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-RESEARCH ARTICLE-

THE IMPACT OF POST-COVID-19 POLICY RESPONSES, FINANCIAL POLICY, AND MACROECONOMIC FUNDAMENTALS ON MARKET RISKS ACROSS SECTORS IN VIETNAM

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─Abstract─

The purpose of this study is to assess the impact of COVID-19, policy responses, financial policy, and macroeconomic fundamentals on market risks across various sectors in Vietnam. In order to fulfil the objective, a comprehensive dataset encompassing daily data from 10 sectors in Vietnam has been gathered spanning the time frame of 2017 to 2023. The market risks during the analysed period are assessed through the utilisation of conventional Value at Risk (VAR) and Conditional Value at Risk (CVAR) methodologies. The study reveals that market risk has been observed across all sectors. However, the COVID-19 period has witnessed a higher level of risk, particularly in the food and building sectors. These sectors are projected to face the highest level of risk from 2020 to 2023. The study employs panel Fixed Effects estimation to analyse the direct impact of COVID-19, policy responses, financial policy, and macroeconomic fundamentals on market risks. Based on the findings, it has been determined that there is a positive correlation between the number of COVID-19 cases and market risks. The study reveals that within the realm of macroeconomic fundamentals, gold prices exhibit an upward trend, while the exchange rate has a mitigating effect on market risk. However, the study reveals that market risks are not influenced by financial policy, as measured by the economic support index. The COVID-19 policy responses, specifically the Health and Containment Index and Government Response Index, have a negative impact on the market risks in Vietnam. The relevant policies are provided based on the findings.

Keywords: Market Risks; COVID-19; Macroeconomic fundamentals; Vietnam; Value at risk and conditional value at risk.

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1. INTRODUCTION

The emergence of the novel coronavirus known as COVID-19 has had a significant impact on the global economy. The COVID-19 pandemic had both direct health effects and notable repercussions on global financial and economic markets (Hanif et al., 2021). The global stock market crash in 2020 (February to April) has been attributed to the impact of COVID-19 (Vo et al., 2022) . The COVID-19 pandemic is widely regarded as the catalyst for the global stock market crash of 2020 (from February to April). The pandemic has been linked to various financial challenges, such as heightened stock volatilities (Baig et al., 2021), decreased stock returns (Al-Awadhi et al., 2020), increased levels of debt (Zhang et al., 2020), liquidity shortages (Baig et al., 2021; Kamaludin et al., 2021), and a surge in bankruptcy cases (Akhtaruzzaman et al., 2021). In July 2021, the pandemic resulted in a total of 196 million reported cases and an estimated 4.2 million deaths. This has led to heightened uncertainties, risks, volatility, and fear within financial markets across both emerging and developed economies.

The global economic impact of COVID-19 has resulted in an unparalleled series of government measures, such as the full or partial shutdown of economic operations and limitations on both international and domestic travel. Governments have implemented various policy initiatives aimed at mitigating market volatilities and providing support to households (Saif-Alyousfi, 2022). The significant increase in confirmed cases of the pandemic prompted the government to enforce stringent containment measures. These measures included the suspension of economic operations, restrictions on people's activities, city-wide lockdowns, and the implementation of social distancing protocols. As a result, there was a noticeable deceleration in economic development. The closure of numerous firms has been attributed to significant declines in consumer spending, disruptions in the supply chain, and shortages in labour. As a result, the current COVID-19 crisis has led to a significant economic recession, causing a notable increase in market volatility and uncertainty (Elgammal et al., 2021).

The COVID-19 pandemic has had significant effects on the economy of Vietnam, presenting numerous unprecedented challenges. Based on data provided by the Ministry of Health in Vietnam, the total number of confirmed COVID-19 cases in 2020 amounted to approximately 10.45 million. Additionally, the recorded number of fatalities exceeded 42,000 (see Figure 1). The COVID-19 pandemic has had a significant impact on the nation across various dimensions. The closures of businesses, implemented as a measure to curb the spread of COVID-19, have resulted in various substantial adverse economic consequences. The global economy experienced a significant decline in demand and reduced production due to the abrupt closure of businesses worldwide. The COVID-19 pandemic has had a significant impact on the global financial market, leading to a widespread economic downturn. Experts anticipate that this downturn may even result in a more severe financial crisis (IMF 2021).

