International Journal of Social Science and Economic Research

ISSN: 2455-8834

Volume:08, Issue:05 "May 2023"

IMPACT OF THE RUSSIA-UKRAINE CRISIS ON FOOD INFLATION AND STOCK MARKETS IN ASIAN ECONOMIES: WITH REFERENCE TO INDIA, CHINA, JAPAN AND THAILAND

Ambrita Mishra[1], Dr Amritkant Mishra[2] and Dr Ajit Kumar Dash[3]

[1]Student BA Economics, Department of Economics, Birla Global University, Bhubaneswar India

[1,2]Assistant Professor, Department of Economics, Birla Global University, Bhubaneswar India

DOI: 10.46609/IJSSER.2023.v08i05.008 URL: https://doi.org/10.46609/IJSSER.2023.v08i05.008

Received: 7 May 2023 / Accepted: 17 May 2023 / Published: 22 May 2023

ABSTRACT

The current geopolitical risk posed by the Russia-Ukraine war has significant implications on the stock markets and the commodities markets of several countries. Using monthly data from October 2020 to the present time period, we analyse the impact of Russia-Ukraine crisis on food inflation and stock market return volatility in the context of Asian countries, namely, India, China, Japan and Thailand with the help of regression analysis based on the OLS technique. Our main findings show us the impact of the Russia-Ukraine war on the food inflation to be visible in China and Japan whereas the war's effect on the stock markets of all the countries selected is shown to be insignificant. We observe the highest and lowest monthly food inflation in China, the highest monthly stock return volatility in Thailand and the lowest monthly stock return volatility in Japan among the selected countries. For the case of India, the war doesn't have much effect on its food inflation and stock market return volatility. We suggest reducing food import dependency by strengthening domestic production and going for alternative food suppliers so as to not be affected by the international food prices that are subjected to the turmoil of war. It is imperative to re-diversify portfolios based on the volatility trend of stock market returns in order to shield oneself from the perils of stock market volatility caused by wars.

Key words: Food inflation, stock market return, stock market volatility, Russia- Ukraine war, Asian countries, regression

Introduction

In the past, countries used to wage war against other countries for their resources in order to become rich and powerful. In present times, resources are still a source of contention despite the

ISSN: 2455-8834

Volume:08, Issue:05 "May 2023"

advancements in science and technology (Binns and Low, 2022). However, Russia's motive behind the invasion of Ukraine is not only economic but alsopolitical as well. This research paper investigates the impact of Russia-Ukraine crisis on food inflation and stock market return volatility in Asian countries, namely, India, China, Japan and Thailand. Moreover, this paper aims to make a comparative analysis of the impact of the war on these Asian economies. The importance or relevancy of thepaper is justified with the ongoing war creating havoc on the food systems and financialmarkets of many countries especially those in the proximity of the warring nations (Russia and Ukraine). It's imperative for policymakers and investors to know how the war impacts the functioning of their respective domains and how to shape their policies and strategies accordingly. Before moving forward with the analysis, some backgroundinformation is required to have a better understanding of the issue at hand. Food and stock markets are few of the major markets that contribute to the GDP of any economyand when such markets are shaken up by disease outbreaks and man-made disasters, the end result is not very favourable especially of those in close proximity to the event.The effect of the Covid 19 pandemic and the ongoing war between Russia and Ukrainemainly comprises of supply chain disruptions and volatility of prices which has exacerbated the existing hunger and poverty conditions around the world and has influenced the economic performance of many countries. Focussing on the political determinants of such markets, war in any country is bound to lead to a catastrophic chain of events that eventually dampens the growth of the country in question. The destruction of infrastructure of Ukraine's agriculture, industrial and energy sectors carried out by Russia has caused the eventual fall in the country's GDP by 29.1% in 2022 according to the State Statistics Service (FP staff, 2023, April 14). It is notable topoint out the impact of wars in the past like that of the Iran-Iraq war of 1978 also known as the First Persian Gulf war which significantly impacted the agriculture sector of Iran, highlighting its failure to feed the growing Iranian population owing to the rural-urbanmigration and the increasing costs of the war thereby preventing necessary expenditureto be made in the agriculture sector for its improvement. The agriculture sector of Iraq was also in a bad shape with decreased agricultural output and increased dependency on food imports. Overall, the food shortages in both countries led to the rising food prices and the subsequent increase in food imports. (Mofid, 1990) Food shortages in the last 20 years are evident with the global food crisis of 2006-08, 2010-11 and now in 2021-23 with food prices recorded to have a rising trend since 2003. For instance, the price of rice shot up by 169% from January 2003 to December 2010 in nominal USD terms (FAO, 2011). Moreover, the global food crisis of 2006-08 led to a 48% increase (in real terms) in the domestic prices of staple foods in developing countries (Dawe & Morales-Opazo, 2009). Evidently, the price volatility of the domestic goods is far greater than that of the traded agricultural goods. Furthermore, the transmission of international prices to domestic prices like that of Pakistan and Tajikistan during the global food crisis of 2010-11 is evident with the increase in poverty levels of those regions (Ivanic et al., 2012). The global food

ISSN: 2455-8834

Volume:08, Issue:05 "May 2023"

crisis in 2008 and the global financial crisis of 2008 fuelled each other which made the commodity markets more volatile thereby worsening the economic and health conditions of the vulnerable and poor withprices doubling and even tripling in the case of milk and butter between 2003 and 2008(Von Braun, 2008). Moreover, the global financial crisis led to the contagion and integration of stock markets which contributed to the 'cross-market correlations' like that of European stock markets that suffered from the crisis in late 2009 (Olbrys, 2021).

Moreover, other war induced crises that plagued the world includes that of the OPEC oil price shock of 1973 caused by the Yom Kippur war between Israel and Arab nations which led to oil shortages in the US and subsequent increase in oil prices which quadrupled to $12 per barrel. This was done in retaliation to the US assistance providedto Israel during the war which led to the consequent embargo on oil by the OPEC countries that mostly consisted of Arab nations. This had led to stagflation in the US and other developed nations (Kettell, S. ,2023, April 4). Furthermore, there is also the Iraq war in 2003 that took place between Iraq and the US which adversely affected the stock markets especially that of Israel, Turkey and Europe and it also increased the non-diversifiable risk which impacted the cost and valuations of equities (Leigh et al., 2003,Mishra 2019a, Mishra 2020a). To add on to this, Iraq's invasion of Kuwait in 1990 and the 9/11 attacks also highlighted the interconnectedness and 'spill over effects' of 'global capital markets' and the resilience of the US markets owing to its stable banking sector that provided enough liquidity during that time (Chen & Siems, 2004). Economicpolicy uncertainty do not have any impact on food inflation in India (Mishra 2022). Thus, it's clear that the increased geopolitical risks caused by warring countries has an overall negative effect on the financial markets world-wide. Now the current geopolitical risk posed by the Russia-Ukraine war has significant implications on the stock markets and the commodities markets of several countries which also includes the warring nations themselves and has exacerbated the current global food price crisiswhich started in 2021 owing to the Covid 19 pandemic. Economic recovery of many nations has been reversed due to this war with several stock markets acting as risk transmitters and risk receivers which highlights the spill over effects induced by the conflict. Investors experienced immediate losses owing to the reduction in points of stock indices, for instance, the BSE Sensex plummeted by 4000 points within the first 20 days since the war commenced (Times of India, 2023, February 24) . The major effects of the Russia-Ukraine war on food and stock markets is highlighted in the subsequent existing literature which can be summarized as follows

- Volatility/shocks in food, fuel and fertilizer prices and tightening of markets led toan overall increase in cost of living;
- Impact of FAO's four pillars of food security (availability, accessibility,

ISSN: 2455-8834

Volume:08, Issue:05 "May 2023"

utilization and stability) which leads to supply chain disruptions and food insecurity;

- Poverty, food wastage, adverse impact on health and hindrance to SDGs;
- Adverse impact on vulnerable countries dependent on imports of Russia and Ukraine which exacerbated with the existing connectedness between their stock markets;
- Abnormal returns on stocks, spill over effect (risk transmission) to other markets whoare the risk receivers and risk transmitters themselves; and
- Influence on the portfolio diversification and hedging strategies of investors andpolicies of policy makers.

