THE IMPACT OF SANCTIONS ON ECONOMIC GROWTH: THE CASE OF THE RUSSIAN FEDERATION

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This paper explores the economic impact of international sanctions imposed on the Russia, particularly after the geopolitical conflicts. Sanctions have long been used as a diplomatic tool effecting to state behaviour to restrict access to global market, limiting financial transactions and controlling the trade circulation. These economic restrictions have significantly hindered Russia's economic growth. This paper conducts a comprehensive analysis of the effects of sanctions on key economic indicators, including Gross Domestic Product (GDP), Foreign Direct Investment (FDI), inflation, trade balance, and currency stability. Using time-series data from 1992 to 2022, the study applies the Vector Auto Regression (VAR) model within the framework of dependency theory to assess the relationship between various economic variables and Russia's economic well-being. The results indicate that there is a negative correlation between oil prices and their impact on economic growth. However, FDI and oil prices had a negative impact on the economy when compared to other indicators like sanctions. Furthermore, it explores potential growth trajectories for the Russian economy. The article concludes with policy recommendations for both sanction-imposing countries and Russia, emphasizing the need for adaptive economic strategies, diversified trade partnerships, and diplomatic engagement to mitigate economic vulnerabilities and ensure long-term stability.
Key words: economic impacts, sanctions, economic growth, dependency theory
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1 INTRODUCTION

Economic sanctions serve as coercive measures that lie between mere diplomatic pressure and the extreme of military intervention. As former United Nations (UN) noted

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in Secretary-General Kofi Annan's speech, "sanctions" represent more than just verbal condemnation and less than the use of armed force. Similarly, former United States' (US) President Woodrow Wilson put it (Drezner,1999): "A nation boycotted is a nation that is in sight". Recently, globally the most discussed state is Russia. Initial round of sanctions was imposed in 2014 by the United States of America (USA), European Union (EU) and several other countries in response to the situation in Crimea (a small city in the northeast of Russia). However, the early sanctions targeted specific individuals and companies, having limited impact on broader Russian economy. As the conflict between Russia and Ukraine escalated, EU and USA glazed to additional sectoral sanctions such as limitation of oil and gas production companies, restricted financial transactions in commercial banks and no access to advanced production technologies. However, according to the words of the President of Russian Federation, Vladimir Putin, European sanctions have done no harm on Russia "We have growth and they have decline" (BBC, 2024). It means that through the bordered countries such as Kazakhstan, Georgia and Belarus it is able to get sanctioned Western goods.

Though sanctions are in a run for some time, there is still no measurement of its impact assessment. For example, before the US Congress in January 2015, B. Obama said that "the Russian economy is in fail" although the other economists suppose sanctions have no significant impact or little (The White House, 2015). An International Monetary Fund (IMF)'s report was about decreasing value of ruble by 76% against US dollar while consumer goods experienced the 16% inflation and Russian's Gross Domestic Product (GDP) decreased by 3% (Stepanyan et al., 2016).

According to National Broadcasting Company (NBC) News data in 2015 $576 million assets are frozen in the Russian banks while USA announced not only the extension of sanctions in several sectors especially in food industry but also prolonged the duration of implemented sanctions to Russia (NBC, 2022). Alternatively, because of the collection of sanctions to Russia also impacted to the diplomatic relations among the other states which supported them against sport activities as an example. It means that according to the International Olympic Committee rules recently in Olympic games 2024 Russia's athletics were banned to take part there as long as only few numbers of athletes were allowed only in the case of not presenting Russian iconography including flags, colors and anthems. Consequently because of weak diplomatic relations with western countries, not only the country suffered from the lack of income which may reduce the investment in sports infrastructure and programs, affecting long-term development and potential future revenue but also athletes may lose opportunities for endorsements and career advancement, leading to a decline in economy.

Based on above mentioned issues, there is a high demand for empirical research of the sanctions and its impact on Russian economy. Therefore, this paper aims to study economic channels of sanctions' impact and also political effects on Russia's economic growth. The main objectives of current study as follows: Initially, analyze the direct

effects of economic sanctions on Russia's GDP growth and key economic indicators and then Investigate changes in foreign direct investment (FDI) in Russia post-sanctions. Finally, investigating how Russia most affected by economic sanctions and their broader implications for economic growth. By using this, in the future, big sectors like oil and gas industry may find easy solutions to unpredictable external factors, making their services adaptable preventing from going bankruptcy. Additionally, the research is also about how sanctions will affect the diplomatic decisions.

Russia is considered one of the biggest economic players in global arena. According to the World Trade Organization (WTO) report in 2015, 167 countries trade is dependent with Russia (WTO, 2015). Strong trade relations and diplomatic ties were mutual beneficial for both countries. Because of the current sanctions, number of countries such as Tajikistan, Kyrgyzstan, Armenia, Georgia, Uzbekistan and Russia itself having significant challenges (IMF working papers, 2023). According to recent study by Stepanyan in 2015 (Stepanyan et al., 2015), Migrant remittances account for a huge source of external income and financing for many Commonwealths of Independent States (CIS) countries. Russia is the owner of one of the largest majority of remittances, comprising 19% of GDP for Tajikistan, 7% for Armenia and 2% for Georgia and Moldova in the case of 2021. The flow of remittances from Russia is usually associated with the non-trade sector of Russia, where labor migrants from region work. This is a potential source of vulnerability for remittance-receiving countries as the recession in Russia is propagated by declining cross-border remittance flows. However, according to IMF report, some countries advantaged from the changes in real and financial boundary inflows in the short run. As an example, sanctions have decreased the potential of import ability from EU and the US, encouraging to higher trade with other neighborhood countries (IMF, 2023). Therefore, it again calls urgency of deeply researching this topic and give potential recommendations by scholars to academia. In order fully analyze the research framework, the authors applied Vector autoregression (VAR) method along with regression analysis, which gives more accurate and exact results of the scenario. The research is covered the dataset of the last 30 years from 1992 to 2022.