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Vietnam is among the select countries that achieved economic growth in 2020 following the pandemic. Vietnam's prompt and cautious policy implementations to mitigate the impact of the pandemic resulted in a 2.91% increase in its growth rate. This growth rate surpasses the average growth rate of ASEAN countries, but remains significantly lower than the growth rate observed in the previous year. Furthermore, the pandemic has resulted in an increased unemployment rate. Unemployment experienced an upward trend in 2020, reaching a peak of approximately 3.72 percent in 2021. This represents the highest recorded value in the past three decades (Nguyen et al., 2023).

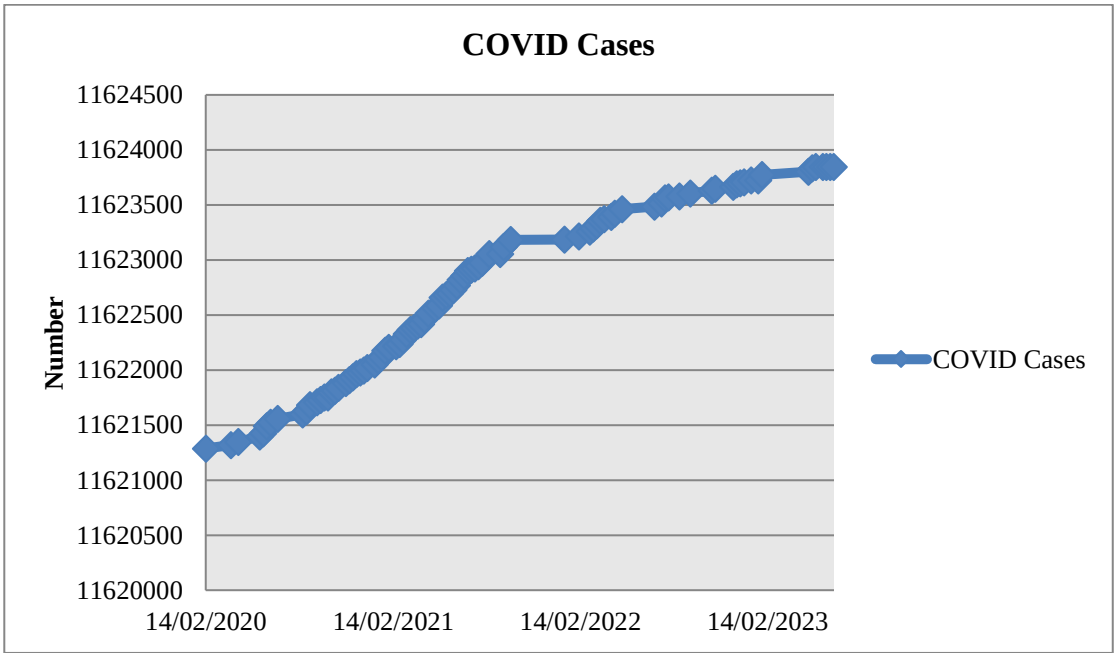

Figure 1: COVID Pandemic spread in Vietnam

Management policies aimed at controlling mortality and economic risk have significant implications for overall economic progress. The policies that effectively addressed the pandemic in 2020 proved ineffective in 2021 due to the emergence of the new "Delta" variant. The COVID-19 pandemic has significantly affected the economy of Vietnam in a detrimental manner. The COVID-19 pandemic has had a significant impact on the construction and service sectors. The construction sector experienced an 86.1% decline, while the services sector saw an 85.9% decline compared to the previous year. The fishery and forestry sector has experienced a significant decline of 78.7% in the economy. The COVID-19 pandemic has significantly affected multiple sectors and businesses.