Overall, the effects of the ongoing war on many countries varies depending on its proximity to the battlefield and the current social, economic and political situation of the country in question.

Literature Review

Shah et al. (2022) investigates the response of South Asian countries to the Russia- Ukraine war with focus on its adverse effects on Pakistan's economy. This includes surging inflation and account deficit due to the currency devaluation owing to the ongoing war. Their focus is also on the effects of sanction placed on Russia by the West and how it leads to a surge in global oil prices. The war's effects on Pakistan's wheat imports are also highlighted in this research article. The authors suggest Pakistan to maintain diplomacy and neutrality to avoid additional pressure from either of the warring nations. Sohag et al. (2022) focus on the effects of Russia's geopolitical risks and global energy prices on the food prices in Eastern and Western Europe. The authorsuse monthly data from January 2001 to March 2022 and apply the econometric methodof Cross-quantilogram. Their findings include an increase in food prices in Western Europe and a decrease in food prices in Eastern Europe in the short run. The increase in food inflation under long memory is also highlighted in this research paper. The authors suggest reducing dependency on food imports by giving emphasis on the utilization of unused agricultural lands. Concrete and joint policy measures of European policymakers is also required to stabilize the food market. Moreover, global initiativesof EU and its partners is essential to help the smallholder farmers as their contributions to the rural communities is significant. Mishra et al (2021) investigates the nexus between the monetary factor and food inflation in India. The result reveals that money supply does not have any impact on food inflation in India. Abay et al. (2022) investigate the global and regional food insecurity and the consequent hike in food prices caused by the Russia-Ukraine war and the response of MENA (Middle East and North Africa) countries of Egypt,

ISSN: 2455-8834

Volume:08, Issue:05 "May 2023"

Sudan and Yemen. The authors recommend diversifying the wheat supply and protecting the poor households (especially of urban poor) from the price shocks in the short run. In the long run, they recommend the countries to support local production of crops in addition to practicing trade openness, thereby balancing the benefits and costs in order to reduce dependency on food imports and to provide the best nutrition for domestic consumption. Hassen and Bilali (2022) look into the direct and indirect consequences of the Russia-Ukraine crisis on global food security and how it has affected the countries heavily dependent on food imports like that of the MENA region. The consequences pointed out in this paper includes disruptions in Ukrainian exports, labour shortages caused by human displacement, restricted supply of fertilizers and difficulties in making food systems more sustainable thereby hindering proper implementation of the SDGs 1, 2 and 12 i.e., No Poverty, Zero Hunger and Responsible production and consumption. The authors suggest to not have export restrictions to prevent further rise in commodity prices, to target short term actions like food subsidies, to invest in climate friendly agriculture research which in crucial in achieving SDG2 and to provide debt relief to food insecure nations. Using the PRISMA approach (including grey literature), Jagtap et al. (2022) investigate the impact of the Russia- Ukraine conflict on the productivity of the key areas of global food supply chains, namely, food production, processing and storage; food transport logistics; food markets; consumers; food dependent services; and food quality. Their findings highlight a significant impact on the 'availability and affordability' of food in several economies, especially that of Europe and Africa owing to their dependence on food imports from Ukraine. The authors suggest ensuring food quality and safety through technological innovations and finding alternate food supply partners that haven't suffered any significant blow to their economies due to the war.

Hellegers (2022) looks into how 'trade dependencies' on Russia and Ukraine have made countries vulnerable in terms of their food security especially those depending on wheat and sunflower oil imports from Russia and Ukraine. Using FAOSTAT data, the author identifies certain 'coping capacity indicators' of countries and their ability to cope with vulnerabilities and to absorb the shocks in the international agricultural commodity markets caused by the Russia-Ukraine war. The findings highlight that the food security of those countries who have a limited coping capacity will be affected by the war especially those of the MENA region and Sub- Saharan Africa. The author suggests a combination of a 'global food security approach' and a 'holistic approach' to food security, energy and water by considering how sanctions against Russia and the export restrictions affect the vulnerable countries and the global markets. Using 'descriptive analysis', Nasir et al. (2022) look into the impact of Russia- Ukraine war on the global food crops namely, wheat, maize and soybean and how volatile their prices can be owing to the current situation on the basis of 'annual time series data' from 2020 to 2022. The food supply chains of LDCs and LIFDCs are affected due to their dependence on Russian and Ukrainian food imports. Moreover, achieving SDGs will prove to be difficult especially that of Zero Hunger due to this crisis. The

ISSN: 2455-8834

Volume:08, Issue:05 "May 2023"

authors pointout lack of data as the limitation of their research and their suggestion to this crisis is to involve United Nations Peacekeeping Forces for opening the ports of Ukraine in order to maintain 'logistic transportation safety' and ensure that wheat, maize and soybean are continued to be supplied to the food insecure countries. Using 'trend analysis', 'Pearson correlation method' and 'two stage least square regression', Ozili (2022) investigates the economic consequence of the Russia-Ukraine war on the global economy on the basis of data from December 2021 to March 2022. In addition to the falling stock prices, the author highlights 'global inflation' as one of the major economic consequences of the war owing to the 'global supply chain disruptions'. Thefindings shows that the Covid 19 pandemic and the ongoing war has led to the overall increase in the prices of energy and food not only in the warring nations but also in the non-warring nations as well. This spillover effect in other countries comes after the sanctions on Russia and the ban of Russian imports by these non-warring countries thereby leading to supply shocks in the international markets which heavily affected those dependent on the imports of the warring nations. The author suggests political leaders to pacify the warring countries through diplomatic 'conflict resolutions, 'trade negotiations and renegotiations' in order to end this crisis even though its 'economic spillover effects' will continue even after the war ends. Sviatko (2023) investigates theeconomic performance of the ASEAN countries in view of the global energy crisis andthe Russia- Ukraine conflict and how the recurring global inflation especially food inflation has affected their economies when they seem to be recovering from the recentCovid 19 pandemic initially. The rising food prices and reduced exports poses a major risk for the vulnerable populations of the ASEAN countries as they might slip into poverty, thereby dampening the overall economic performance of the bloc. Thus, this paper focuses on the reason why inflation is the main economic concern for the bloc in 2023. Mishra (2019) explores the stock market return volatility in Indian and Japanese stock market. The result reveals that return on foreign exchange is a net transmitter of volatility while the return of stock exchange is a net receiver of volatility in the Indian stock market. In the context of the Russia- Ukraine conflict, Aliu et al. (2023) investigate the causal relationship among corn, wheat, barley and sunflower oil by usingthe Granger Causality Test and estimate their future performance for the next 10 months by using the statistical approach of VAR and VECM. The data ranges from time period from 1 January 1990 to 1 August 2022 and their findings include a greater influence ofcorn prices on the prices of the other three agricultural products while wheat is the second most influential of the bunch. The authors speculate an average 10% decrease in their prices with sunflower oil having the highest percent of decline in its price according to VECM estimates compared to the VAR estimates that shows the highest decline in corn prices. These estimates serve as valid signals for relevant international authorities and food insecure countries especially that of Africa when it comes to creating appropriate policies. Saridakis et al. (2022) look into the economic implications of the sanctions against Russia owing to them invading Ukraine. Using 'hegemonic

