як можливість для купівлі, хоча й спостерігалось доволі серйозне підвищення ринкової волотильності, що зазвичай є свідченням ринкової невизначеності. З практичної точки зору стаття також розглядає поведінку основного захисного активу, який широко розповсюджений серед інвесторів з будь-якого куточку планети, а саме золото. Стаття вкотре підкреслює цінність та ефективність даного активу в кризових ситуаціях. На прикладі поведінки золота ми можемо спостерігати миттєву реакцію. За декілька днів після повномасштабного вторгнення ціна активу зросла на 8%, що є суттєвим показником.
Ключові слова: фондовий ринок, S&P500, ПФТС, захисні активи, інвестиції.

Staging problems. The stock market plays a crucial role in any country’s economy. It is a barometer of its financial health and provides a mechanism for raising capital to fuel growth and development. The importance of the stock market in Ukraine has become even more pronounced in recent years as the country faces significant economic challenges due to ongoing geopolitical instability. The full-scale invasion in 2022 has created unprecedented turbulence in the national economy, pushing policymakers to reassess the stock market's role in stabilizing the economy and attracting external capital.

Historically, stock markets are sensitive to global events, and Ukraine's market is no exception. Global indices, like the S&P 500, reacted to the invasion with an initial drop, only to recover within the same trading session. This reflects a broader market trend where uncertainty often triggers a short-term sell-off, followed by a rally as investors seize buying opportunities. Such behavior underscores the potential for Ukraine's stock market to attract foreign investors even during times of crisis, provided the right market conditions are in place.

To fully capitalize on this potential, Ukraine must focus on stabilizing its stock market and fostering an environment conducive to long-term growth. This includes addressing issues like the limited availability of high-quality securities, creating a robust pricing mechanism, and enhancing market transparency. Additionally, aligning Ukraine's stock market with international standards and promoting greater integration with global financial markets is critical for attracting domestic and foreign investment.

This study analyzes the Ukrainian stock market's response to external shocks, such as the ongoing war, and explores strategies for its integration into global markets. Focusing on organizational and economic factors, this work aims to identify key measures to stabilize and develop the stock market, ensuring that it plays a central role in Ukraine's economic recovery and future growth.

Analysis of the latest research and publications. The reaction of stock markets to crises, particularly geopolitical ones, has been studied extensively. Research shows that political instability drives volatility and capital outflows from stock markets, especially in emerging economies. Chuang and Lee suggest that investor behavior during periods of uncertainty reflects a risk-off approach, leading to significant declines in trading volumes and market liquidity [11]. Similarly, P. H. Hsu noted that during periods of heightened geopolitical tension, stock markets tend to suffer sharp declines in investor confidence, resulting in decreased investments [6].

Research on Ukraine's stock market during the annexation of Crimea in 2014 shows parallels to the current situation. W.J. O'Neil posits that governments should intervene in markets to stabilize them during national crises [12]. However, as U. Motorniuk argues, market infrastructure must be resilient and adaptable for these measures to be effective [10]. The Ukrainian market has historically been minor and vulnerable to external shocks, with limited diversification in traded stocks, exacerbating the effects of geopolitical events.

Highlighting previously unresolved parts of the general problem. Despite the considerable research on stock market reactions to geopolitical events, several unresolved aspects remain, especially concerning the full-scale invasion of Ukraine. Some of these include:

– Investor Behavior in Prolonged Conflict Scenarios: An area that requires further exploration is how investor behavior evolves during prolonged conflicts. While initial reactions to crises are well-documented, the shifts in investor sentiment, risk tolerance, and asset allocation throughout an extended war remain under-researched.

– Technological and economic sanctions affect markets: Economic sanctions and restrictions on technology sectors have become critical tools during the war in Ukraine, but the stock market implications of these sanctions, especially in sectors like tech and energy, are still not fully understood. The complex interaction between sanctions, stock performance, and investor confidence requires further study.

Formulation of the Goals of the Article. This work aims to explore the impact of the ongoing war in Ukraine on the country's stock market and to analyze how external factors, particularly geopolitical tensions, influence investor behavior in both Ukrainian and global markets. The specific objectives of the research are as follows:

– Examine the immediate effects of the full-scale invasion on the Ukrainian stock market, focusing on trading volumes, price fluctuations, and investor sentiment.

– Analyze the resilience and adaptability of the Ukrainian stock market infrastructure during the conflict, including regulatory responses and government initiatives aimed at stabilizing the market.

– Investigate the reaction of major global indices, such as the S&P 500, to the geopolitical crisis, identifying patterns of investor behavior and market recovery following initial declines.

– Assess the performance of gold as a safe-haven asset during periods of heightened uncertainty, analyzing its price movements in response to the war and its role in investor portfolio strategies.