Accommodation services experienced a decline of 97.1%, aviation saw a complete halt with a decline of 100%, and food services experienced a decline of 95.5%. The travel and aviation services sector made a significant contribution of approximately 9.2% to Vietnam's GDP in 2019. However, the pandemic has had a significant impact on it. The

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same applies to the tourism industry. The significant decline in the tourism and transport industries can be attributed primarily to social distancing measures and travel restrictions, particularly in relation to air travel. Vietnam experienced a significant decrease in foreign visitors by 55.8% and a decline in Vietnamese tourists by 27.3% during the first half of 2020, as compared to the corresponding period in the previous year. The COVID-19 pandemic has negatively impacted the economic contributions of these industries in Vietnam (Ho et al., 2021).

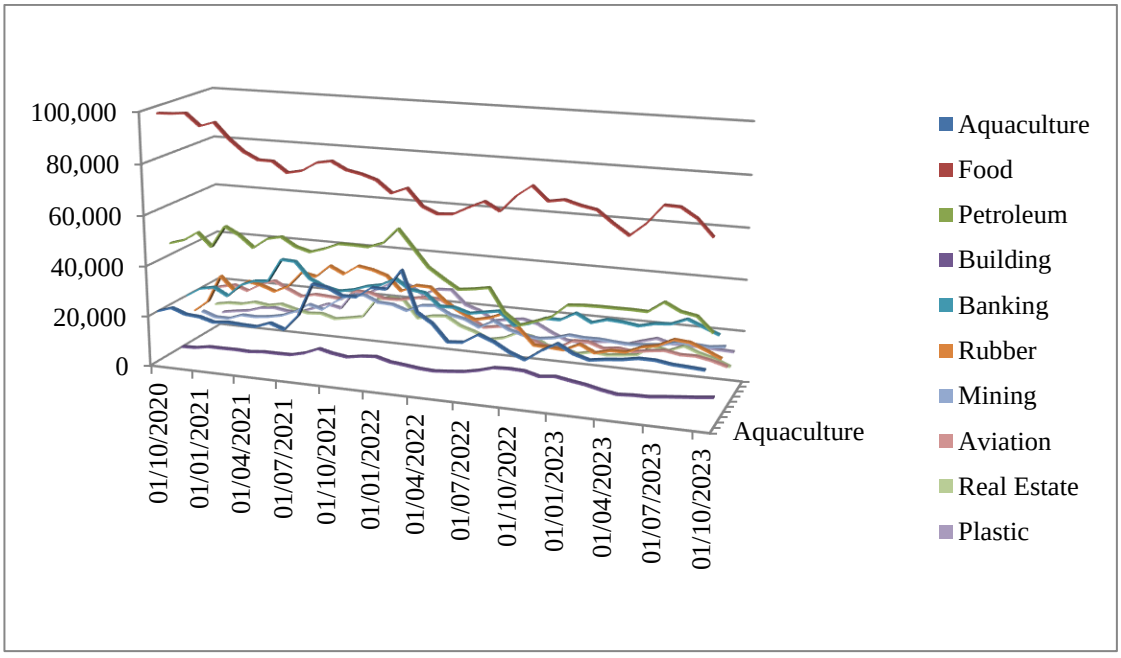

Figure 2: Monthly Market performance in Vietnam Sectors after COVID-19 Outbreak.

This study aims to assess the impact of the COVID-19 pandemic on market risks in ten specific sectors in Vietnam, including Petroleum, Mining, Rubber, Building, Banking, Plastic, Real estate, Aquaculture, Food, and Fertiliser. The analysis will cover the period from 2019 to 2023. Previous research has found that various macroeconomic factors, including exchange rates, oil prices, gold prices, and interest rates, have significant impacts on market returns (Abbass et al., 2022). However, limited studies have focused on examining the influence of macroeconomic fundamentals on market risks. The study aims to estimate macroeconomic fundamentals in order to address this gap in the literature. The study examines the impact of government policy responses, specifically health and containment measures, as well as economic support measures, on market risks in Vietnam.

To the best of our knowledge, this relationship has not been previously investigated in the context of Vietnam. These indices comprise various sub-indices pertaining to policies for the prevention and control of viruses. Hence, the impact of these indices is

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anticipated to have a greater influence on economic growth and market performance compared to the implementation of any individual government policy, such as restrictions on international or domestic travel. This study makes unique contributions to the existing literature in several ways. Previous research has focused on examining the impact of macroeconomic fundamentals on stock prices and volatilities. However, there is a limited number of studies that have specifically investigated the influence of macroeconomic fundamentals and COVID-19 on market risks.