Structure of the article follows with literature review in section 2. While Methodology section is placed in third part. Results and discussion located in section 4 and the last conclusion section ends the study.

2 LITERATURE REVIEW

Over the past several years, sanctions are getting serious in the international politics to prohibit the targeted state's economic activity and no country has used from sanctions considerably more a lot than USA and its power is enough statistically to decrease the economic power of issued country. It has had a major impact on how the Russian economy has developed. The goal of these sanctions, which target important industries like energy, banking, and defence is to put economic pressure on the Russian

government and influence how it behaves internationally. Foreign investment has been hampered and significant hurdles have been created for Russian enterprises by the sanctions, which limit the access to international financing markets, technological transfers, and essential imports. As an example, Russia is the second large user of The Society for Worldwide Interbank Financial Telecommunications (SWIFT) system after the USA to transfer the international payments regarding with the oil sector especially. Even though EU was against to ban SWIFT system in Russia because of being trade partner, later on totally this payment method was removed from the all banks. Instead of this Russia had to use from their own services and domestic financial infrastructure for the operations.

Furthermore, statistically one group of studies claimed that imposing UN sanctions into the country moderately decreases annual real per capita of GDP growth rate by more than 2% (Neuenkirch and Neumeier, 2015). Hence, the political attack of US to Russia (Kasymov, 2012) because of its combination of Crimea in 2014 and further causes bringing to its invasion of Ukraine in 2022 for a long time are still highly discussed topic.. Since then, many scientists are studying how well this giant country can withstand these shocks. As an example, Galbert (2015) measure the outcome and future of Russia sanctions from the European perspective while the others (Nusratullin et al., 2021) identified the less significant effect of sanctions to Russia than the leaders of these countries expected. Furthermore, Oxenstierna's and Olsson's (2015) studies regarding with division of sanctions are about examining effectiveness of sanctions to supply the compliance and those that consider the economic and political impacts of sanctions.

Evaluating the success of sanctions took the great deal of attention from researchers and policymakers. Earlier studies were covered more about qualitative and from the political perspective while the others approached from only the economic sides. As an example, Brown (2020) went deeper with oil-related economic sanctions influencing the global oil markets by constraining supply and altering trade dynamics while Tuzova and Qayum (2016) through the VAR quantified the oil prices which led to the opposite effect of increasing prices and, in the event of its cancellation, a fall in supply and prices that could complicate the balance sheet. From another side, one of the first sanctions researchers to observe that penalties frequently result in higher degrees of political integration in the target country is Galtung (1967). This phenomenon, known as the "rally-around-the-flag effect," has drawn the attention of numerous authors in the sanctions' literature. Consequently, Mayall (1984) states that penalties "often have perverse effects, generating a unity and strong feeling which will succeed in tough times, which was not there before because of a defensive mindset."

A study by Ghomi (2022) analyzed the macroeconomic and distributional effects of the sanctions against Iran. Applying the synthetic control method, the research finds that the Iranian economy suffered a maximum decline of 19.1% in real GDP four years after the sanctions were imposed, with incomplete recovery even after their removal.

Contrary to the intended objectives of the sanctions, the patterns of poverty indicate that educated individuals and those employed in the public sector remain largely unaffected. However, the sanctions have disproportionately driven young, illiterate, rural, and religious minority households into poverty. Moreover, the old investigation by Torbat (2005) also focused on trade and financial sanctions on Iran. The study concludes that while the economic impact of the sanctions has been substantial, their political influence has been limited. It proposes that redirecting sanctions specifically toward the ruling clergy could enhance their effectiveness while reducing their unintended consequences on the general population. Implementing well-targeted sanctions may help to control Islamic fundamentalism in the region, developing greater stability and improved relations with the West.

The consequences of economic sanctions are always hot topic to debate. Number of scholars researched on this topic, raising different outcomes with the case of several countries. For instance, Özdamar and Shahin (2021) examines the relationships between various types of sanctions, their enforcers, and target states. Additionally, the study highlights thematic, methodological, and theoretical gaps in the existing literature on sanction consequences. It emphasizes the need for a unified approach to analyzing sanctions within the broader framework of international interdependence. Similarly, Morgan et al. (2023) investigates the evolution of economic sanctions in the post-World War II era. A review of economic and political science literature suggests that integrating both perspectives could enhance the understanding of sanction processes and address key challenges in the field. Lastly, Meyer et al. (2023) studied the international business activities under the sanctions, which indeed valuable research. By synthesizing scholarly evidence, researchers examine how sanctions reshape institutional frameworks and how firms adapt, drawing on theories such as the institution-based view, resource dependency theory, and behavioural theories of the firm. As politically driven disruptions, sanctions challenge key theoretical assumptions, highlighting the need for strategic responses from businesses and governments in an increasingly geopolitically sensitive world.

Sanctions of this kind frequently result in a rise in public support for the target country's governing regime (Mack and Khan, 2000). Furthermore, sanctions may backfire as Galtung (1967) notes since they might create a new elite part in the issued country that gains international isolation. Still two side researches are seeming not adequate to get both economically and politically insights about sanctions' affect to Russia. Hence, in addition to available investigations current study contributes to this path of the literature by empirically examining long term effects of sanctions within the segments of Russia using Stata as a tool because there is limited comparative study on the effectiveness of US sanctions in comparison to those imposed by other nations or international entities. Understanding how different sanctions regimes affect economic growth might give useful information. Additionally, the modelling of future possibilities for the Russian economy under different levels of sanction severity and global economic trends is limited.