ISSN: 2455-8834

Volume:08, Issue:05 "May 2023"

order theory', they analyse the rationale of the war and the subsequent impact on trade relations and prices of food, energy and metals. They discuss on who benefits and suffers from these sanctions. They highlight that large economies like the US benefit in the medium and long term while the European and developing economiessuffer from the constrained supply and inflation as a result of these sanctions as they are dependent on the imports of these warring countries. The war leads to lower profitability and more bankruptcies. The Central banks continue to increase the interestrates to combat the increasing inflation and the authors suggest that banks must choose between recession or stagflation if inflation and corporate debt continues to increase. Mishra (2019) shows that there is return volatility spill over from gold to stock market in India. Based on the import data of Nepal from July 2020 to July 2021, Bhatta (2022) points out the increasing prices in Nepal as an effect of the Russia- Ukraine conflict which leads to a compromise in food security and nutrition and moreover, poses an increased risk of poverty in Nepal. The author highlights the agricultural background of Nepal as self-sufficient in producing basic food like cereals but the author also underlines the increasing trend of imports to Nepal in terms of petroleum, chemical fertilizers and staple foods like rice. The author suggests to focus more on domestic production with the help of PMAMP (the Prime Minister's Agriculture Modernization Project) rather than focusing only on restricting imports. This will most likely help in the medium term rather than the short term. The author also suggests reviewing the budgetary allocation for fertilizer imports and go for diversifying its import sources as well as supporting the organic fertilizer industry in the country. Through a preliminary qualitative factual analysis based on secondary sources, Bin- Nashwan et al. (2022) highlight the hinderance to the progress of the 2030 Agenda of the SDGs caused by the Russia-Ukraine war. The impact of the war is 'multidimensional' but the authors state that it is early to measure the full impact of the war. They recommend focusing on SDG16 i.e., Peace and Justice and highlight the need for economic empowerment of the refugees by giving incentives to employers to hire them. They strongly suggest forthe sustainable transformation of the energy and food systems as fuel and food prices continue to be erratic as the war progresses. Using the reports of World Trade Organization, OECD, World Bank, UN, UNCTAD and IMF, Orhan (2022) highlights financial sanctions, supply chain disruptions and commodity inflation especially that of fuel and food as the three major avenues through which the Russia-Ukraine conflict will impact the global economy and trade. The author suggests diversifying the sourcesto reduce dependency on Russian imports and to absorb the shocks in prices of food and fuel.

Through IFPRI's rural investment and policy analysis (RIAPA) on basis of economy- wide models, Arndt et al. (2023) replicate the effects of soaring food, fuel and fertilizer prices on the economies of 19 developing nations caused by the Russia-Ukraine crisis. They find fertilizer and fuel prices to have a more adverse effect on GDP compared tothe food prices. They look into the rising food prices which leads to a fall in householdconsumption thereby worsening the poverty

ISSN: 2455-8834

Volume:08, Issue:05 "May 2023"

conditions especially in the rural areas of these developing countries. Their analysis neither considers government interventions nor long term investment of households and firms. Overall, they find higher influence of fuel and fertilizer prices on agrifood systems and poverty whereas soaring food pricesseem to have a greater impact on diet quality and hunger in these developing nations. von Cramon-Taubadel (2022) investigates the further tightening of grain markets in lieuof the food crisis created by the war between Russia and Ukraine and how the scarcityof grains in the international market brought by the export bans are majorly affecting the import dependent countries of Africa and the Middle East, thereby resulting in the surge of global prices of these grains in the market. The author urges EU to rethink its policies of agriculture and biofuels and to prepare for a food assistance response at a large scale in order to improve the already worsening situation of food security and hunger in these low-income countries. Through 'a specific search strategy' involving 'scholarly literature' and 'grey literature', Rabbi et al. (2023) investigate the effect of the Russia-Ukraine war on the food systems of European countries and its four food security pillars i.e., availability, accessibility, utilisation and stability, as identified by the FAO. This paper highlights the cascading effect of soaring input prices like that offuel and fertilizers and how it affects domestic production and food imports eventuallyleading to inflation and 'food poverty'. The authors suggest EU to avoid export bans; to focus on renewable sources of energy, food aid, diversification of diet, 'food recoveryand distribution'; to establish a steady supply of fertilizers along with imposing food and energy price caps and to lower interest rates in order to prevent political instabilityand social unrest. Skorokhod et al. (2023) bring attention to the immediate effects of the war between Russia and Ukraine which includes disruption in 'Ukrainian grain exports' thereby affecting global food security especially that of poor countries. The authors suggest financing food imports of poor countries, ensuring safe transportation of Ukrainian food trucks, promoting transparency of information in agricultural markets and preventing export restrictions in order to avoid further supply and trade disruptions. They also advice practicing 'crop rotation' and fumigation of soils in order to improve agricultural productivity and strengthening ties with states willing to aid the poor countries and their 'agricultural recovery'. Lakhal (2022) highlights the war between Russia and Ukraine as the main deterrent to the global food security in present times. The author points out the risk volatility and the subsequent shortages in the global supply chain evident in the MENA countries such as Algeria and Libya owing to the blockage in Ukrainian wheat exports. The author suggests reducing trade barriers and engaging in 'political efforts' to make sure Russia and Ukraine continue to be the mainsuppliers of agricultural goods so as to maintain the free flow of food in the international market and prevent the worsening of hunger in the import dependent countries. Khetsoongnoen (2022) investigates the positive and negative effects of the Russia-Ukraine conflict on the economy of Thailand and its trade, currency and tourism industry. The sensitivity of Thailand's exports and imports is evident owing to the supply chain disruption and

ISSN: 2455-8834

Volume:08, Issue:05 "May 2023"

the subsequent increase in food and energy prices. The positive effect is the increasing consumer awareness and the subsequent increase in the use of public transportation and support for local businesses owing to the rising prices of gas and imported food items. The author suggests entrepreneurs to build effective strategies as the change in consumer behaviour is evident. Using the EEMRIO approach, Guan et al. (2023) analyse the household expenditure data of 201 expenditure groups in 116 countries which highlighted the direct and indirect impact of rising energy prices on the total expenditure of the average household owing to the Russia- Ukraine war. This paper points out the cascading effect of rising energy prices and how it leads to an increase in price of necessities like food items, thereby leading to an overall increase in the cost of living and the consequent increase in poverty. The authors find households in Central Asian countries and sub-Saharan African countries to be the most vulnerable when it comes to total energy costs and total energy cost burden rates respectively. They suggest protecting the vulnerable households from high food and energy prices by increasing the subsidies and furthermore diversifying the energy sources to secure the supply and prevent any shortages. Al-Saidi (2023) paper highlights the vulnerability and responses of Middle Eastern countries especially that of Yemen, Sudan and Lebanon towards the food shocks owing to the Russia-Ukraine war not to mention the dilapidated political- economic conditions in these countries. The author highlights supply disruptions and increase in agricultural input costs like that of fertilizer and fuel to worsen the food security conditions in the import dependent countries. The author recommends strengthening the local and regional agriculture framework so as to secure the domestic supply of food items like grains. Through the 'event study analysis' and 'regional CAAR analysis', the authors Yousaf et al. (2022) look into the impact of the Russia-Ukraine war on the stock markets of G20 countries and other specific stock markets and the response of those markets on the 'event day' and during the pre and post event days. They find that the announcement of the invasion had adverse effects on the stock markets of Hungary, Poland and Turkey and especially that of Russia (i.e., on the event day) whereas the stock markets of Germany, Australia, France, India, etc., reacted negatively during the post event days. The anticipation of the conflict had significant impact on the stock markets of Russia, Hungary, Poland and Slovakia (i.e., during the 'pre-event days') and the impact continued during the 'post event days' as well. Overall, the 'aggregate stock market' suffered a significant blow as evident in its 'negatively significant' CAAR coefficients. The authors suggest investors to consider investing in areas less affected by the global conflicts like that of North and Latin America and the MENA regions while building their 'international stock-based portfolios'. They suggest policymakers to stabilise the equity markets as long as they consider the 'globalisation of stock markets' and impact of such conflicts on the stock markets. Using the TVP-VAR and network methods, Li et al. (2022) look into the spillover effects and volatility transmission among the major financial markets, namely the stock markets, cryptocurrency markets (ETH and BTC),

ISSN: 2455-8834

Volume:08, Issue:05 "May 2023"

commodity markets (gold and crude oil) owing to the Russia-Ukraine crisis based on data from January 2017 to March 2022. Their findings highlight the 'cross market interdependencies' and the correlation among stock markets of Europe. They also pointout the switch in the nature of US and China stock markets which means that the stock market of the US is now a 'volatility receiver' and that of China is now a 'volatility transmitter' that is only after the war commenced. Moreover, the stock markets of France and Germany are the major net transmitters whereas that of Japan is the major net receiver during the war. Overall, the spillover effect of major international financial markets is increasing during the war. The authors suggest that their research is used indesigning effective strategies of portfolio diversification during the event and the post event days.

The literature gap is mostly contextual in the sense that most of the research material related to the impact of the Russian Ukraine crisis on food inflation seems to be country specific and is majorly focused on Western economies. Similarly, the studies related tothe war's impact on the stock market seems to cater to the Western countries and not much has been explored for the Asian perspective.