Presentation of the main material of the research. The war in Ukraine has led to severe disruptions in the country's stock market. Trading volumes decreased dramatically in the initial weeks of the conflict as both domestic and foreign investors adopted a wait-and-see approach. Stock prices plummeted, and market liquidity shrank due to widespread uncertainty about the war's outcome and impact on the national economy. The Ukrainian Exchange and PFTS, the two leading stock exchanges in Ukraine, witnessed drastic declines in the value of their indices. Investor sentiment was particularly pessimistic in the early stages of the war, with many investors pulling out of the market or reducing their exposure to Ukrainian assets. According to C. Bourne, this behavior is typical in crises, where investors prioritize security and liquidity over higher returns [2]. We can see that while comparing PFTS trading volumes before and after full-scale invasion in Figure 1.

As we can see, investor reaction declined before the full-scale invasion in February 2022. There was already colossal tension, and trading volumes were extremely low on the last day before the invasion. After 24.02.2022, PFTS was not functioning, resulting in zero trading volume. The fresh data shows that trading volume is almost twice as high as the month before the invasion and multiple times higher than the same day in the past years, indicating growth in investors' interest and activity.

Despite the challenges posed by the war, the Ukrainian stock market has demonstrated some adaptability. Government and regulatory authorities have taken steps to stabilize the market by maintaining transparency and ensuring the smooth operation of market infrastructure. For instance, the National Securities and Stock Market Commission of Ukraine has been working closely with international regulators to ensure that the market remains functional despite challenging conditions. G. Abuselidze noted that international cooperation and regulatory coordination are essential for emerging markets to withstand external shocks [4].

Moreover, the government has implemented measures to encourage local investment and boost market liquidity. In particular, efforts have been made to attract foreign investors to Ukraine by offering tax incentives and improving the overall business climate. P.H. Hsu suggests that such initiatives can help to restore investor confidence and attract capital inflows, which are crucial for economic recovery [6].

The global stock market response to the war was notably less severe. The S&P 500 experienced an initial drop in price due to global fears of broader geopolitical instability and economic uncertainty. As seen in

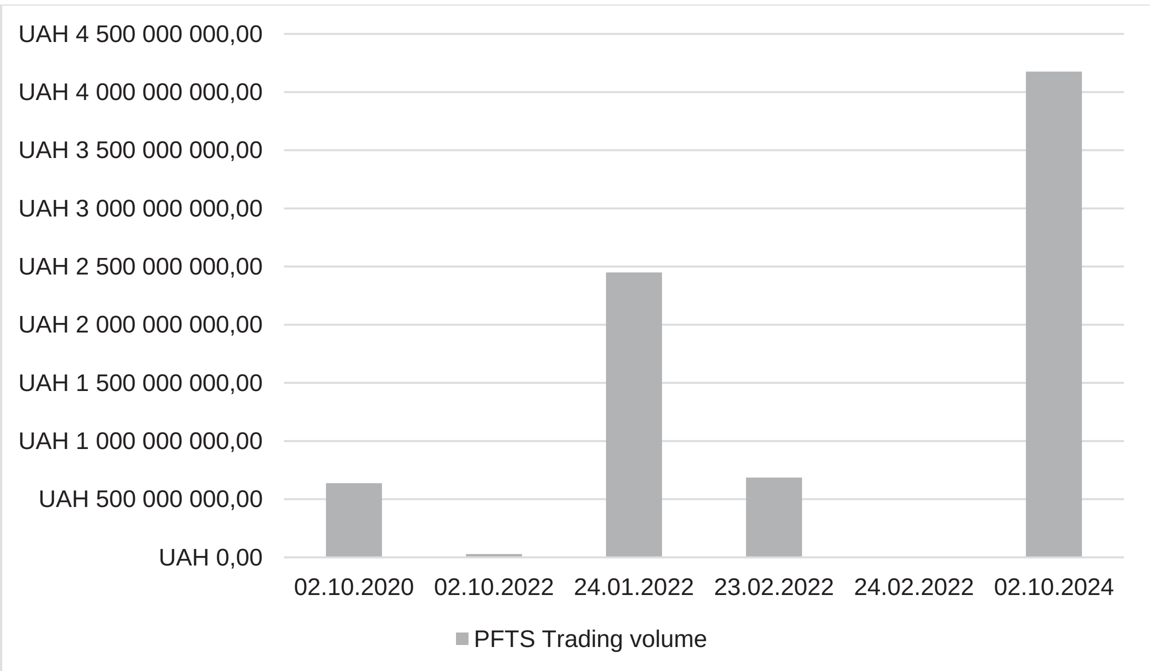


Figure 1. PFTS trading volumes from 02.10.2020 to 02.10.20224, UAH

Source: Data – PFTS's official website [7]

Figure 2, the S&P 500 fell 2.5% on the day following the invasion, creating a visible gap between the market close and open prices.