3 THEORETICAL FRAMEWORK

Accordingly, current research attempts to extend the scope of the literature by exploring the casual relationship between the Russia's economic growth and sanctions through dependency theory. There have been discovered many topics linking to the dependency theory but regarding with sanctions it is lacking. However, dependency theory matches with the sanction because dependency theory assumes that peripheral countries' economic growth is significantly impacted by their interactions with core countries. By highlighting preexisting disparities, this framework aids in the explanation of how sanctions may impact economic growth. Core countries use sanctions as a tool to affect economies in periphery regions, such as Russia. These policies have the potential to impede economic progress and increase dependency by restricting access to international markets. The theory itself published in the late 1950s by the Argentine economist and statesman Raul Prebisch where this theory is analyzed in terms of three forms of explanation: structural, functional, and intentional (Simon and Ruccio, 1986). Hence, we applied two theoretical constructs according to current study: first one is "Core-Periphery Dynamics: Sanctions could make Russia an even more peripheral economy by limiting its access to markets". Second is "Structural Dependence: Due to its reliance on energy exports, Russia is less able to diversify due to external pressures". Furthermore, reviewing previous sanctions reveal the trends that align with dependency theory and emphasizes the historical effects they have had on Russia. It proves as the outstanding technique to run analysis and give potential solution for economic growth factors in targeted state.

While dependency theory provides a strong foundation for understanding the economic impact of sanctions on Russia, integrating additional theoretical perspectives can offer a more comprehensive analysis of their implications. In this study, we further incorporate the political economy of sanctions and neoclassical economic theory to examine the broader consequences and strategic dynamics surrounding economic restrictions.

The political economy of sanctions approach offers valuable insights into how different domestic and international actors respond to sanctions. Sanctions often fail to achieve their intended political goals because they disproportionately impact civilian populations rather than ruling elites (Peksen and Drury, 2010). In Russia's case, despite economic constraints, the government has maintained political stability through various mechanisms, including state-controlled media, economic nationalism, and increased trade with alternative partners such as China and India. This theory explains how authoritarian regimes can manipulate economic hardship to consolidate power rather than succumb to external pressure. From a neoclassical economic (Goodland and Ledec, 1987) perspective, sanctions are seen as external shocks that change market equilibrium, leading to inefficiencies in production, trade, and consumption. This theory assumes that economic agents act rationally and respond to changes in market conditions by adjusting

their behaviour to minimize losses. In the context of Russia, sanctions have led to supply chain disruptions, increased transaction costs, and restricted access to foreign capital and technology. The reduction in efficiency negatively impacts GDP growth by reducing investment opportunities and technological innovation. Additionally, neoclassical theory suggests that sanctions create welfare losses, meaning that both the target country and the sanctioning countries experience negative economic consequences due to reduced trade and investment flows. This perspective emphasizes the broader economic consequences of sanctions beyond the targeted state.

Figure 1: Conceptual framework of the study
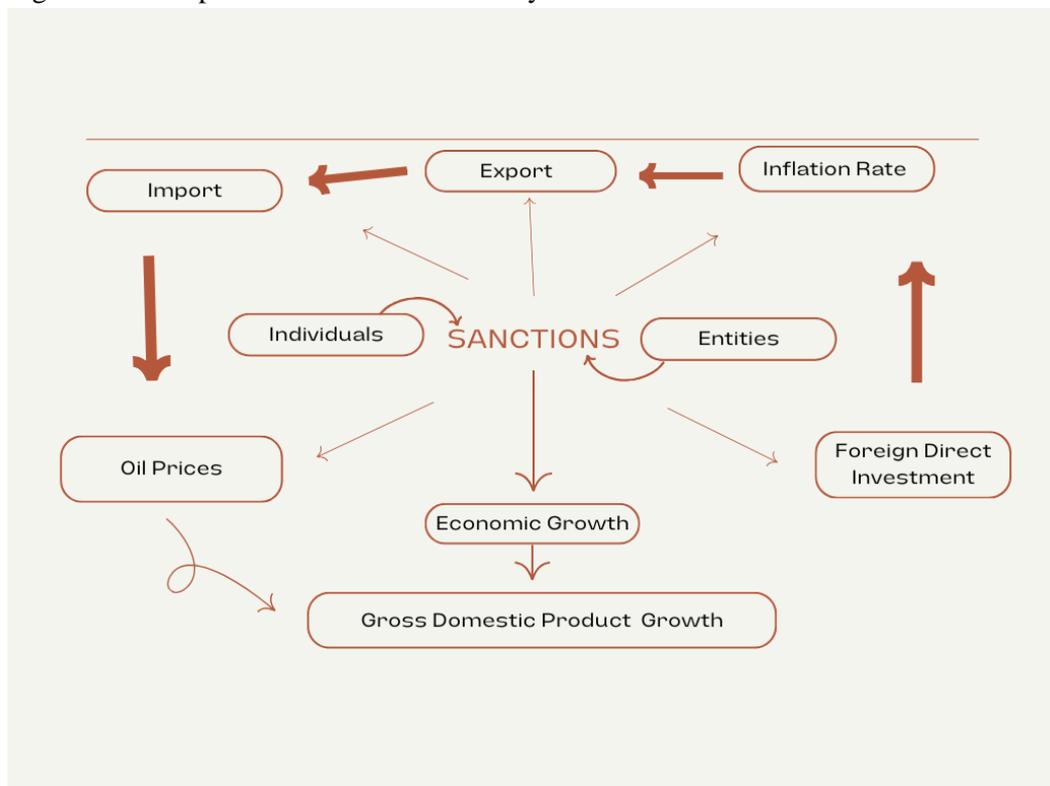
Source: processed by author.

On the other hand, Game theory provides a strategic perspective on sanctions, analyzing them as an interactive decision-making process between Russia and sanctioning countries. Sanctions are a strategic tool used by core countries to pressure peripheral economies, but their success depends on the responses of the targeted state and its allies (Drezner, 1999). Russia's response to sanctions illustrates a classic game-theoretic scenario, where the country engages in counterstrategies such as import substitution, alternative trade alliances, and currency de-dollarization. The effectiveness of sanctions is thus contingent on whether Russia can effectively counteract the imposed

restrictions. Moreover, game theory suggests that sanctions can lead to unintended retaliatory measures, such as energy supply restrictions or cyber-economic warfare, further complicating international economic relations.