Data and Methodology

Data

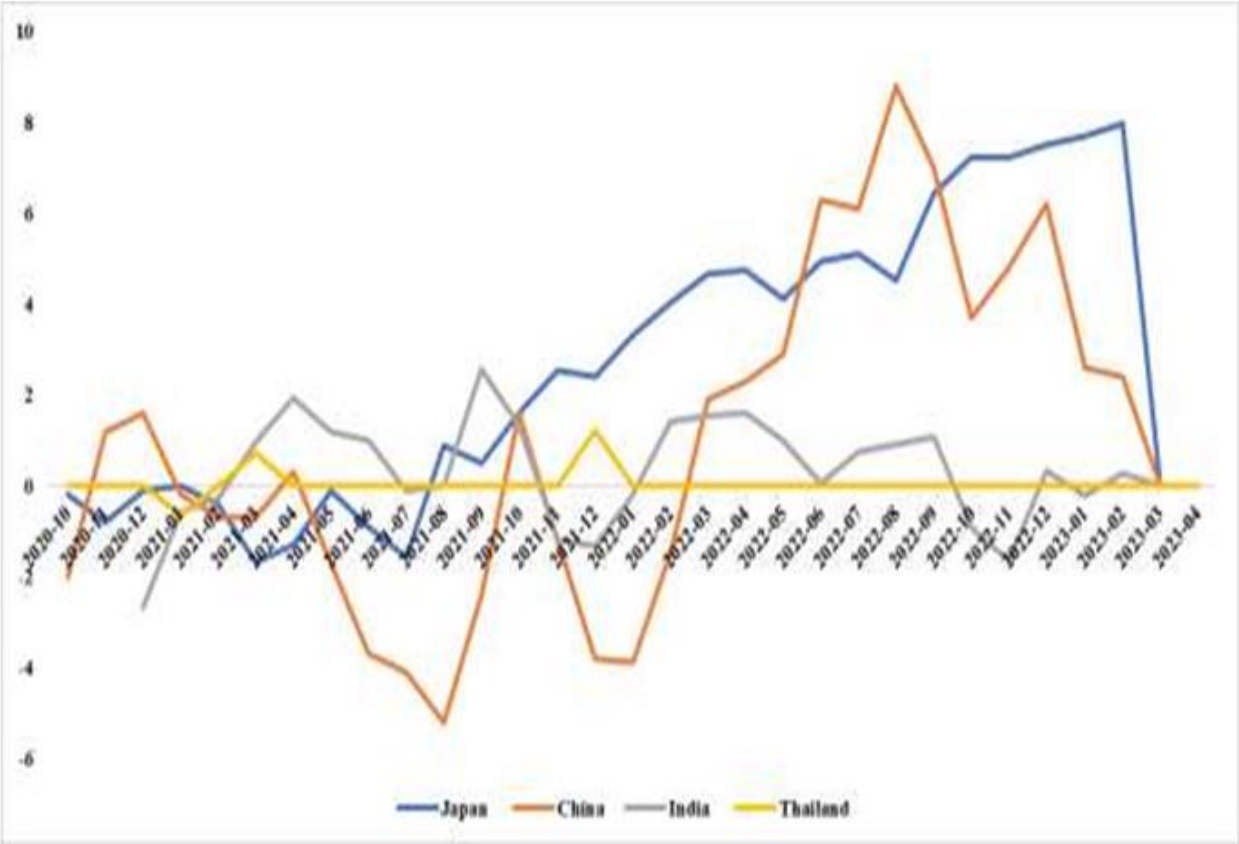
Time series data of food inflation and stock market indices of selected nations India, China, Japan and Thailand is collected from secondary sources with an average of 28 and 31 observations respectively for each country. We collected monthly data of food inflation from October 2020 to February 2023 except for Thailand where data is only available from October 2020 to December 2022. For India, the CFPI data is taken from the website of Ministry of Statistics & Programme Implementation (MoSPI). CPI- food index data of China and Japan is collected from the database provided by the website of Organisation for Economic Co-operation and Development (OECD). For Thailand the CPI-food index data is collected from the website of the Ministry of Commerce.

Moreover, the monthly data of the stock indices Bombay Stock Exchange Sensex (India), Shanghai Stock Exchange Composite index (China), Nikkei 225 index (Japan) and Stock Exchange of Thailand is taken from October 2020 to April 2023 from the website of Yahoo Finance. The type of data to be collected is set to historical prices andonly the closing prices of the respective stock indices is collected with the selected frequency i.e., on a monthly basis.

ISSN: 2455-8834

Volume:08, Issue:05 "May 2023"

Fig. 1. Food inflation in India, China, Japan and Thailand



India's CFPI values shows us a trend of walking inflation of retail food prices i.e., the rate is in single digit. Before Russia invaded Ukraine in February 2022, there was a negative percentage change in CFPI for India which didn't last long and is in a positivetrend after the invasion where the retail food inflation increased by 1.4% in March 2022.Food inflation in India was high in the months of 2ember and October 2022 i.e., by 0.91% and 1.08% respectively and peaked in October 2021 by 2.58%. Food inflation in India was the lowest in January 2021 which recorded – 2.68% in the CFPI. At present,India's food inflation recorded a 0.29% increase in March 2023.

China's food prices, as shown in the CPI Food index, were overall decreasing before the invasion took place and the rate at which their food prices fell started to decrease after the invasion from -3.9% in February 2022 to -1.5% in March 2022. A month afterthe invasion, China's food inflation showed a positive trend in April 2022 (i.e., 1.9%), peaked at 8.8% in September 2022 and was the lowest in September 2021(-5.2%). Foodinflation in China has continued an overall declining trend at present i.e., 2.4% in March2023.

Japan's food prices as shown in the CPI Food index were relatively low before the invasion took

ISSN: 2455-8834

Volume:08, Issue:05 "May 2023"

place. Food prices doubled from 2.4% in January 2022 to 4.04% in March2022 with food inflation recorded at 3.31% in the month of the invasion (i.e., February 2022) and this trend of walking inflation continues till date. At present, Japan's food prices are at an all-time high i.e., at 7.96% in March 2023 while the lowest percentageof food inflation in Japan was recorded in April 2021 (-1.69%).

Thailand's food prices as shown in the CPI Food index were relatively low as well before the invasion took place. Food inflation in Thailand was the highest in February 2022 i.e., by 1.43% and took a sharp decline after the invasion by -0.04% in March 2022. After the invasion, the food prices in Thailand were the highest in July 2022, recording an increase of 1.25% compared to June 2022 with 0.58%. Thailand experienced the lowest level of food inflation in February 2021 with -0.63%.