The industrial sector in Vietnam has received limited attention in exploring the relationship with the COVID-19 pandemic, especially considering the significant impact it has experienced. The present study contributes to the limited body of research that has attempted to estimate this relationship. Additionally, this study employs the Value at Risk (VAR) and Conditional Value at Risk (CVAR) methodologies for the assessment of market risks. The most frequently employed methods for assessing market risk in various markets are as follows: the commodity market (Powell et al., 2018), stock markets (Kourouma et al., 2010), foreign exchange, and cryptocurrency market etc (Uyar & Kahraman, 2019) because the study holds significance for investors, policymakers, and portfolio managers in relation to their investments during the COVID-19 pandemic and macroeconomic fundamentals.

The subsequent sections of the study are structured as follows: Section 2 provides a concise review of the relevant literature. Section 3 presents data and outlines the empirical methodology employed in this study. Section 4 presents and analyses the findings. Section 5 provides a summary of the findings and offers suggestions for future actions.

2. LITERATURE REVIEW

Several studies have examined the empirical relationship between COVID-19, policy responses, macroeconomic factors, and stock market performance. However, there is a lack of empirical research on the impact of these factors on market risks. Vo et al. (2022) examined the influence of COVID-19 on market volatility in Asia and Pacific nations over a 25-month period. They employed VAR and Toda Yamamoto estimations and discovered that the implementation of COVID control measures at the country level was linked to a reduction in market volatility. Suwannapak and Chancharat (2022) examined the impact of the COVID-19 pandemic on stock market volatility in Thailand. The study utilised the GARCH-BEKK model to demonstrate the negative impact of the COVID-19 pandemic on stock returns.

However, Abakah et al. (2023) conducted a study on the impact of fiscal and monetary responses on US financial markets during the COVID pandemic, using daily data. The study revealed that the influence of monetary and fiscal policies on market performance is limited. Mensi et al. (2022) and Vo et al. (2022) examined the impact of global risk

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factors and COVID-19 cases on spillovers within green bond markets. Their findings revealed the presence of tail dependence and asymmetries between the building and financial bond markets. Ho et al. (2021) conducted a study on market risks in Vietnam, examining the period before and after the COVID-19 pandemic. They utilised VAR and COVAR methodologies to analyse data from various industries. The study revealed significant changes in market risks between the two time periods. The pandemic disproportionately impacted the services sector, while conversely, the education sector experienced some positive effects.

Likewise, Abbass et al. (2022) employed the QARDL approach to assess the impact of macroeconomic fundamentals, such as geopolitical oil price risk, economic policy uncertainty, global exchange rate, global interest rate, and global gold prices, on Islamic and conventional stock markets from 2000 to 2020. Research indicates that both conventional and Islamic stocks exhibit a positive response to oil price risks. Among macroeconomic fundamentals, gold prices impacted both conventional and Islamic stocks positively. Exchange rate and interest rate had negative impact on conventional stocks, but had positive on Islamic stocks in findings. In case of Indonesia, Purnami et al. (2020) studied the effect of macroeconomic fundamentals on 20 manufacturing companies' risk over 2014 to 2018 period. The results indicated that there was both direct and indirect effect on systematic risks.

In their study, Bui et al. (2022) analysed data from companies across 24 sectors to examine the impact of COVID-19 policy responses and macroeconomic fundamentals on market risks. They utilised daily data observations spanning from 2012 to 2022. Mohsin et al. (2020) conducted a study in Pakistan to examine the impact of macroeconomic fundamentals and market risks on the volatility of bank stock returns. The study covered a period from January 1, 2009, to December 31, 2019, and included 13 banks. The ARCH and GARCH models demonstrated that market risks have a significant positive impact on bank stock returns, while macroeconomic fundamentals such as the exchange rate and interest rate have a relatively low level of significance. Abbas et al. (2019) examined the relationship between stock market prices, volatilities, and macroeconomic fundamentals in China using monthly data from 1995 to 2015. The total spill over index provided evidence supporting the association between stock prices, volatilities, and macroeconomic fundamentals. Ibrahim and Musah (2014) examined the impact of macroeconomic fundamentals on stock market returns in Ghana from 2000 to 2010. The study discovered a significant long-term relationship between stock market returns and macroeconomic fundamentals.

