

Nikolay Megits¹
Zoran Wittine²
Julian Schuster³
Daniel Francois Meyer⁴

JEL Classification: F15, F18, F51, F59
Original scientific paper
<https://doi.org/10.32910/ep.76.5.4>

Shift in European-Central Asian Trade Dynamics due to US-EU Sanctions on Russia

Abstract

This study examines the evolving trade patterns between the European Union (EU) and four Central Asian (CA) countries—Kazakhstan, Kyrgyzstan, Uzbekistan, and Armenia—in response to US-EU sanctions on Russia. As sanctions disrupt traditional trade flows, particularly in oil and agriculture, these countries of Central Asia emerge as a crucial alternative for diversifying and strengthening Europe's trade frameworks. Central Asia's strategic importance has grown as Europe seeks to reduce its reliance on Russia, focusing on energy security and sustainability. However, the persistent influence of Russia complicates these potential partnerships. The study utilizes a mixed-methods approach, combining quantitative analysis of trade data based on Time Series and an autoregressive distributed lag (ARDL) econometric model that analyzes the relationship between key variables and a qualitative review of trade practices over 2000-2023. The study concludes that while sanctions present immediate challenges, they also offer long-term strategic benefits by fostering a more diversified and resilient trade network. The paper calls for the EU and US to actively engage in this realignment through economic diplomacy efforts, investments, and multilateral cooperation, aiming to build a trade architecture that supports democratic values, human rights, and long-term global economic sustainability.

Keywords: ARDL, Central Asia, EU, trade sanctions, Time Series Analysis, Russia, Ukraine

¹ N. Megits, Ph.D., Professor, Webster University, St. Louis, MO, USA, University of Johannesburg, South Africa (e-mail: nikolaymegits45@webster.edu).

² Z. Wittine, Ph.D., Associate professor, Faculty of Economics and Business, University of Zagreb, Croatia (e-mail: zwittine@efzg.hr). Corresponding Author.

³ J. Schuster, Ph.D., Professor, Webster University, St. Louis, MO, USA (e-mail: julianschuster@gmail.com).

⁴ D. Francois Meyer, Ph.D., Professor, University of Johannesburg, South Africa (e-mail: dfmeyer@uj.ac.za).

The paper was received on 27.09.2024. It was accepted for publication on 05.07.2025.

1. INTRODUCTION

The imposition of broad US-EU sanctions on Russia in response to its military invasion of Ukraine has profoundly shifted global trade dynamics. Since 2014, the United States has imposed over 1,500 sanctions targeting individuals, entities, and sectors such as finance, energy, defense, and technology (OFAC, 2024) in addition to. These measures include asset freezes, travel bans, and export restrictions, aiming to pressure Russia over its actions in Ukraine and other international concerns (Riley, 2023; Mahlstein et al., 2022). However, sanctions have also negatively impacted the EU economy, as Darmayadi and Megits (2023) highlight, particularly in inflation, trade rebalancing, and strategic responses.

Historically, Russia has been a key trade partner for the European Union, with substantial economic interdependence in energy, agriculture, and manufacturing. In 2019, the EU was Russia's largest investor, holding €311.4 billion in outward FDI stock, while Russia's FDI stock in the EU amounted to €136 billion. However, comprehensive sanctions have forced the EU to reassess and realign its trade relationships, seeking alternative partners to mitigate economic fallout and secure strategic interests (Burmester, 2022).

Central Asia, comprising Kazakhstan, Kyrgyz Republic, Tajikistan, Turkmenistan, and Uzbekistan, has emerged as a viable alternative trade partner for the EU. The region's natural resources and strategic geographic position present opportunities for the EU to diversify dependencies and strengthen economic security (Böttger & Plottka, 2018). Additionally, Central Asia's role as a bridge to China, Afghanistan, and the Middle East enhances its importance (Hoh, 2019). However, these countries also play a significant role in helping Russia circumvent sanctions. For instance, Kazakhstan has increased exports to Russia, including re-exports of goods from China and Western nations, such as microelectronics and mechanical engineering equipment essential for Russia's military efforts (Ambrosio & Vasiliev, 2023). Factors like the Eurasian Economic Union's (EAEU) unified customs space, free ruble conversion, and high corruption levels facilitate such activities (Knobel, 2019).

This dual role of Central Asia—as a strategic partner for the EU and a facilitator of Russia's circumvention of sanctions—complicates its significance. Bakhtairova (2019) explores economic cooperation challenges within the Eurasian Economic Union (EAEU), while Timofeev (2023) questions the effectiveness of sanctions. Tarr (2016) further examines the potential of the integration of the EAEU in the post-Soviet space.