In this study, we represent a conceptual diagram to illustrate relationship between sanctions imposed on individuals and entities and their impact on economic growth, specifically indicated by GDP growth. This figure serves as a visual aid of our research framework, including independent variables and dependent variable. The main independent variables are the sanctions and at the center of the map their effect to GDP Growth was described. Furthermore, this figure not only clarifies the pathways but also shows the interconnectedness of these variables.

4 OVERVIEW OF THE SANCTIONS AND RUSSIA'S ECONOMIC PERFORMANCE

Despite recent strains in diplomatic relations between the U.S. and Ukraine, both the United States and the European Union persist in enforcing sanctions against Russia, with a particular emphasis on its financial sector. The goal of these sanctions is to limit Russia's financial operations on a global scale. Notably, as the dynamics of U.S. – China relations evolve, China has increasingly turned its attention to the Eurasian region to bolster its economic connections – a development that indirectly supports Russia. Additionally, some Western nations have opted to exempt specific Russian banks that are involved in oil exports from sanctions, enabling Russia to sustain limited but crucial economic interactions with the rest of the world.

Figure 2: Inflation rate in Russia between February and December in 2024, %
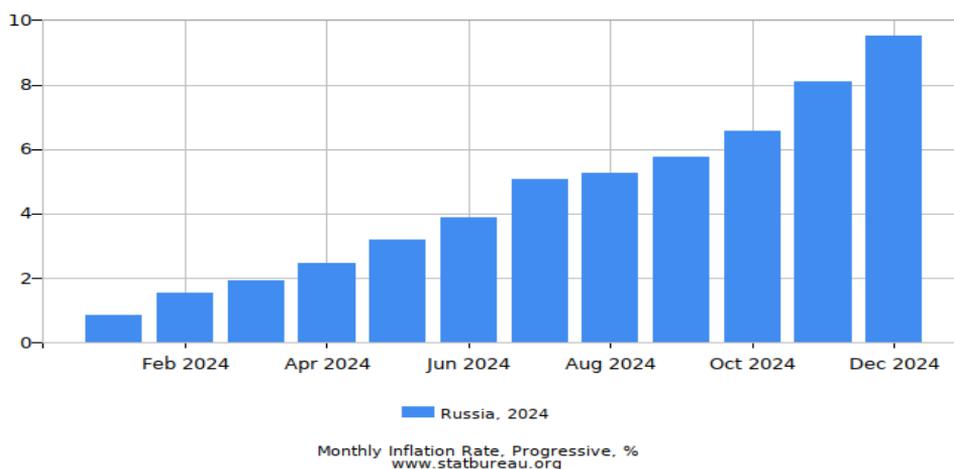
Source: Stat Bureau, 2025.

In terms of overall economic performance, however, Russia's economy continues to be susceptible to vulnerabilities. After a contraction of 2.1% in 2022, the country experienced a rebound with a growth of 3.6% in 2023. Nonetheless, the forecast for 2024

points to a deceleration, with anticipated growth of merely 1.5% – a slowdown primarily driven by stricter monetary policies and diminishing global demand.

Inflation has also risen sharply, prompting the Central Bank of Russia to increase the key interest rate to 21% in an attempt to stabilize the ruble and manage escalating domestic prices. These changes highlight the ongoing economic strain Russia endures due to international sanctions and inherent structural difficulties.

This figure demonstrates the growing economic pressure brought on by continued geopolitical tensions and makes it abundantly evident that Western sanctions have contributed significantly to the Russian economy's ongoing inflation. These sanctions have restricted access to necessary products and services and disrupted supply chains, especially those that target important industries like technology, energy, and finance. Because of this, the cost of living has been rising significantly, which has put more strain on both people and companies. Additionally, people's buying power is gradually declining due to the ongoing increase in inflation, which means they could purchase less with the same amount of money. One of the main drivers of domestic economic activity, consumer spending, may diminish as a result of this drop in real income. Such a situation will probably damage the economy's general stability over time, slow down economic development, and raise social inequality.

5 EMPIRICAL FRAMEWORK

Our empirical analysis is based on the Russian macroeconomic variables and the political impact of altering oil prices. We use this experience to analyze deeply a shock that mimics the sanctions against Russia. Hence, to know the existed effect of economic sanctions to the GDP growth in Russia Federation. In order to know the proper impact of sanctions to the economic growth we have used from the other independent variables as an example, FDI index, oil prices, currency exchange rate, inflation rate, export and import measurements during this period. All data except from the number of sanctions have been retrieved from the World Bank Data and the remained indicator was accepted from EU Sanctions Map. Granger causality and test employed to test the existence and direction of causality between the variables with help of statistical application STATA 18. This methodology has its roots in economics (Sims, 1980) and is also recognized as the effective tool for political measurement (Freeman et al., 1989). Because of insufficient data, the time series are quarterly proportioned dividing each year into four three years. Hence, the final result gave us 128 observations which made across Russia as a time series data. Because of insufficient data years are quarterly distributed in order to supply the significance of overall result.

Non-stationary time series results can lead to false correlations when used in econometric modelling (Dickey and Fuller, 1981). To check if the time series data is stationary, Augmented Dickey-Fuller (ADF) test is applied. The null hypothesis H_0 posits – series has a unit root i.e., series is non-stationary, while alternative hypothesis

suggests, H_1 – series has no unit root i.e., meaning it is stationary. Hence, the following intercept is considered:

$$\Delta Y_t = a_1 + a_2 San\_ind_t + a_3 San\_ent_t + a_{FDI}FDI_t + a_{INF}INF_t + a_{exp}Exp_t + a_{Imp}Imp_t + a_{Cur\_ex}Cur\_ex_t + a_{Oil\_p}Oil\_p_t + \mu t, \quad (1)$$

where Y_t is GDP Growth while San_ind_t, San_ent_t, FDI_t, INF_t, Exp_t, Imp_t, Cur_ex_t, Oil_p_t are the number of sanctions imposed for individulas, sanctions imposed for entities, FDI index, Inflation rate, amount of export and import, curency exchange rate in US dollars, Oil prices respectiveley and μt is the error term.