Fig. 2. Trend in stock market in India

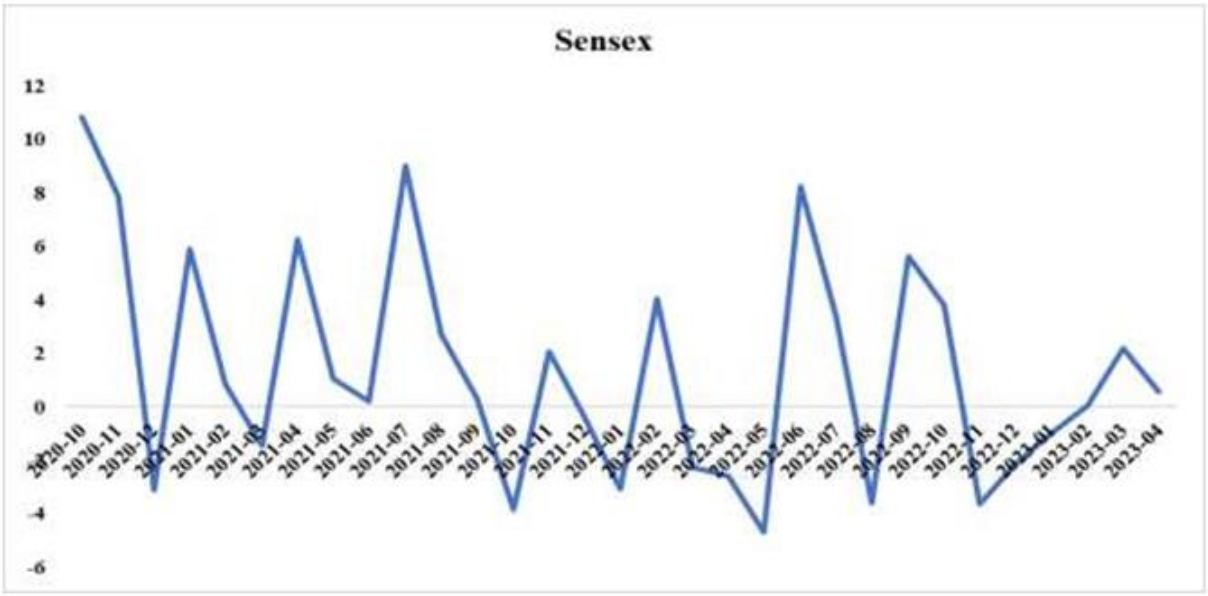


Fig.2 shows the volatility of the stock market returns in India from October 2020 to April 2023. The stock market returns in the Sensex is very volatile as we see the highsand lows in fig.2. The stock market return volatility was highest in October 2020 at 10.84% and lowest in May 2022 at -4.69%. The stock market return volatility continuedto spike between the months of January and February, April and May & July and Augustin the year 2021. There was a slight spike in stock market return volatility between February and March 2022 and it continued to spike in the months of June, July, September and October in the year 2022. Currently, the stock market return volatility is declining again in April after a spike in March in the year 2023.

ISSN: 2455-8834

Volume:08, Issue:05 "May 2023"

Fig.3. Trend in stock market in China

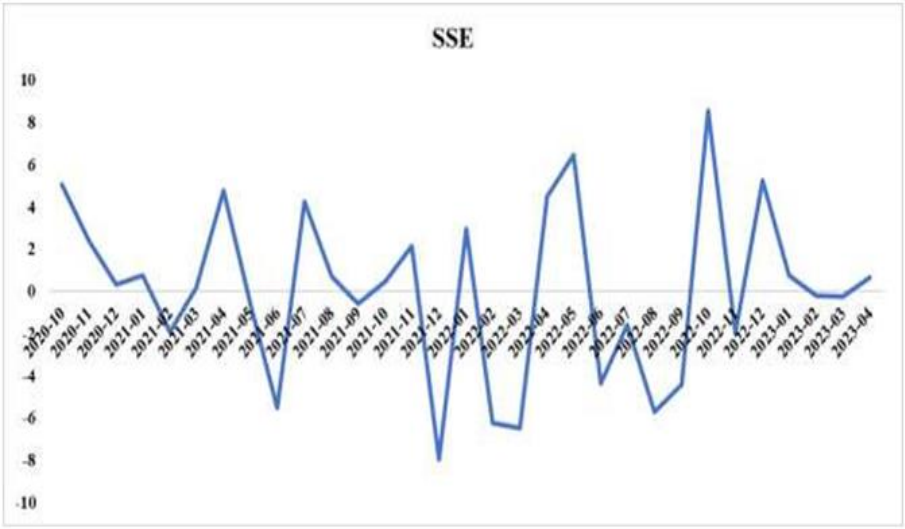
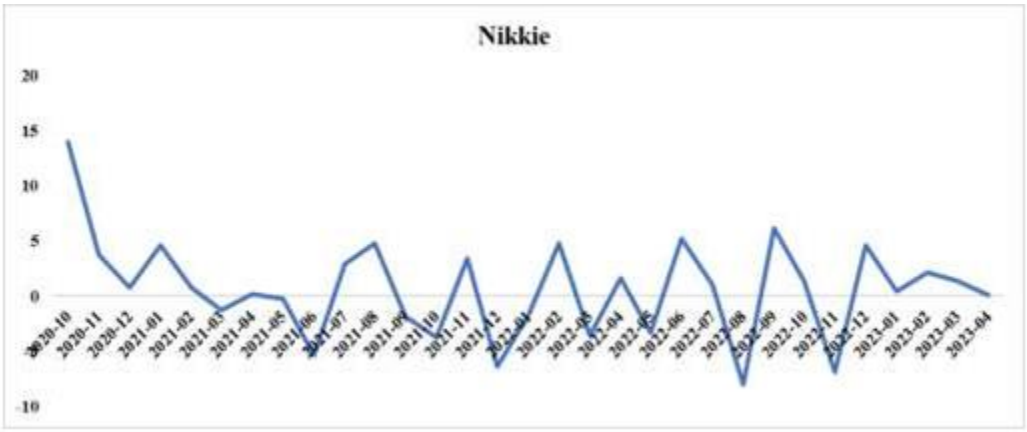


Fig.3 shows the volatility of the stock market returns in China from October 2020 to April 2023. The stock market returns in the SSE is very volatile as well, as we see the highs and lows throughout the selected time period. The stock market return volatility was highest in October 2022 at 8.53% and lowest in December 2021 at 7.95%. The stock market return volatility continued to spike between the months of March and May & July and August in the year 2021. The volatility showcased a sharp increase in April and then continued to surge at a slower rate between April and May and then a sharp decline ensued after May in the year 2022. Currently, the stock market return volatility is going to spike again in April after a sharp decline in January in the year 2023.

Fig.4. Trend in stock market in Japan



ISSN: 2455-8834

Volume:08, Issue:05 "May 2023"

Fig.4 shows the volatility of the stock market returns in Japan from October 2020 to April 2023. The stock market return volatility was highest in October 2020 at 14.01% and lowest in August 2022 at -7.97%. Japan's stock market experienced frequent but lower spikes in stock return volatility in the months of January, August and November in the year 2021 and in the months of February, June, September and December in the year 2022. Presently, the volatility in the stock market returns seems to decline at a slower pace after an insignificant increase in February 2023.

Fig.5. Trend in stock market in Thailand

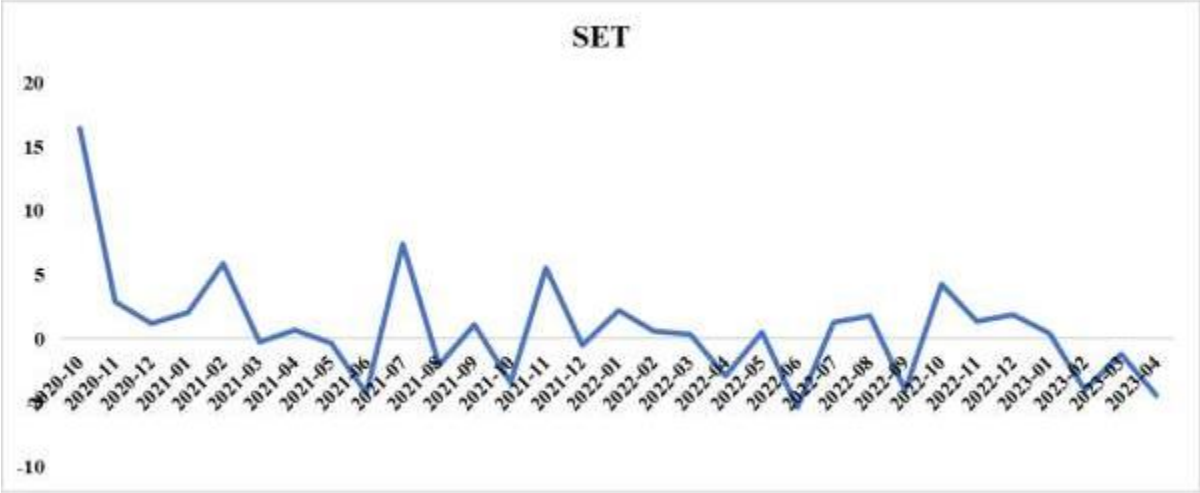


Fig.5 shows the volatility of the stock market returns in Thailand from October 2020 to April 2023. The stock market returns in SET is not very volatile. The stock market return volatility was highest in October 2020 at 16.42% and lowest in June 2022 at -5.4%. Thailand's stock market experienced infrequent lower spikes compared to the rest of the countries in the months of February, July and November in the year 2021 and in the months of January and October in the year 2022. Presently, the stock market of Thailand is experiencing a downward spiral of volatility in the stock market returns and the volatility may be the lowest in the coming month after April 2023.