2.1 Research Gap

This study aims to address the existing gaps in the literature. While many studies have examined the influence of COVID-19 and market fundamentals on stock prices or

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performance, there is a limited amount of research on the impact of these factors on market risks. Furthermore, there has been a lack of research on the impact of various COVID-19 policy responses on market risks. Vietnam has been largely overlooked in empirical studies examining the relationship between macroeconomic fundamentals, COVID-19 responses, and market risks. This study aims to address the gaps in existing literature by examining the impact of policy responses and macroeconomic factors on market risks in various industries in Vietnam in the aftermath of the COVID-19 pandemic.

3. DATA AND EMPIRICAL ESTIMATION

The primary objective of this study is to assess the impact of COVID-19, macroeconomic factors, and policy measures on the stock indices of various industries in Vietnam. The study utilised data from 10 industrial sectors in Vietnam for empirical estimation. The industries encompassed are the building sector, real estate, plastic, petroleum sector, mining sector, banking sector, aquaculture sector, food sector, and fertiliser sector. Market prices of these sectors are collected daily from investing.com. The study collects daily data on confirmed cases of the COVID-19 pandemic in order to assess its magnitude. Policy responses are evaluated using two indices: the Government Response Index and the Containment and Health Index. Financial policy is assessed using the economic policy index. The exchange rate and gold prices are significant macroeconomic fundamentals. We collect COVID case data and the Containment and Health Index from Our World in Data. The data on Vietnam's exchange rate and gold prices was sourced from investing.com. The data on the government response index and economic policy index is obtained from the Oxford COVID-19 Government Response Tracker. The supporting evidence from the body of existing literature serves as the basis for the selection of variables (Abbass et al., 2022; Bui et al., 2022; Chang et al., 2021).

Applied Techniques for the Estimation

VAR and CVAR are widely used estimators of market risk in extreme scenarios. CVAR is considered superior to VAR because it has the ability to capture scenarios that involve values that are higher than or exceed VAR (Artzner et al., 1999; Sarykalin et al., 2008). The exclusion of returns below the projected Value at Risk (VAR) at a specific confidence level by the estimator may result in an underestimation of the risk level. CVAR can overcome the limitation by considering projected losses that exceed the estimated VAR at the same confidence level (Rockafellar & Uryasev, 2000). VAR offers a broad spectrum of potential losses that are challenging to evaluate, whereas CVAR solely presents an average expected loss. CVAR, a market risk indicator, is commonly used in the real economy to detect early indications of crisis (Lin et al., 2018). VAR and CVAR are employed to assess the impact of market risk on firm performance (Vo, 2023).

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The Panel Fixed Effect model is employed to assess the influence of COVID-19, associated policies, and macroeconomic fundamentals on market risks. The Fixed Effects Model has the following properties: The assumption is that there are varying intercepts for each individual observation, while the slope and variance remain constant across groups, institutions, and individuals. The differences arise from the distinct characteristics of each unit and their respective management philosophies or styles. The fixed effects model offers the advantage of controlling for unobserved factors while analysing the impact of explanatory variables on the dependent variable (Basheer et al., 2020).

The equation of Fixed Effects model is represented as:

$$Y_{it} = \beta_1 + \beta_1 X_{1it} + \beta_2 X_{2it} + \beta_3 X_{3it} + \beta_4 X_{4it} + \beta_5 X_{5it} + \mu_{it} \quad (1)$$

Where, i in above equation show individual cross section, t is the time period and X is the explanatory variables.

Taken into consideration the Fixed Effects Model, we specify the study model as:

$$MR_{it} = \beta_1 + \beta_2 COVID_{it} + \beta_3 CHI_{it} + \beta_4 GP_{it} + \beta_5 ERATE_{it} + \beta_6 ESI_{it} + \beta_8 GRI_{it} + \mu_t \quad (2)$$

In the given equation, MR represents market risk, COVID represents the daily confirmed cases of the pandemic, CHI represents the containment and health index, ESI represents the economic support index, GRI represents the government response index, GR represents geopolitical risk, ERATE represents the exchange rate, and GP represents gold prices.