The VAR approach simplifies the process by using the past values of the endogenous variables in the system, avoiding needs of complexion of structural model. Instead, its focus is towards modeling each endogenous variable directly. The mathematical form of a VAR is as follows:

$$z_t = \binom{x_t}{y_t} = \beta + \beta_1 t + \sum_{i=1}^{k+1} A_t z_{t-1} + u_t; \quad (2)$$

$$A_t = \begin{vmatrix} a_{11} & a_{12} \\ a_{21} & a_{22} \end{vmatrix}; \quad (3)$$

$$\Delta GDP\_gr_t = \alpha + \sum_{i=1}^{k} \gamma_1 \Delta GDP\_gr_{t-1} + \sum_{i=1}^{k} \gamma_2 \Delta Sanct_{t-i} + \sum_{i=1}^{k} \gamma_3 \Delta Oil_{t-i} \sum_{i=1}^{k} \gamma_4 \Delta FDI_{t-i} + \sum_{i=1}^{k} \gamma_5 \Delta Inf_{t-i} + \sum_{i=1}^{k} \gamma_6 \Delta Currency_{t-i} + \sum_{i=1}^{k} \gamma_7 \Delta Import_{t-i} + \sum_{i=1}^{k} \gamma_8 \Delta Export_{t-i} u, \quad (4)$$

where in equation 4, $\gamma_1, \gamma_2, \gamma_3, \gamma_4, \gamma_5, \gamma_6, \gamma_7, \gamma_8$ are parameters to be estimated as a coefficient of the estimation and μ represent the serial error terms, and GDP_gr_t and $Sanc_t, Oil_t, FDI_t, Inf_t, Currency_t, Import_t, Export_t$ are defined observation for the *t* time periods; Δ is the differential operator; *k* refers to the number of lags.

6 RESULTS AND DISCUSSION

The primary objective of this study is to examine the impact of economic sanctions and other variables including oil price, inflation rate, currency exchange rate, FDI, export and import rate, on the development of the Central Asian economy. This section shows the results obtaining from the econometric methods, including descriptive statistics, lag model, a correlation matrix and VAR model. It is essential that economic sanction-related factors be incorporated into our study, as doing so provides a comprehensive understanding in which economic growth in the region is impacted by

sanctions, in addition to conventional factors such as oil price, inflation, currency exchange rate, FDI, export and import rate.

Below descriptive data for study's variables can be presented in Table 1. It indicates that Russian Federation experiences an average economic growth of 1.2. Likewise, the mean value for sanction among individuals is 546 while regarding with the entrepreneur it accounted for 117. Whereas the maximum was 419 and as a comparison the number of individual sanctions four times bigger. Table 2 also presents the high standard deviation for these pertinent variables.

Table 1: Descriptive statistics

Variable	Observations	Mean	Std. Dev.	Min.	Max.
GDP Growth	128	1.203	6.034	-14.531	10
Oil price	128	52.626	30.55	13.064	105.01
Inflation	128	56.572	160.184	.898	887.841
Exchange Currency	128	34.823	23.629	.418	85.162
FDI	128	19.347	24.657	-39.8	74.78
Export	128	31.575	7.472	23.083	62.322
Number of Sanctions Individual	40	427.7	545.98	132	1612
Number of Sanction Entrepreneur	40	91.4	117.543	28	419
Sanction Individual	128	.313	.465	0	1
Sanction Entrepreneur	128	.313	.465	0	1

Note: Sample: 1993q1 - 2023q4, Number of obs = 124
Endogenous: gdp_growth_interp oil_prus_interp inf_gdp_interp exchange_interp
fdius_b_interp exp_interp sanction_ind sanction_ent
Exogenous: _cons
z-statistics in parentheses
*** p<0.01, ** p<0.05, * p<0.1
Source: processed by author.

To test multicollinearity is very important for every study. If the variables are significantly correlated, it can make the results invalid. According to the result, GDP correlates positively with oil prices (0,448) that as oil production increases, GDP growth tends to increase as well. While the other variables like oil production (0,915) and Import (0,861) tend to be strong positively correlated with FDI indicating that oil production and FDI are both linked to higher imports. Overall, oil production, FDI and exports suggested the increases in these areas may reinforce economic growth while inflation (-0.560) and sanctions (-0.014, so slightly) appear to have a negative correlation with GDP growth. Both sanction variables seem to correlate with exchange rates and inflation, which may reflect economic conditions under sanctions.

Table 2: Correlation Matrix of the Variables

Variable	gdp_growth_int~p	lnoil_prus_int~p	lninf_gdp_interp	exchange_interp	lnfdius_b_interp	exp_interp	imp_interp	sanction_ind	sanction_ent
gdp_growth_int~p	1.000								
lnoil_prus_int~p	0.448	1.000							
lninf_gdp_interp	-0.560	-0.675	1.000						
exchange_interp	0.342	0.544	-0.651	1.000					
lnfdius_b_interp	0.524	0.915	-0.669	0.525	1.000				
exp_interp	-0.122	-0.397	0.581	-0.358	-0.472	1.000			
imp_interp	-0.515	-0.522	0.744	-0.497	-0.579	0.861	1.000		
sanction_ind	-0.014	0.320	-0.461	0.849	0.245	-0.337	-0.293	1.000	
sanction_ent	-0.014	0.320	-0.461	0.849	0.245	-0.337	-0.293	1.000	1.000

Source: processed by author.

Table 3: Unit root test

Variables at Level	ADF Test (P-Values)*	First Difference(P-Values)
GDP_Growth	-3.279 **	-11.167***
Sanctions_individuals	-0.664	-11,225***
Oil_Price	-1.562	-11.176***
Inflation_Rate	-6.185***	-11.317***
FDI	-2.522	-11.136***
Export	-4.255***	-11.264***
Import	-5.352***	-11.310***
Currency_exchange	0.025	-11.628***

Note: ** indicates significant at the 5 % level and *** at 1 % level.
Source: processed by author.