However, the index quickly rebounded, recovering nearly 3% by the end of the trading day. This swift recovery suggests that global investors viewed the price drop as an opportunity to buy. Unlike Ukraine's domestic market, the S&P 500's reaction was tempered by the broader diversification of its constituent companies, which have limited exposure to the direct consequences of the war. The U.S. economy's relative stability and strong corporate earnings further buffered the index against more significant losses.

On the other hand, Gold, traditionally considered a safe-haven asset, reacted in a manner consistent with its reputation for protecting investors during geopolitical uncertainty. As illustrated in Figure 3, the price of gold showed volatility immediately after the invasion but quickly stabilized, eventually reaching new highs by early March 2024.

As seen in Figure 3, gold prices showed huge initial volatility on the day of the invasion, with a dip to around $1,880 as the day low (DL). However, the day closed relatively stable, above $1,900, while the day high (DH) was around $1,980. This initial fluctuation reflects the market's cautious sentiment as investors sought refuge in gold.

As the situation evolved, the price of gold surged notably by 01.03.2024, with the opening price rising sharply and continuing to increase throughout the trading session. By this time, the demand for gold as a protective asset became more pronounced, as evidenced by an upward shift in the day-high (DH) and day-low levels. This reaction is typical during periods of heightened geopolitical risk, where investors seek to hedge against instability in other financial markets.

By 08.03.2024, the upward trend solidified further, with gold's opening price exceeding $2,010 and the closing price nearing $2,060. This sustained rise in gold prices underscores the role of metal as a preferred investment during crises. The consistent growth of gold throughout this period highlights its function as a reliable store of value, especially in times of widespread uncertainty. Investors worldwide turned to gold to mitigate risks associated with volatility in equities and other financial assets, reinforcing its status as a safe asset in global markets.

The resilience of Ukraine's stock market can be partly attributed to its infrastructure and the regulatory framework supporting it. The National Securities and Stock Market Commission of Ukraine made critical adjustments, such as modifying trading hours and introducing new reporting requirements to maintain transparency. These steps were vital in keeping the market functional during times of crisis, as highlighted by

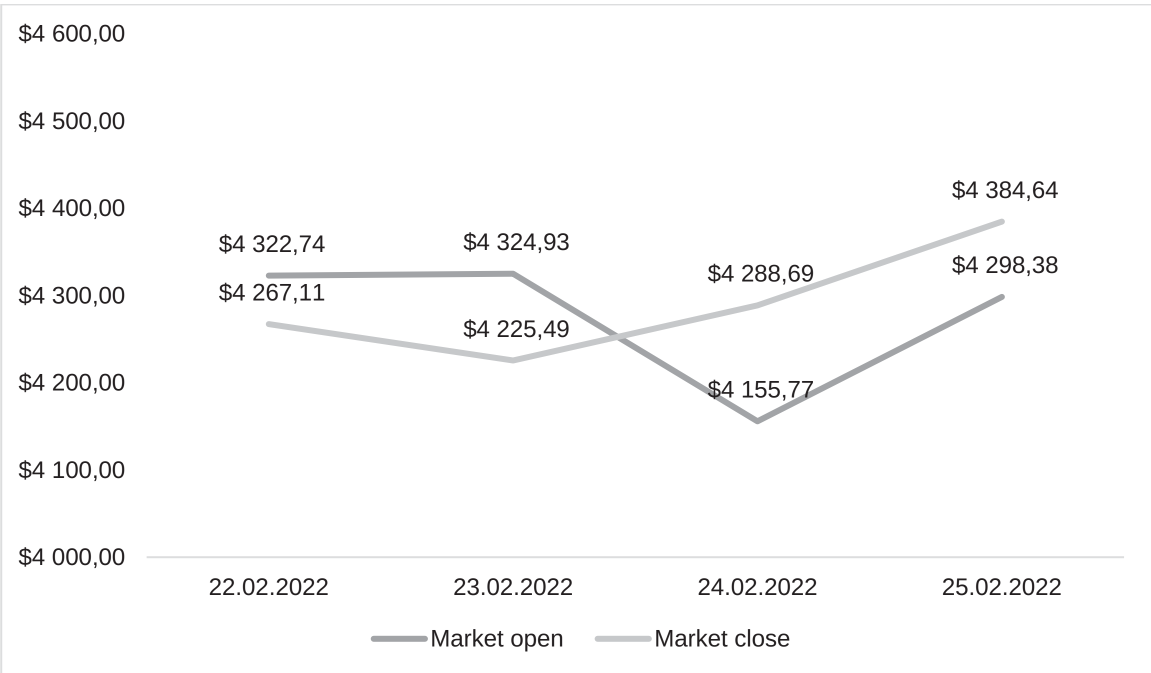
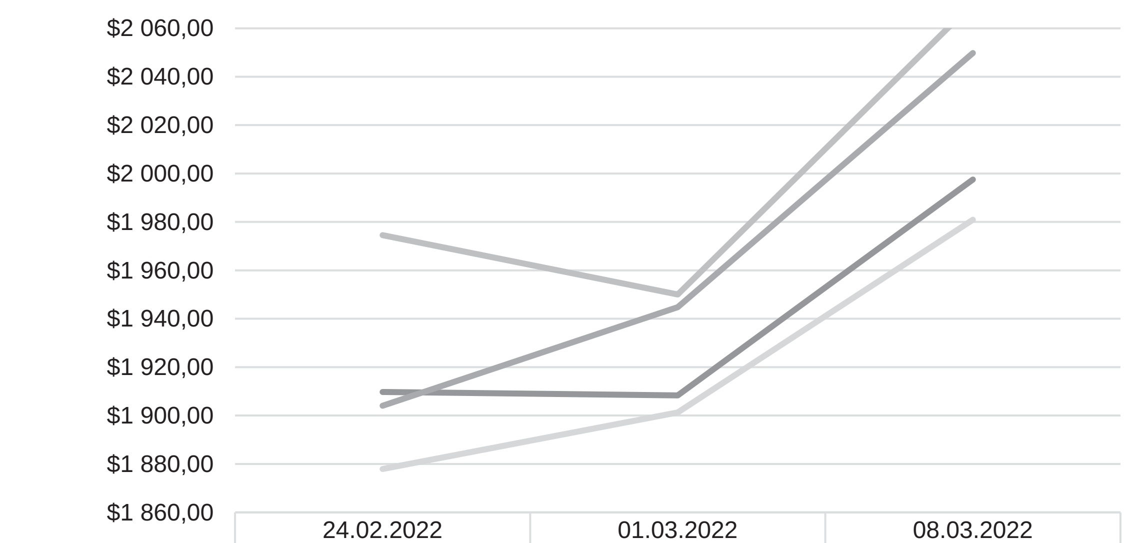