This research explores further but broader economic and geopolitical implications of these shifts, addressing critical questions surrounding the effectiveness and consequences of sanctions and evolving trade dynamics:

- **RQ1:** How have the US-EU sanctions on Russia affected the traditional trade flows between the EU and Russia?
- **RQ2:** What are the emerging trade patterns between the EU and Central Asian countries in the aftermath of these sanctions?
- **RQ3:** What are the strategic opportunities and challenges for the EU in deepening its economic ties with Central Asia?
- **RQ4:** How can the EU mitigate the geopolitical risks associated with increased dependence on Central Asia?

2. LITERATURE REVIEW

This literature review explores the multifaceted impacts of sanctions on Russia, highlights Central Asia's economic potential, and evaluates evolving trade relations between the EU and Central Asia within a cohesive analytical framework. It synthesizes relevant studies to clarify how sanctions have reshaped geopolitical and economic dynamics, explores Central Asia's strategic role amid these shifts, and reviews econometric approaches used in assessing these complex trade interactions.

Prior to sanctions, Russia played a central role in Europe's economic landscape, particularly in energy and agriculture. According to Hilgenstock, Ribakova, and Wolff (2023), this interdependency was crucial for European energy security. However, the imposition of comprehensive sanctions by the US and EU, targeting finance, energy, and critical sectors of trade, significantly disrupted these traditional economic relationships. Pylin (2022) emphasizes the significant contraction in Russia's

economic output and subsequent shift towards alternative Asian markets. Klomp (2020) notes that sanctions triggered substantial volatility in agricultural commodity futures within the EU, illustrating broader geopolitical repercussions. Furthermore, Giumelli, Hoffmann, and Książczaková (2020) provide an in-depth analysis of the EU's sanctions strategy, detailing its diplomatic leverage and geographic scope, ultimately impacting global security dynamics. Nusratullin et al. (2021) add that the sanctions profoundly weakened Russia's financial stability, prompting the formation of new trade alliances. Arzhaev (2023) complements this perspective by illustrating how Russia strategically adapted to sanctions through strengthening economic ties with Central Asia, thereby preserving its geopolitical influence and mitigating some adverse effects.

Sanctions introduced by the EU specifically targeted dual-use technologies, financial transactions, and critical infrastructures, further isolating Russia economically. Restrictions on Russian banks via the SWIFT network and prohibitions against the export of sensitive technologies created significant barriers, as detailed by the European Commission (2024). These actions highlight sanctions' complex roles in reshaping global trade structures, with immediate disruptions evolving into enduring economic and geopolitical shifts. Amid these developments, Central Asia emerged as an increasingly important economic region due to its vast natural resources and strategic geographic positioning between Europe and Asia. Moldashev (2023) underscores Central Asia's heightened global trade significance following sanctions-induced disruptions. Shamilov and Bukovskis (2021) further contextualize the EU's intensified interest in Central Asia by examining the strategic motivations and challenges underlying the EU's revised regional strategy. They emphasize Central Asia's potential as a key area for promoting regional stability, economic cooperation, and sustainable development, reflecting the EU's broader strategic objectives.

This increased engagement between the EU and Central Asia, outlined in studies by Abel (2023) and Pomfret (2022), reveals the EU's recognition of Central Asia's potential for economic diversification and growth, despite political instability and infrastructural barriers. Pomfret

specifically identifies how EU initiatives have strategically enhanced Central Asia's economic landscape through targeted investments and development policies. Moreover, the broader implications of sanctions on global trade dynamics and regional economic frameworks have been analyzed by Dong and Li (2018), who utilize a game-theoretic approach. Their work clarifies the complexities and unintended economic consequences of sanctions among major global players. Kim (2022) offers complementary insights from a legal perspective, detailing how sanctions challenge international trade frameworks and regional economic interactions, specifically within the Caucasus-Central Asian corridor.

Reflecting these dynamics, the European Parliament's (2024) "New Central Asia Strategy" underscores the EU's strategic priorities of sustainable development, democracy, and human rights promotion, highlighting strengthened regional engagement through high-level policy dialogues and collaborative economic initiatives. This strategic realignment, driven by sanctions-induced trade shifts, positions Central Asia as a critical region for European economic and geopolitical interests.