In the second step, augmented Dickey-Fuller (ADF) test was applied to check for unit root units in the level series, with the lag length determined by the automatic selection criterion shown in Table 2. As indicated in Table 3, the value of the three series (Inflation rate, export and import) was below 1 per cent at the first difference including the intercept in the test equation. Hence, this led to the rejection of the null hypothesis for inflation rate, exports, and imports, suggesting that these series become stationary. For remained variables, this null hypothesis could not be rejected, indicating they are likely non-stationary. Furthermore, it is necessary to find the optimal number of lags using vector autoregression (VAR).

Table 4 shows the various values for lags 0 and 4, including log L, LR, FPE, AIC, HQIC, SBIC. However, lag 4 had a larger negative value and according to AIC the lowest

values is at lag 4 (AIC=33,8466). So, 4 can be determined as lag length selection criteria and chosen to perform the other relevant tests as it provides the best trade-off between goodness of fit and complexity

Table 4: Results of lag lengh criteria

Lag	LL	LR	df	p	FPE	AIC	HQIC	SBIC
0	-2984.02				2.1e+12	48.2422	48.3069	48.4014
1	-2101.22	1765.6	49	0.000	3.0e+06	34.7939	35.3113*	36.0675*
2	-2075.89	50.664	49	0.408	4.5e+06	35.1756	36.1457	37.5637
3	-2030.71	90.349	49	0.000	4.9e+06	35.2373	36.6601	38.7399
4	-1895.49	270.45*	49	0.000	1.3e+06*	33.8466*	35.7221	38.4636

Note: AIC – Akaike's information criterion, FPE – final prediction error, HQIC – Hannan–Quinn information criterion, LR– sequential modified LR test statistics (each test at 5 % level), * – lag order.
Source: processed by author.

As shown in Table 5, the GDP growth exhibited a positive value of 0.450*** in the overall model, with a statistically significant P-value, indicating a robust relationship with the independent variables analyzed. The coefficient increases to 0.502*** before sanctions showing the stronger impact whereas because of changing economic environment it further rises to 1.24*** after the sanctions. This suggests that economic sanctions significantly affect GDP growth and further scholars, Hufbauer and Kim proved this tendency (Hufbauer and Kim, 2009). Regarding with the variable of sanctions, -3.203* overall and -4.47** after sanctions reveal a negative effect on GDP growth because of detrimental impact of sanctions. Sanctions sometimes lead to the economic isolation, limiting market and resource access, Pape also showed in his paper the negative affects of sanctions in economic measures (Pape, 1997).

Furthermore, the changes in oil price cause significantly negative changes in economic growth, overall, -0.5*, before -0.3*** and after sanctions -1.2**. Hence, research shows that sanctions can empower the situations related to the oil-reliant economies (Idrisov, Kazakova and Polbin, 2015) implementing the interaction of global oil price with domestic market. However, inflation results a positive coefficient of 0.25* while before sanction It accounted for only 0.124* but after inflation's influence became insignificant once sanctions are in place. This puzzling result can be more clarified through works like those of Dastgerdi, Yusof and Shahbaz (2018), who gave evidence for mixed effects of inflation depending on economic environment. Moreover, the indicator of FDI highlight high significance before sanctions (1.619**) but less so after (0.98**). This is the cause of many transnational companies at once decide to move their investment elsewhere due to increased risks in sanctioned which surely affect to economics, although trade sanctions are not as harmful. On other side, the positive impact of currency exchange rates (0.108**) and its vary before and post-sanctions shows that

currency stability play an important role in GDP growth. This is corresponding to the research from Wang et al., (2019) which included about a stable exchange rate guarantees foreign trade and provides a good external environment for economic development. Lastly, the coefficients for exports (0.272**) and imports (-0.618***) highlight the importance of trade balance. The negative impact of imports suggests that excessive reliance on foreign goods can be harmful, particularly under sanctions, as found in the work of Drezner (2011).

Table 5: Vector auto regression model

Variable	Overall Model	Before Sanctions	After Sanctions
GDP_growth	0.450***	0.502***	1.24***
Sanctions	-3.203*		-4.47**
Oil Prices	-0.5*	-0.3***	-1.2**
Inflation	0.2**	0.124*	0.3
FDI	0.700	1.619**	0.98**
Currency_exchange	0.108**	0.207***	0.154**
Export	0.272**	0.192*	0.132**
Import	-0.618***	-0.452**	-0.316***
Constant	5.254*	10.727*	6.880**
Observations	118	100	40

Source: processed by author.

7 CONCLUSION AND RECOMMENDATIONS

This study investigates the economic impact of international sanctions imposed on the Russian Federation over the period from 1993 to 2023. It focuses particularly on the role of the other countries' sanctions on Russia's economy- which includes GDP growth, oil price, inflation rate, FDI, the number of economic sanctions implied to individuals and entities. Using VAR model, the analysis explores the dynamic relationships among these variables within the framework of dependency theory. In particular, the results show that sanctions have had a negative and statistically significant effect on GDP growth, both overall and mainly in the period following the imposition of sanctions; the coefficient of GDP growth increased significantly after sanctions, indicating a shift in economic dynamics likely driven by sanctions-induced adjustments and external shocks; and FDI inflows were found to be negatively impacted by sanctions, supporting the evidence that increased geopolitical risk and economic uncertainty have discouraged foreign investment in the Russian economy.

The findings also reveal that fluctuations in oil prices have a considerable negative impact on economic growth, highlighting the vulnerability of oil-dependent nations to global oil market volatility. Similarly, whereas inflation was positively correlated with GDP growth prior to sanctions, its influence became statistically insignificant in the post-sanction period, showing the complicated relationship between

inflationary pressures and economic performance under sanctions. Finally, the results show that, while exports contribute positively to GDP growth, an overreliance on imports, particularly under sanctions, can have a negative impact on economic performance. These findings are consistent with previous research emphasizing the necessity of preserving trade balance and lowering reliance on imported goods in sanctions-affected countries.