4. EMPIRICAL FINDINGS AND DISCUSSIONS

Table 1 presents the results of descriptive or summary statistics. The dataset consists of 209 daily observations for each of the 10 sector indices, spanning the period from 2017 to 2023. The mining sector exhibits the highest mean value, while the building sector displays the lowest mean value among all sectors. The petroleum sector exhibits the highest standard deviation value, while the building sector demonstrates the lowest standard deviation. COVID-19 has the highest impact among macroeconomic fundamentals, while gold prices exhibit the lowest average value. COVID-19 exhibits the highest standard deviation, while gold prices demonstrate the lowest value of standard deviation. Additionally, the Jarque-Bera Test indicates that none of the data series exhibits a normal distribution.

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Table 1: Descriptive Statistics Findings

Industry/Variable	Mean	Standard Deviation	Minimum Value	Maximum Value	Jarque-Bera Test
Petroleum	52700.71	12296.80	24650	93100	37.475***
Mining	1554387	7024.39	1625.0	34000	36.602***
Rubber	18487.12	9014.03	6796.0	41004.0	169.70***
Fertilizer	26068.58	10253.49	108494.0	62762.0	182.03***
Aviation	20890.3	6837.26	8610.00	43997.0	201.78***
Banking	21020.0	7676.27	9134.30	41141.30	218.41***
Building	5287.50	2254.34	1900.0	17400.0	787.79***
Food	8585.61	7257.70	2300	31100.0	1086.6***
Plastic	52700	12296.8	24650	93100	37.475***
Real Estate	10790	3026.7	5540.0	24363.0	1316.0***
Exchange Rate	23300	456.091	22625	24871	524.67***
COVID	5033197	5409448	2.000	116238	214.73***
Gold Prices	1825.0	110.45	1477.9	2069.4	27.614***
ESI	17.632	20.988	0.000	50.000	144.89***
GRI	52.780	15.116	0.000	77.080	393.76***
CHI	57.801	16.355	0.000	84.520	374.58***

Table 2 presents the calculated yearly market risk across 10 sectors in Vietnam using VAR and CVAR, following the provision of summary statistics. In 2023, the food sector exhibited the highest market risk, as indicated by a VAR value of 7999. In contrast, we found that the real estate sector exhibited the lowest market risks, as evidenced by its VAR value of 13799. The pandemic outbreak has led to a significant rise in market risks in the aquaculture, plastic, and building sectors between 2020 and 2023. The food and petroleum sectors have experienced a decrease in market risk from 2020 to 2023.

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Table 2: Market Risks (Yearly) in 10 sectors of Vietnam

Sector	Rubber	Petroleum	Mining	Fertilizer	Aquaculture	Banking	Building	Food	Real Estate	Plastic
Years					VAR (95%)					
2023	22299	40799	19899	39949	24199	29224199	27549	79999	13799	14399
2022	35354	58609	26899	56995	53999	34851	36909.9	80263.9	17817.2	26999
2021	38909	56811	30999	43624	45599	37481	39202	102443.4	21453.5	27499
2020	22644	53579	15499	15502	27999	17142	29276.1	102061.8	12808.9	8099
2019	15758	64799	7509	22447	16899	12790	19517	110340	11881.6	5699
2018	10735	88499	10740	23499	15999	18519	15962.5	171654	10553	6599
2017	10987	70199	11386	24799	21099	10641	15867.2	161472	9564.6	6199
Years					CVAR (95%)					
2023	6	0.001618	7	11.20514	10.2934	11.22204	11.39021	11.0925	11.21741	10.25002
2022	12.30718	13.22756	9.182163	13.59386	12.71298	13.13916	14.2313	13.15236	14.74243	13.30742
2021	0.002339	13.17248	12.45163	13.25848	13.24123	13.31496	13.56353	13.31752	13.77761	13.80367
2020	15.23653	13.45716	8.219369	13.3775	11.40001	12.19128	13.36854	13.11525	11.13228	11.28399
2019	13.38006	13.1821	3.06672	13.16942	9.230783	13.13511	13.12326	13.32482	12.18827	9.210563
2018	0.005123	13.30622	2.11825	13.51492	8.131258	14.41028	13.40489	13.14188	12.42906	11.57584
2017	0.3478	9.28348	10.6609	13.21372	14.05223	13.50803	13.89064	13.28921	13.54336	13.613