As indicated in the research above, econometric modeling, specifically through time-series analysis and Autoregressive Distributed Lag (ARDL) methods, has proven particularly effective in capturing these dynamic trade relationships. These methods offer robust analytical tools for understanding the short-term adjustments and long-run equilibrium in trade data, enhancing insights into policy impacts and economic transitions. Thus, the ARDL approach provides critical methodological clarity and analytical depth necessary for assessing the evolving economic and geopolitical landscape between the EU, Russia, and Central Asia. These analyses collectively underscore the complexities of EU-Central Asia trade relations in a shifting geopolitical landscape shaped by sanctions and strategic realignments.

3. RESEARCH METHODOLOGY

This study uses a mixed-methods approach, combining quantitative analysis of trade data with a review of trade policies and academ-

Table 1: Data Reflecting European, Russia, and Central Asia Economics and Political Relations

Year	EU Export to Central Asia Volume (B USD)	Central Asia Export to Russia (B USD)	EU Sanctions Volume (at the end of year)	Russia GDP World Bank (B USD)	Political Risk Russia (0-100)
	EUEXPCA	CAEXRUS	SANRUS	RUSGDP	POLRISRUS
2000	2.16	2.48	0.00	259.71	54.00
2001	2.44	2.44	0.00	306.61	58.00
2002	2.61	1.98	0.00	345.47	63.50
2003	3.37	2.64	0.00	430.35	65.50
2004	4.12	3.66	0.00	591.02	69.00
2005	5.84	4.08	0.00	764.02	67.50
2006	7.85	5.29	0.00	989.93	67.50
2007	10.49	6.55	0.00	1,299.71	65.50
2008	11.06	8.05	0.00	1,660.85	66.50
2009	9.79	4.69	0.00	1,222.65	63.50
2010	9.55	4.94	0.00	1,524.92	64.00
2011	11.51	9.78	0.00	2,045.92	62.00
2012	11.83	8.64	0.00	2,208.29	59.50
2013	13.18	7.62	0.00	2,292.47	58.00
2014	12.44	7.68	160.00	2,059.24	56.50
2015	9.51	5.51	186.00	1,363.48	55.50
2016	8.15	4.81	189.00	1,276.79	56.50
2017	8.69	6.89	188.00	1,574.19	56.50
2018	10.76	7.91	199.00	1,657.33	59.00
2019	11.11	8.71	214.00	1,699.88	59.50
2020	10.24	7.57	219.00	1,693.12	58.50
2021	10.29	9.91	233.00	1,843.39	58.50
2022	18.01	14.87	1,557.00	2,266.03	55.00
2023	23.06	16.94	1,943.00	2,021.42	54.00

Source: UN ComTrade Database; Statista Sanctions Report; World Bank Group -GDP Report; The PRS Group: The International Country Risk Guide. (All obtained on November 10, 2023)

ic research. The quantitative analysis applies Time Series methods, using e-Views software to run ARDL Long Run Form and Bounds Test Regression. This method effectively captures

both short- and long-term relationships, making it suitable for analyzing trade dynamics between the EU, Russia, and Central Asia. Data from 2000 to 2023 were sourced from organi-

zations like Eurostat, IMF, World Bank, and UN ComTrade, including trade volumes, political risk scores, and trends before and after Russian sanctions. Descriptive statistics and trend analysis highlight changes in trade patterns. The ARDL approach allows for a comprehensive understanding of the shifting trade landscape, analyzing the interplay of sanctions and regional economic interactions with data summarized in Table 1. Furthermore, it enables the identification of cointegration relationships, providing insights into the long-term effects of sanctions and emerging trade patterns.

The qualitative analysis involves a review of existing trade policies and academic literature to contextualize the quantitative findings. This includes an examination of the geopolitical implications of the shifts in trade dynamics and the potential challenges and opportunities for the EU.

4. ANALYSIS AND FINDINGS DISCUSSION

4.1. Value of Time Series and ARDL Regression as Econometric Models in Trade Analysis Research

Researchers widely employ Time-series and ARDL (Autoregressive Distributed Lag) methods to evaluate international trade dynamics. The Time Series technique was used to analyze historical trade data to identify patterns, trends, and relationships between variables such as exports, imports, GDP, exchange rates, and sanctions. The ARDL approach, introduced by Pesaran and Shin in 1998, is particularly effective for analyzing short- and long-term relationships between trade variables. As indicated below, researchers use ARDL to examine trade liberalization impacts, J-curve effects, and economic interdependencies, offering robust insights into trade policies, regional dynamics, and the effects of geopolitical factors. For example, in "The Impact of War on Trade," Anderton and Carter justify the use of Time Series methods by leveraging the ability to analyze trade data across pre-war, wartime, and post-war periods, capturing structural changes and disruptions caused by war. Interrupted time-series analysis identifies shifts in trade trends, allowing the authors to isolate

the impact of war events while controlling for underlying economic conditions. This approach ensures robust insights into temporal trade dynamics amidst geopolitical disruptions.