Methodology

Econometric model

We look into the causal relationships between the Russian Ukraine war and food inflation and between the Russia-Ukraine war and stock market return volatility in the selected nations i.e., India, China, Japan and Thailand, during the time period October2020 to April 2023. The closing prices of the stock indices were used to calculate the returns of those indices in order to conduct this study. Our main goal is to find out the impact of Russia Ukraine war on food inflation and

ISSN: 2455-8834

Volume:08, Issue:05 "May 2023"

stock market return volatility withthe help of regression analysis.

We are using OLS technique to estimate the coefficient and we have developed the following linear regression equations:

$$\textbf{Food inflation} = \alpha + \beta D1 + \varepsilon \quad (1)$$

$$\textbf{Stock market return} = \partial + \varphi D2 + e \quad (2),$$

where

D1= The time dummy variable that represents Russia-Ukraine war in equation 1

D2= The time dummy variable that represents Russia-Ukraine war in equation 2

α = intercept term in equation 1

∂ = intercept term in equation 2

β = effect of Russia-Ukraine war on food inflation

φ = effect of Russia-Ukraine war on stock market return

ε = error term in equation1

e = error term in equation 2

We have taken the time dummy variables to represent the Russia Ukraine war. We havegiven the value 0 for the pre-crisis period and the value of 1 for the post crisis period which starts from February 2022.

Using these two equations as the base of this study, we conduct our result analysis below.

Result Analysis

Table 1. Result of descriptive statistics of Food inflation

	India	China	Japan	Thailand
Mean	0.363214	0.986207	2.772073	-0.11815
Standard Error	0.225531	0.694218	0.593802	0.471923
Median	0.545	1.2	2.538071	0.32
Standard Deviation	1.193399	3.73848	3.197722	2.452183
Sample Variance	1.4242	13.97623	10.22542	6.0132

ISSN: 2455-8834

Volume:08, Issue:05 "May 2023"

Kurtosis	0.23509	-0.72127	-1.3696	23.36033
Skewness	-0.59507	0.288746	0.187011	-4.67977
Range	5.26	14	9.662129	13.43
Minimum	-2.68	-5.2	-1.69323	-0.63
Maximum	2.58	8.8	7.968902	1.43

Table 1 shows the outcome of descriptive statistics of food inflation in India, China, Japan and Thailand. The above table shows the average food inflation in India is 0.36%, for China its 0.98%, for Japan its 2.77% and for Thailand its -0.11%. We can see in table 1 that the variability of food inflation is highest in China and lowest in India. The food inflation variability in Japan and Thailand is at the moderate level. The maximum monthly food inflation is 2.58% in India, 8.8% in China, 7.96% in Japan and 1.43% in Thailand. We observe that the lowest monthly food inflation was recorded in China with -5.25 and also highest for China with 8.8% as mentioned before.

Table 2. Descriptive Statistics of Stock market return

	Sensex	*SSE*	*Nikkei*	*SET*
Mean	1.386269	0.060795	0.687029	0.799894
Standard Error	0.760182	0.738585	0.810094	0.764787
Median	0.576769	0.287516	0.795614	0.59519
Standard Deviation	4.232514	4.112268	4.510411	4.258155
Sample Variance	17.91418	16.91075	20.3438	18.13188
Kurtosis	-0.5794	-0.47867	1.402679	5.023821
Skewness	0.564525	-0.09085	0.387064	1.616544
Range	15.53319	16.49217	21.99267	21.83349
Minimum	-4.69297	-7.95538	-7.97894	-5.40488
Maximum	10.84022	8.536786	14.01372	16.42861

Table 2 shows the outcome of descriptive statistics of stock market returns in India, China, Japan and Thailand. The above table shows the average return in the Indian stock market, Sensex, is 1.38% per month, for China's SSE it is 0.06%, for Japan's Nikkei it is 0.68% and for Thailand's SET index it is 0.79%. We can see in table 2

that the variability in the stock market returns is highest in Japan and lowest in China. The variability in stock returns is moderate for India and Thailand. The maximum monthly stock return is 10.84% in India, 8.53% in China, 14.01% in Japan and 16.42% in Thailand. The lowest

ISSN: 2455-8834

Volume:08, Issue:05 "May 2023"

monthly stock return is recorded in Japan at -7.97% and the highest in Thailand with 16.43 as mentioned before.

Table 3. Result of Regression analysis of India

	Food inflation in India		Stock market of India	
	Intercept α	Dummy variable- D1	Intercept ∂	Dummy variable – D2
Coefficient	0.264667	0.212256	2.191083**	-1.663283
Standard Error	0.312720	0.458948	1.054554	1.516017
t-statistics	0.846337	0.462485	2.077734	-1.097140
p-value	0.4051	0.6476	0.0467	0.2816
R square	0.008159		0.039853	
Adjusted R square	0.029988		0.006745	

** implies that the coefficient is significant

In table 3 we can see that the coefficients of intercept term and dummy variable for foodinflation in India are both insignificant owing to their p-values being more than 0.05 i.e., 0.4051 and 0.6476 respectively. Thus, the Russia- Ukraine war doesn't impact foodinflation in India because the dummy variable that represents the impact of Russia Ukraine crisis on India's food inflation is not significant and therefore, we can concludethat there is no significant impact of the crisis on food inflation in India.

On the other hand, the coefficient of the intercept term for stock market volatility in India is significant owing to its p-value 0.0467 which is less than 0.05 and thecoefficient of the dummy variable for stock market volatility in India is insignificant due to its p-value 0.2816 which far greater than 0.05. Thus, the Russia- Ukraine war doesn't impact the stock market volatility in India because the dummy variable that represents the impact of Russia Ukraine crisis on India's stock market volatility is not significant and therefore, we can conclude that there is no significant impact of the waron stock market volatility in India. We can further prove this by looking at the values of R squared which shows us that only 0.81% of variability in food inflation in India and 3.98% of variability in volatility of BSE Sensex can be explained with the given regression model. Here the low R squared values imply that there is a very low correlation for both food inflation in India and Sensex volatility with the current Russia- Ukraine war. This means there isn't much of the variations in India's food inflation andSensex that can be explained by the ongoing war.

ISSN: 2455-8834

Volume:08, Issue:05 "May 2023"

Table 4. Result of Regression analysis of China

	Food inflation in China		Stock market of China	
	Intercept α	Dummy variable- D1	Intercept ∂	Dummy variable – D2
Coefficient	-1.556250**	5.671635 **	0.444674	-0.793351
Standard Error	0.609752	0.910710	1.040608	1.495969
t-statistics	-2.552269	6.227704	0.427322	-0.530326
p-value	0.0167	0.0000	0.6723	0.5999
R square	0.589568		0.009605	
Adjusted R square	0.574367		-0.024547	

** implies that the coefficient is significant

In table 4 we can see that the coefficients of intercept term and dummy variable for foodinflation in China are both significant owing to their p-values being less than 0.05 i.e., 0.0167 and 0.00 respectively. Thus, the Russia- Ukraine war has an impact the food inflation in China because the dummy variable that represents the impact of Russia Ukraine crisis on China's food inflation is significant and therefore, we can conclude that there is significant impact of the war on food inflation in China which is evident inthe dummy variable coefficient implying a 5.67% increase in food inflation in China due to the war.

On the other hand, the coefficients of intercept term and dummy variable for stock market volatility in China are both insignificant owing to their p-values being more than 0.05 i.e., 0.6723 and 0.5999 respectively. Thus, the Russia- Ukraine crisis doesn't impact the stock market volatility in China because the dummy variable that representsthe impact of Russia Ukraine war on China's stock market volatility is not significant and therefore, we can conclude that there is no significant impact of the war on the stock market of China.

We can further prove this by looking at the values of R squared which shows that 58.95% of variability in food inflation in China and only 0.96% of variability in the volatility of SSE can be explained with the given regression model. The relatively high R squared value of food inflation in China implies a higher correlation between food inflation and the war while a low R squared value of SSE implies a very low correlation between SSE volatility and the war. This means a good chunk of the variations in food inflation in China can be explained by the ongoing war while on the other hand there is negligible evidence regarding variations in SSE volatility that can be explained by the war.