Next, Table 3 presents the ranking of market risks across sectors for the period of 2017 to 2023, allowing for the identification of sectors with the highest and lowest risks. The ranking scale ranges from 1 to 10, with 1 representing the highest rank and 10 representing the lowest rank. The VAR and CVAR rankings indicate that the majority of sectors experienced market volatility from 2017 to 2023, while only a few sectors demonstrated risk stability. The risk levels in the food and petroleum sectors remained stable from 2017 to 2023. The plastics and real estate sectors exhibited the lowest risk ranking from 2017 to 2023.

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Table 3: Ranking of the Vietnamese Sectors on the Basis of Yearly Market Risks

Ranking on the basis of VAR (95%)										
Ranks	1	2	3	4	5	6	7	8	9	10
Sectors										
2023	Food	Petroleum	Fertilizer	Building	Aquaculture	Rubber	Banking	Mining	Plastic	Real estate
2022	Food	Petroleum	Fertilizer	Aquaculture	Building	Rubber	Banking	Plastic	Mining	Real estate
2021	Food	Petroleum	Aquaculture	Fertilizer	Building	Rubber	Banking	Mining	Real estate	Plastic
2020	Food	Petroleum	Building	Aquaculture	Rubber	Banking	Fertilizer	Mining	Real estate	Plastic
2019	Petroleum	Fertilizer	Banking	Food	Aquaculture	Building	Rubber	Real estate	Mining	Plastic
2018	Petroleum	Fertilizer	Food	Banking	Aquaculture	Building	Rubber	Mining	Real estate	Plastic
2017	Petroleum	Fertilizer	Aquaculture	Food	Building	Banking	Mining	Rubber	Real estate	Plastic
Ranking on the basis of VAR (95%)										
Ranks	1	2	3	4	5	6	7	8	9	10
Sectors										
2023	Building	Banking	Real estate	Fertilizer	Food	Aquaculture	Plastic	Mining	Rubber	Petroleum
2022	Real estate	Building	Fertilizer	Plastic	Petroleum	Food	Banking	Aquaculture	Rubber	Mining
2021	Real estate	Building	Food	Plastic	Fertilizer	Aquaculture	Banking	Petroleum	Mining	Rubber
2020	Rubber	Petroleum	Fertilizer	Building	Food	Banking	Aquaculture	Plastic	Real estate	Mining
2019	Rubber	Food	Banking	Building	Fertilizer	Petroleum	Real estate	Aquaculture	Plastic	Mining
2018	Banking	Fertilizer	Building	Petroleum	Food	Real estate	Aquaculture	Plastic	Mining	Rubber
2017	Aquaculture	Building	Plastic	Real estate	Banking	Food	Fertilizer	Rubber	Mining	Petroleum

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Table 4 presents the findings regarding the impact of COVID-19, policy responses, financial policies, and macroeconomic fundamentals on market risk. COVID-19 has been found to have a positive effect on market risks, suggesting that an increase in COVID cases leads to an increase in market risks. This finding aligns with the findings of Rout et al. (2021) and Bui et al. (2022). The study suggests that there is a negative relationship between exchange rate fluctuations and market risks in various sectors of Vietnam's economy. A one-unit increase in the exchange rate results in a market risk decline of 6.90 units in Vietnam. Previous studies by Lim and Sek (2014), Beckmann and Czudaj (2022), Rizwan and Khan (2007), and Bui et al. (2022) support our findings. Gold prices have been found to have no significant impact on market prices in Fixed Effects estimation, which aligns with the findings of Bui et al. (2022).