The study's empirical findings provide valuable insights to policymakers on the factors that contribute to economic growth. Based on these insights, Russia is partially relied on Western's Market so that it should diversify their economic sector avoiding from hegemonic sector such as oil industry export. Russia should invest in tourism, technology, and agriculture to build an antifragile economy resilient to external shocks, including sanctions. Additionally, the sanctions exposed vulnerabilities in Russia's banking system, particularly after being cut off from SWIFT. To mitigate this, Russia must deepen its FinTech sector by expanding digital payment infrastructure, developing blockchain-based financial solutions, and enhancing cooperation with alternative financial networks like China's CIPS. This allowed us to address digital policy measures for overcoming negative effects of sanctions in Russia. Strengthening domestic financial institutions, encouraging cross-border settlements in national currencies, and fostering innovation in decentralized finance will help Russia maintain economic stability and independence from Western financial systems.

Furthermore, in Russia the trade relations should be fostered with non-sanctioning countries. Building a strong network of markets help to mitigate the strong effects of sanctions and oil price volatility on economic growth which means that it should strength economic and political cooperation with BRICS and Eurasian Customs Union (EACU) to search alternative economic opportunity. Russia can benefit also from it through increasing again competitiveness among domestic markets because the main policy response to the economic crisis is the policy of import substitution. This policy strengthens the sanctions since it is just another way of ensuring that domestic non-competitive producers get resources and makes the economy less competitive. Regarding with promoting stable currency, policymakers should think about the monetary policy that balance inflation under the control and stabilize the exchange rate while stable currency takes an importance of attracting FDI and trade activities. Moreover, the last and the most important suggestion is that Russia should engage in diplomatic efforts to minimize the impact of sanctions. Such as seeking international support that mitigate the negative effects. According to the research, assessing continuously the economic environment and impact of sanctions is essential. Policymakers should deeply analyze each macroeconomic indicator in order to define economic growth because currently even though trade surplus is positive in Russia, it does not mean Russians economy is growing.

The study has certain limitations which highlight opportunities further research in the future. First, it is limited by the availability time series data for specific variables from 1993 to 2023. The minimal number of observations hinders the statistical power of

the study, which may impair the accuracy and generalizability of the conclusions. A longer time series or extra data points would provide a more robust analysis. Second, by assuming linear relationships, VAR model may fail to capture structural breaks or nonlinear effects resulting from significant political or economic shocks like the COVID-19 pandemic, the annexation of Crimea in 2014, or the global financial crisis in 2008. The study does not examine regional or sectoral differences within Russia's economy; instead, it concentrates on overall economic data.

REFERENCES:

1. ARZOUMANIAN, S. (2023). Spillovers from Russia to neighboring countries: Transmission channels and policy options. [Online.] In: *IMF*, 2023. [Cited 10.1.2025.] https://doi.org/10.5089/9798400254871.001

2. BBC. (2024): What are the sanctions on Russia and have they affected its economy? [Online.] In: *BBC*, 2024. [Cited 10.1.2025.] Available online: <https://www.bbc.com/news/world-europe-60125659>.

3. BROWN, P. (2020): Oil Market Effects from U.S. Economic Sanctions: Iran, Russia, Venezuela. [Online.] In: *Congressional Research Service*, 2020. [Cited 14.1.2025.] Available online: <https://www.congress.gov/crs-product/R46213>.

4. DASTGERDI, H. G. – YUSOF, Z. B. – SHAHBAZ, M. (2018): Nexus between economic sanctions and inflation: a case study in Iran. In: *Applied Economics*, 2018, Vol. 50, No. 49, pp. 5316-5334. 10.1080/00036846.2018.1486988

5. DICKEY, D. A. – FULLER, W. A. (1981): Likelihood ratio statistics for autoregressive time series with a unit root. In: *Econometrica*, 1981, Vol. 49, No. 4, pp. 1057-1072. https://doi.org/10.2307/1912517

6. DREZNER, D. W. (1999): *The sanctions paradox: economic statecraft and international relations*. Cambridge: Cambridge University Press, 1999, 364 p. ISBN 0-521-64332-5. https://doi.org/10.1017/CBO9780511549366

7. DREZNER, D. W. (2011): Sanctions sometimes smart: targeted sanctions in theory and practice. In: *International Studies Review*, 2011, Vol. 13, No. 1, pp. 96-108. https://doi.org/10.1111/j.1468-2486.2010.01001.x

8. FREEMAN, J. R. – WILLIAMS, J. T. – LIN, T. M. (1989): Vector autoregression and the study of politics. In: *American Journal of Political Science*, 1989, Vol. 33, No. 4, pp. 842-877. https://doi.org/10.2307/2111112

9. GALBERT DE, S. (2015): *A Year of Sanctions against Russia—Now What?: A European Assessment of the Outcome and Future of Russia Sanctions*. Washington, DC: Center for Strategic & International Studies, 2015. 42 p. ISBN 978-1-4422-5893-8.

10. GALTUNG, J. (1967): On the effects of international economic sanctions, with examples from the case of Rhodesia. In: *World politics*, 1967, Vol. 19, No. 3, pp. 378-416. https://doi.org/10.2307/2009785

11. GHOMI, M. (2022): Who is afraid of sanctions? The macroeconomic and distributional effects of the sanctions against Iran. In: *Economics & Politics*, 2022, Vol. 34, No. 3, pp. 395-428. https://doi.org/10.1111/ecpo.12203

12. GOODLAND, R. – LEDEC, G. (1987): Neoclassical economics and principles of sustainable development. In: *Ecological modelling*, 1987, Vol. 38, No. 1-2, pp. 19-46. https://doi.org/10.1016/0304-3800(87)90043-3

13. HUFBAUER, G. – KIM, J. (2009): International competition policy and the WTO. In: *The Antitrust Bulletin*, 2009, Vol. 54, No. 2, pp. 327-335. https://doi.org/10.1177/0003603X0905400205

14. IDRISOV, G. – KAZAKOVA, M. – POLBIN, A. (2015): A theoretical interpretation of the oil prices impact on economic growth in contemporary Russia. In: *Russian Journal of Economics*, 2015, Vol. 1, No. 3, pp. 257-272. https://doi.org/10.1016/j.ruje.2015.12.004