ISSN: 2455-8834

Volume:08, Issue:05 "May 2023"

Table 5. Result of Regression analysis of Japan

	Food inflation in Japan		Stock market of Japan	
	Intercept α	Dummy variable- D1	Intercept ∂	Dummy variable – D2
Coefficient	0.261737	5.599980**	0.897856	-0.435709
Standard Error	0.376960	0.563018	1.145498	1.646756
t-statistics	0.694338	9.946363	0.783813	-0.264586
p-value	0.4934	0.0000	0.4395	0.7932
R square	0.785595		0.002408	
Adjusted R square	0.777655		-0.031992	

** implies that the coefficient is significant.

In table 5 we can see that the coefficient of intercept term for food inflation in Japan is insignificant due to its p-value 0.4934 which is far greater than 0.05 and the coefficientof dummy variable for food inflation in Japan is significant due to its p-value being 0. Thus, the Russia-Ukraine war has an impact the food inflation in Japan because the dummy variable that represents the impact of Russia Ukraine war on Japan's food inflation is significant and therefore, we can conclude that there is significant impact ofthe current crisis on food inflation in Japan which is evident in the dummy variable coefficient implying a 5.59% increase in food inflation in Japan due to the war.

On the other hand, the coefficients of intercept term and dummy variable for stock market volatility in Japan are both insignificant owing to their p-values being more than 0.05 i.e., 0.4395 and 0.7932 respectively. Thus, the ongoing war doesn't impact the stock market volatility in Japan because the dummy variable that represents the impactof the war on Japan's stock market volatility is not significant and therefore, we can conclude that there is no significant impact of the war on the stock market of Japan.

We can further prove this by looking at the values of R squared which shows that 78.55% of variability in food inflation in Japan and only 0.24% of variability in the volatility of Nikkei can be explained with the given regression model. The high R squared value of Japan's food inflation implies a very high correlation between food inflation in Japan and the ongoing war while a low R squared value of Nikkei implies a very low correlation between Nikkei volatility and the war. This means a large portion of the variations in Japan's food inflation can be explained by the ongoing war while on the other hand there is insignificant evidence regarding variations in the volatility inNikkei that can be explained by the war.

ISSN: 2455-8834

Volume:08, Issue:05 "May 2023"

Table 6. Result of Regression analysis in Thailand

	Food inflation in Thailand		Stock market of Thailand	
	Intercept α	Dummy variable- D1	Intercept ∂	Dummy variable – D2
Coefficient	-0.6575	1.323864	2.148551**	-2.787225
Standard Error	0.601911	0.943013	1.021126	1.467962
t-statistics	-1.09235	1.403865	2.104099	-1.898704
p-value	0.285093	0.17266	0.0442	0.0676
R square	0.073073		0.110568	
Adjusted R square	0.035996		0.079898	

** implies that the coefficient is significant.

In table 6 we can see that the coefficients of intercept term and dummy variable for foodinflation in Thailand are both insignificant owing to their p-values 0.285093 and 0.17266 respectively. Thus, the current crisis doesn't impact food inflation in Thailandbecause the dummy variable that represents the impact of the ongoing war on Thailand's food inflation is not significant and therefore, we can conclude that there is no significant impact of the crisis on food inflation in Thailand.

On the other hand, the coefficients of intercept term for stock market volatility in Thailand is significant owing to its p-value 0.0442. However, the coefficients of dummy variable for stock market volatility in Thailand is not significant owing to its p-value 0.0676. Thus, the ongoing Russia Ukraine war doesn't impact the stock market of Thailand because the dummy variable that represents the impact of the ongoing war on Thailand's stock market volatility is not significant and therefore, we can conclude thatthere is no significant impact of the crisis on the stock market volatility in Thailand.

We can further prove this by looking at the values of R squared which shows that only 7.3% of variability in food inflation in Thailand and 11.05% of variability in the volatility of SET can be explained with the given regression model. Here the low R squared values implies that there is a very low correlation for both food inflation in Thailand and SET volatility in relation to the war. This means that there isn't much evidence regarding the variations in Thailand's food inflation and SET that can be explained by the war.

Conclusion

Our main findings, on the basis of the result analysis, shows us the impact of the Russia-Ukraine war on the food inflation to be visible in China and Japan whereas the war's effect on the stock

ISSN: 2455-8834

Volume:08, Issue:05 "May 2023"

markets of all the countries selected is shown to be insignificant. We observe the highest and lowest monthly food inflation in China (8.8% and -5.2% respectively) and the highest monthly stock return volatility in Thailand (16.42%) and the lowest in Japan (-7.97%) among the selected countries. The variability of food inflation is highest in China and lowest in India. On the other hand, the variability in stock market returns is highest in Japan and lowest in China. On the basis of the regression outcome, in India, the war doesn't have much effect on its food inflation andstock market return volatility. For China, the war heavily impacts its food inflation while it has insignificant effect on its stock market returns. Similarly for Japan the war has an impact on its food inflation but to a greater extent compared to China but it has a miniscule effect on its stock market returns. For Thailand, the effect of war on its foodinflation and stock market is very minor but it's still greater in comparison to India. We suggest reducing the dependency of food imports from Russia and Ukraine and look foralternative food suppliers for the time being in order to strengthen food security and notbe affected by the externalities caused by the war. As a further additional layer of protection, countries should go for import substitution and strengthen the domestic production of its staple foods in order to not be affected by the international food prices that are of course subject to the impact of the ongoing war. We suggest investors to re-diversify their portfolios and look into stocks of other countries that show low variability in their stock market returns or to invest in those countries where the impactof the war is microscopic. If the goal is to get higher returns, then one can consult an expert and then carefully look into the trend of the stock markets having high variabilityin order to get the high return given that the risk is higher. There are several limitationsto this research paper, namely, the lack of monthly data of food inflation for the currentyear in the case of Thailand. Moreover, we have only selected four countries for the analysis but we could have taken more countries to make the research more credible. Furthermore, we have only taken the Russia Ukraine war as the only variable in the regression but we could have taken in more variables that have an effect on food inflation and stock market return volatility of countries.

References

Binns, C., & Low, W. Y. (2022). Peace, war, and public health. Asia Pacific Journal of Public Health, 34(5), 481-482. https://doi.org/10.1177/10105395221109066

FP staff (2023, April 14). Russia-Ukraine War: Kyiv's GDP fell by 29.1% in 2022, figures slightly better than govt forecast. Firstpost. https://www.firstpost.com/world/russia-ukraine-war-kyivs-gdp-fell-by-29-1-in-2022- figures-slightly-better-than-govt-forecast-12453362.html

Mofid, K. (1990). The economic consequences of the Gulf War. Taylor & Francis. http://library.oapen.org/handle/20.500.12657/24104

ISSN: 2455-8834

Volume:08, Issue:05 "May 2023"

ITYINTHEWORLD, T. Policy options to address price volatility and high prices. FAO (2011) https://www.fao.org/3/i2330e/i2330e05.pdf

Dawe, D., & Morales-Opazo, C. (2009). How Much Did Developing Country Domestic Staple Food Prices Increase During the World Food Crisis?: How Much Have They Declined?. Agricultural Development Economics Division, The Food and Agriculture Organization of the United Nations. https://www.fao.org/3/ak421e/ak421e.pdf

Ivanic, M., Martin, W., & Zaman, H. (2012). Estimating the short-run poverty impacts of the 2010–11 surge in food prices. World Development, 40(11), 2302-2317. https://doi.org/10.1016/j.worlddev.2012.03.024

Von Braun, J. (2008). Food and financial crises: Implications for agriculture and the poor (Vol. 20). Intl Food Policy Res Inst. http://dx.doi.org/10.2499/0896295346

Olbrys, J. (2021). The Global Financial Crisis 2007-2009: A Survey. Available at SSRN 3872477. https://dx.doi.org/10.2139/ssrn.3872477

Kettell, S. (2023, April 4). oil crisis. Britannica https://www.britannica.com/topic/oil-crisis

Leigh, A., Wolfers, J., & Zitzewitz, E. (2003). What do financial markets think of war in Iraq?. https://ssrn.com/abstract=391123

Chen, A. H., & Siems, T. F. (2004). The effects of terrorism on global capital markets. European journal of political economy, 20(2), 349-366. https://doi.org/10.1016/j.ejpoleco.2003.12.005

Times of India (2023, February 24). One year of Russia-Ukraine war: How the conflict impacted Indian economy. Times of India. https://m.timesofindia.com/business/india-business/one-year-of-russia-ukraine-war-how-the-conflict-impacted-indian-economy/articleshow/98214568.cms

Shah, S. N. A., Majeed, G., Ali, R. A., & Hussain, T. (2022). Russia-Ukraine crisis and its impact on south asia. Review of Applied Management and Social Sciences, 5(2), 141-148. https://doi.org/10.47067/ramss.v5i2.219

Sohag, K., Islam, M. M., Tomas Žiković, I., & Mansour, H. (2022). Food inflation and geopolitical risks: analyzing European regions amid the Russia-Ukraine war. British Food Journal. https://doi.org/10.1108/BFJ-09-2022-0793

Abay, K. A., Breisinger, C., Glauber, J. W., Kurdi, S., Laborde Debucquet, D., & Siddig,

K. (2022). The Russia-Ukraine crisis: Implications for global and regional food security and potential policy responses (Vol. 39). Intl Food Policy Res Inst.