Table 4: Fixed Effects Estimation Findings

Variables	Coefficients	P-Value
COVID Cases	0.0557*	0.092
Exchange Rate	-6.940*	0.090
Gold Prices	2.674	0.906
Health and Containment Index	-1.551***	0.0175
Government Response Index	-0.355***	0.017
Economic Support Index	-7.616	0.299

The study's findings indicate that containment measures and health indices have a negative impact on market risk. A one-unit increase in the containment and health index is linked to a 1.551 unit decrease in market risks, which aligns with the findings of Chang et al. (2021) and Bui et al. (2022). The government response index has a notable adverse effect on market risks. An increase of one unit in the government response index leads to a decrease of 0.355 units in market risks. The research supports the notion that government actions taken in response to COVID-19 have had a positive impact on investor confidence, leading to increased investments and higher stock returns. As a result, industries experience reduced levels of risk and volatility. Previous studies by Huynh, Huynh et al. (2021), Ibrahim et al. (2020), and Saif-Alyousfi (2022) provide substantial support for our findings.

However, the study finds that the financial policy response, as measured by the economic support index, has a statistically insignificant and positive effect on market risk. This suggests that government policies aimed at debt relief or income support do not provide sufficient incentives or confidence to investors, leading to a lack of response from industries to these economic policies (Chang et al., 2021).

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5. CONCLUSION AND POLICY RECOMMENDATIONS

The COVID-19 pandemic has caused significant uncertainty. The consequences include loss of life, economic stagnation, and reduced financial market profits. Countries have implemented lockdowns and travel restrictions to slow the spread of the COVID-19 pandemic, which has had a significant impact on stock market performance. Vietnam experienced a significant increase in the number of businesses that temporarily suspended operations due to the heightened level of market risk during that period. Existing empirical analysis primarily examines the influence of COVID-19 on stock performance. However, limited research has been conducted on the effects of COVID-19 and associated policies on market risks, particularly within the context of Vietnam.

The objective of this study was to examine the impact of COVID-19, financial policy, and macroeconomic factors on market risks in Vietnam. To achieve this objective, a dataset comprising 10 industries from the years 2017 to 2023 was chosen. Market risks for these sectors were assessed using the VAR and CVAR methodologies. The study utilised PMG estimation to assess the influence of COVID-19 and macroeconomic fundamentals on market risk. The significant increase in the value of VAR and CVAR across all companies from 2017 to 2023 is evidence of the findings, which point to a notable rise in market risk. The food sector exhibits the highest market risk, while the real estate sector demonstrates the lowest market risk from 2017 to 2023. Additionally, the analysis of sector rankings based on risk indicates that there is a lack of stability in risk values across sectors during the studied period. The plastic and real estate sectors consistently exhibit the lowest level of risk.

The study reveals that COVID-19 has a positive impact on market risk, while exchange rate and Containment and health index have a negative impact on market risks when considering the effects of explanatory variables using VAR and CVAR approaches. Geopolitical risks have a positive impact on market risks in both the short and long term, as observed in the relationship between gold prices and market risks. However, the economic response index has no significant impact on market risks in both the short and long term. These findings will assist investors in understanding the short-term market behaviour during different crisis scenarios, thereby facilitating decision-making in similar circumstances.

Moreover, these findings can assist investors in making approximate projections of their potential investment losses and subsequently strategizing for future investments. The COVID-19 pandemic has impacted various industries and sectors in Vietnam, albeit to varying degrees. Therefore, it is imperative for all sectors to collaborate in order to ensure stability and mitigate risks through diversification. Further, the sectors that have experienced significant impacts should acquire knowledge from the sectors that have been less affected in order to preserve their risk stability. Financial and non-financial support should be provided to sectors to aid in their recovery from the impacts of the pandemic.

Further, it is imperative for governments to ensure the precise implementation of pandemic response policies. Implementing comprehensive contingency plans can mitigate uncertainty and minimise market risk across various sectors and markets. In addition, it is crucial for the government to effectively manage the exchange rate in order to enhance its stability and promote liquidity growth. Investors require a sufficient understanding of sector risk levels and access to portfolio diversification strategies in order to attain anticipated returns. Risk-averse investors should employ hedging strategies to protect their portfolios from significant market risk.

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