Figure 2. S&P500 price range from 22.02.2022 to 25.02.2022

Source: Data – S&P500(SPX) chart [8], created by the author



	24.02.2022	01.03.2022	08.03.2022
Open price	$1 909,76	$1 908,34	$1 997,52
Close price	$1 904,06	$1 944,82	$2 049,79
DH	$1 974,53	$1 950,04	$2 070,28
DL	$1 877,93	$1 901,31	$1 980,91

Figure 3. Gold prices range from 24.02.2022 to 08.02.2022

Source: data – Gold chart (XAUUSD) [13], created by the author

G. Abuselidze, who underscores the importance of regulatory flexibility in such situations [3].

Efforts to attract both domestic and foreign investors have been ongoing. The government introduced tax incentives and improved the business climate to boost market liquidity and rebuild investor confidence. Despite the challenging environment, these initiatives are beginning to yield positive results, as foreign investors are cautiously returning, attracted by lower valuations and potentially high-risk, high-reward opportunities [9]. However, substantial challenges remain, especially regarding infrastructure damage and economic uncertainty caused by the ongoing war.

Conclusions. The development of the Ukrainian stock market, in the context of national economic stabilization and war conditions, requires a multidimensional approach. To attract foreign investors, activating the local market and solving existing issues, such as the shortage of securities with solid investment characteristics, is essential. Increasing the number of domestic investors will strengthen the internal market, creating a foundation for future growth. Moreover, developing a mechanism for circulating foreign securities in Ukraine will create new opportunities for international investment.

In addition, a more transparent and adequate pricing mechanism for securities is necessary to mitigate foreign investors' risks when entering the Ukrainian market. As seen in global markets, geopolitical events can cause initial volatility, as demonstrated by the S&P 500's reaction to the full-scale invasion of Ukraine. While the market experienced a noticeable initial drop, investor sentiment quickly shifted, resulting in a positive recovery. This highlights that well-timed, proactive measures can convert initial uncertainty into opportunities for growth, a principle that the Ukrainian market can leverage.

Regarding safe assets, assets like gold – often seen as a global safe haven during times of uncertainty – can play a role in hedging against geopolitical risks. By integrating international standards and providing diverse investment instruments, including safer assets, the Ukrainian stock market can attract domestic and international institutional investors, further increasing portfolio investments.

Furthermore, modernizing Ukraine's stock market infrastructure to align with international standards will enhance market transparency and liquidity [5]. Increased internal demand for new financial instruments, such as foreign securities, can stimulate market liquidity and stabilize the investment landscape.

Thus, the path forward involves creating a robust integration mechanism to link the Ukrainian market with global financial markets.

This includes adapting international standards, strengthening the cooperation between market regulators, and ensuring informational transparency. By doing so, Ukraine can effectively attract foreign investors and promote the active participation of domestic enterprises on the global stage, securing its place in a rapidly evolving global financial environment.

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