ISSN: 2455-8834

Volume:08, Issue:05 "May 2023"

https://doi.org/10.1016/j.gfs.2023.100675

Ben Hassen, T., & El Bilali, H. (2022). Impacts of the Russia-Ukraine war on global food security: towards more sustainable and resilient food systems?. Foods, 11(15), 2301. https://doi.org/10.3390/foods11152301

Jagtap, S., Trollman, H., Trollman, F., Garcia-Garcia, G., Parra-López, C., Duong, L.,... & Afy-Shararah, M. (2022). The Russia-Ukraine conflict: Its implications for the global food supply chains. Foods, 11(14), 2098. https://doi.org/10.3390/foods11142098

Hellegers, P. (2022). Food security vulnerability due to trade dependencies on Russia and Ukraine. Food Security, 14(6), 1503-1510. https://doi.org/10.1007/s12571-022- 01306-8

Nasir, M. A., Nugroho, A. D., & Lakner, Z. (2022). Impact of the Russian–Ukrainian Conflict on Global Food Crops. Foods, 11(19), 2979. https://doi.org/10.3390/foods11192979

Ozili, P. K. (2022). Global economic consequence of Russian invasion of Ukraine. Available at SSRN. http://dx.doi.org/10.2139/ssrn.4064770

Mishra, A (2022) "Effect of Economic Policy Uncertainty and Crude Oil on Food Prices in India: Evidence from Symmetric and Asymmetric Investigation" Indian Journal of Economics and Development(IJED), ISSN no 2322-0430. Vol 18, issue 03, https://doi.org/10.35716/IJED/22022

Mishra, A (2021) "Food Commodity Price Volatility and Its Nexus with Monetary Factor: An Empirical Analysis of India". International Journal of Management Practice (IJMP) ISSN no 1741-8143. Vol. 14, No. 1, pp- 88-106, http://www.inderscience.com/offer.php?id=111748

Mishra, A (2020) "Tracking the Transmission Channels of Fiscal Deficit and Food Inflation Linkages: A Structural VAR Approach" Indian Journal of Economics and Development (IJED), ISSN no 2322-0430. Vol 16, issue 02, pp- 165-172,https://doi.org/10.35716/IJED/19129

Mishra, A (2019) "Crude Oil, Stock Market, and Foreign Exchange Return Volatility and Spillover: a GARCH DCC analysis of Indian and Japanese Financial Market". International Journal of Business Innovation and Research (IJBIR), ISSN no 1751- 0260. Inderscience publication. Vol 10, issue 03, pp- 25-46. https://dx.doi.org/10.1504/IJBIR.2019.101687

Mishra, A (2019a) "Foreign Exchange, Gold, and Real Estate Markets in India: An Analysis of Return Volatility and Transmission". Indian Journal of Finance, Vol 13, issue 07, pp-50-64. DOI:http://dx.doi.org/10.17010/ijf%2F2019%2Fv13i7%2F145535

Mishra, A (2020a). "Quest of Nexus between Inflation and Economic Development: Evidence from Asian Countries" International Journal of Happiness and Development (IJHD) ISSN no

ISSN: 2455-8834

Volume:08, Issue:05 "May 2023"

2049-2804. Vol. 6, No. 2, pp-95-112. https://www.inderscience.com/info/inarticle.php?artid=111201 . .

Sviatko, M. Why Inflation Is Poised to Remain ASEAN's Main Economic Concern in 2023.https://www.researchgate.net/publication/368645463_Why_Inflation_Is_Poised_to_Remain_ASEAN's_Main_Economic_Concern_in_2023

Aliu, F., Kučera, J., & Hašková, S. (2023). Agricultural Commodities in the Context of the Russia-Ukraine War: Evidence from Corn, Wheat, Barley, and Sunflower Oil. Forecasting, 5(1), 351-373. https://doi.org/10.3390/forecast5010019

Saridakis, G., Alexiou, C., Hosein, R., & Satnarine-Singh, N. (2022). Hegemonic Sanctions and Global Economic Ramifications in the Context of the Russian-Ukrainian Conflict: A Commentary. Available at SSRN 4176209. http://dx.doi.org/10.2139/ssrn.4176209

Bhatta, A. (2022). The Ukraine war and its food security implications in Nepal (Vol. 22). Intl Food Policy Res Inst. https://ideas.repec.org/p/fpr/resapn/22.html

Bin-Nashwan, S. A., Hassan, M. K., & Muneeza, A. (2022). Russia–Ukraine conflict: 2030 Agenda for SDGs hangs in the balance. International Journal of Ethics and Systems, (ahead-of-print). https://doi.org/10.1108/IJOES-06-2022-0136

Orhan, E. (2022). The effects of the Russia-Ukraine war on global trade. Journal of International Trade, Logistics and Law, 8(1), 141-146. http://jital.org/index.php/jital/article/view/277

Arndt, C., Diao, X., Dorosh, P., Pauw, K., & Thurlow, J. (2023). The Ukraine war and rising commodity prices: Implications for developing countries. Global Food Security, 36, 100680. https://doi.org/10.1016/j.gfs.2023.100680

von Cramon-Taubadel, S. (2022). Russia's invasion of Ukraine–implications for grain markets and food security. Ger. J. Agric. Econ, 71, 1-13. https://www.german-economic-team.com/en/publication/russias-invasion-of-ukraine-implications-for-grain-markets-and-food-security-2/

Rabbi, M. F., Ben Hassen, T., El Bilali, H., Raheem, D., & Raposo, A. (2023). Food Security Challenges in Europe in the Context of the Prolonged Russian–Ukrainian Conflict. Sustainability, 15(6), 4745. https://doi.org/10.3390/su15064745

Skorokhod, Y., Serbina, N., Sapsai, A., & Tsyrfa, I. (2023). Political commentary on world hunger triggered by war in Ukraine. International Journal of Environmental Studies, 1-8.

ISSN: 2455-8834

Volume:08, Issue:05 "May 2023"

https://doi.org/10.1080/00207233.2023.2177425

Lakhal, N. (2022). Global food security is threatened by the Russia-Ukraine conflict. Journal of Studies in Economics and Management Volume, 5(02), 797. https://www.asjp.cerist.dz/en/article/206464

Khetsoongnoen (2022). THE IMPACT OF THE RUSSIA-UKRAINE CONFLICT ON THAILAND'S ECONOMY IN 2022. Interdisciplinary Sripatum Chonburi Journal (ISCJ), 8(2), 113-123. https://so04.tci-thaijo.org/index.php/ISCJ/article/view/258266

Guan, Y., Yan, J., Shan, Y., Zhou, Y., Hang, Y., Li, R., ... & Hubacek, K. (2023). Burden of the global energy price crisis on households. Nature Energy, 1-13. https://doi.org/10.1038/s41560-023-01209-8

Al-Saidi, M. (2023). Caught off guard and beaten: The Ukraine war and food security in the Middle East. http://dx.doi.org/10.3389/fnut.2023.983346

Yousaf, I., Patel, R., & Yarovaya, L. (2022). The reaction of G20+ stock markets to the Russia–Ukraine conflict "black-swan" event: Evidence from event study approach. Journal of Behavioral and Experimental Finance, 35, 100723. https://doi.org/10.1016/j.jbef.2022.100723

Li, Y., M Alshater, M., & Yoon, S. M. (2022). The impact of Russia-Ukraine conflict on global financial markets. Available at SSRN 4108325. https://dx.doi.org/10.2139/ssrn.4108325