15. KASYMOV, S. (2012): Statism in Russia: The implications for US–Russian relations. In: *Journal of Eurasian Studies*, Vol. 3, No. 1, pp. 58-68. https://doi.org/10.1016/j.euras.2011.10.007

16. MACK, A. – KHAN, A. (2000): The efficacy of UN sanctions. In: *Security Dialogue*, 2000, Vol. 31, No. 3, pp. 279-292. https://doi.org/10.1177/0967010600031003003

17. MAYALL, J. (1984): The sanctions problem in international economic relations: Reflections in the light of recent experience. In: *International Affairs*, 1984, Vol. 60, No. 4, pp. 631-642. https://doi.org/10.2307/2620046

18. MEYER, K. E. – FANG, T. – PANIBRATOV, A. Y. – PENG, M. W. – GAUR, A. (2023): International business under sanctions. In: *Journal of World Business*, Vol. 58, No. 2. https://doi.org/10.1016/j.jwb.2023.101426

19. MORGAN, T. C. – SYROPOULOS, C. – YOTOV, Y. V. (2023): Economic sanctions: Evolution, consequences, and challenges. In: *Journal of Economic Perspectives*, 2023, Vol. 37, No. 1, pp. 3-29. https://doi.org/10.1257/jep.37.1.3

20. NBC. (2022): Russia stored large amounts of money with many countries. Hundreds of billions of it are now frozen. [Online.] In: *NBC News*, 2022. [Cited 10.1.2025.] Available online: <https://www.nbcnews.com/data-graphics/russian-bank-foreign-reserve-billions-frozen-sanctions-n1292153>.

21. NEUENKIRCH, M. – NEUMEIER, F. (2015): The impact of UN and US economic sanctions on GDP growth. In: *European Journal of Political Economy*, 2015, Vol. 40, pp. 110-125. https://doi.org/10.1016/j.ejpoleco.2015.09.001

22. NUSRATULLIN, I. – YARULLIN, R. – ISMAGILOVA, T. – EREMEEVA, O. – ERMOSHINA, T. (2021): Economic and financial results of the USA and the European Union sanctions war against Russia: first results. In: *Cuestiones Políticas*, 2021, Vol. 39, No. 68, pp. 251-272. https://doi.org/10.46398/cuestpol.3968.16

23. OXENSTIERNA, S. – OLSSON, P. (2015): The economic sanctions against Russia. [Online.] In: *UNHCR*, 2015. [Cited 10.1.2025.] Available online: <https://sanctionsplatform.ohchr.org/record/21058>.

24. ÖZDAMAR, Ö. – SHAHIN, E. (2021): Consequences of economic sanctions: The state of the art and paths forward. In: *International Studies Review*, 2021, Vol. 23, No. 4, pp. 1646-1671. https://doi.org/10.1093/isr/viab029

25. PAPE, R. A. (1997): Why economic sanctions do not work. In: *International security*, 1997, Vol. 22, No. 2, pp. 90-136. https://doi.org/10.1162/isec.22.2.90

26. PEKSEN, D. – DRURY, A. C. (2010): Coercive or corrosive: The negative impact of economic sanctions on democracy. In: *International Interactions*, 2010, Vol. 36, No. 3, pp. 240-264. https://doi.org/10.1080/03050629.2010.502436

27. SIMON, L. H. – RUCCIO, D. F. (1986): A methodological analysis of dependency theory: Explanation in Andre Gunder Frank. In: *World Development*, 1986, Vol. 14, No. 2, pp. 195-209. https://doi.org/10.1016/0305-750X(86)90052-5

28. SIMS, C. A. (1980): Macroeconomics and reality. In: *Econometrica: Journal of the Econometric Society*, 1980, Vol. 48, No. 1, pp. 1-48. https://doi.org/10.2307/1912017

29. SINGH, K. – VASHISHTHA, S. (2020): Does any relationship between energy consumption and economic growth exist in India? A var model analysis. In: *OPEC Energy Review*, 2020, Vol. 44, No. 3, pp. 334-347. https://doi.org/10.1111/opec.12185

30. STEPANYAN, A. – ROITMAN, A. – MINASYAN, G. – OSTOJIC, M. D. – EPSTEIN, M. N. P. (2016): The spillover effects of Russia's economic slowdown on neighboring countries. [Online.] In: *IMF*, 2016. [Cited 10.1.2025.] Available online: <https://www.imf.org/en/publications/departmental-papers-policy-papers/issues/2016/12/31/the-spillover-effects-of-russias-economic-slowdown-on-neighboring-countries-43389>.

31. THE WHITE HOUSE. (2015): Remarks by the President in State of the Union Address, January 20, 2015. [Online.] In: *The White House*, 2015. [Cited 10.1.2025.] Available online: <https://obamawhitehouse.archives.gov/the-press-office/2015/01/20/remarks-president-state-union-address-January-20-2015>.

32. TORBAT, A. E. (2005): Impacts of the US trade and financial sanctions on Iran. In: *World Economy*, 2005, Vol. 28, No. 3, pp. 407-434. https://doi.org/10.1111/j.1467-9701.2005.00671.x

33. TUZOVA, Y. – QAYUM, F. (2016): Global oil glut and sanctions: The impact on Putin's Russia. In: *Energy Policy*, 2016, Vol. 90, pp. 140-151. https://doi.org/10.1016/j.enpol.2015.12.008

34. WANG, Y. – WANG, K. – CHANG, C. P. (2019): The impacts of economic sanctions on exchange rate volatility. In: *Economic Modelling*, 2019, Vol. 82, pp. 58-65. https://doi.org/10.1016/j.econmod.2019.07.004

35. WTO. (2015): Trade Profiles 2015.[Online.] In: *WTO*, 2015. [Cited 10.1.2025.] Available online: <https://www.wto.org/english/res_e/booksp_e/trade_profiles15_e.pdf>.