In Mounir Belloumi's (2014) article, the ARDL model was justified due to its ability to analyze long-run relationships between trade, FDI, and economic growth, even when variables exhibit mixed integration orders. The ARDL bounds testing methodology allowed robust estimation without requiring pre-testing for unit roots. Additionally, it effectively captured both short- and long-run dynamics, making it suitable for the study's objective of evaluating Tunisia's economic interactions over time with flexibility in lag selection. Tatif et al. (2015), in their article, analyzed the nexus between savings and investment in the three Asian economies" and justified the use of the ARDL model due to its ability to handle variables with mixed integration orders. The authors highlighted ARDL's robustness in analyzing short- and long-run dynamics simultaneously, making it suitable for examining the savings-investment relationship. Its bounds-testing approach provided a reliable framework for assessing cointegration, even with small sample sizes. Kurniawan and A'yun (2022) explained using the ARDL model due to its ability to analyze relationships between variables with mixed levels of integration ($I(0)$ and $I(1)$) without requiring pre-differencing. The ARDL approach allowed them to assess both the short- and long-term effects of exports and foreign direct investment (FDI) on economic growth in Indonesia. Additionally, its suitability for small sample sizes and the ability to model dynamic adjustments made it ideal for their dataset spanning limited observations.

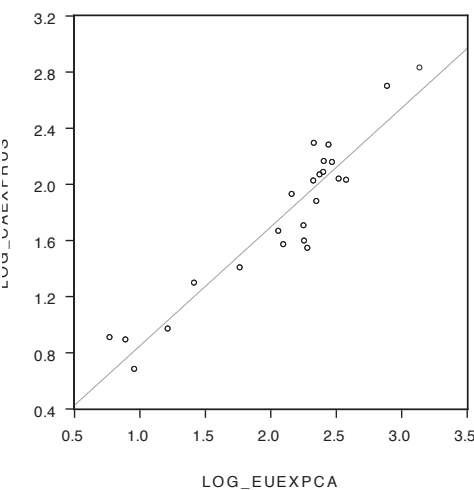
The article by Meyer (2022) used the ARDL model due to its ability to analyze relationships among domestic investment, country risk, governance, and economic development while accommodating variables with different integration orders. The ARDL model's strengths in small sample sizes and its capability to estimate both short- and long-run dynamics made it ideal for comparing Kazakhstan and Poland. This approach effectively captured the countries' unique economic structures and governance influences on investment and development.

The combination of Time Series analysis and the ARDL model is highly effective because it can handle both stationary and non-stationary variables, uses flexible lag structures, and applies the reliable bounds-testing approach to identify long-term relationships. These features make it a popular choice for studying complex economic connections in international trade and macroeconomics.

4.2. Time Series Analysis

As shown in Graph 1, the scatterplot depicts the relationship between LOG_EUEXPCA (log-transformed EU exports to Central Asia) and LOG_CAEXPRUS (log-transformed Central Asia exports to Russia). The points are tightly clustered along the red trendline, indicating a strong positive linear relationship. As EU exports to Central Asia increase, Central Asia's exports to Russia also rise proportionally, demonstrating interdependent trade dynamics. The linearity suggests consistent proportional growth, implying that Central Asia acts as both a consumer of EU exports and a supplier to Russia. This pattern reflects the region's strategic role in linking European and Russian economies despite geopolitical and economic shifts.

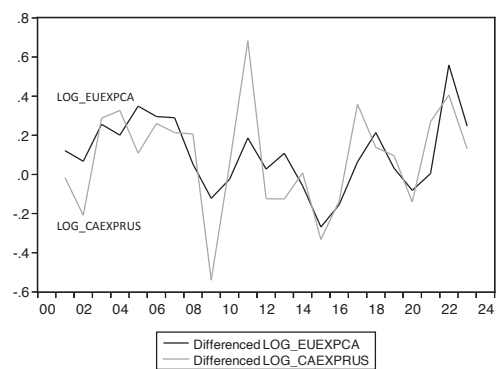
Graph 1: Linear relationship between LOG_EUEXPCA (log of EU exports to Central Asia) and LOG_CAEXPRUS (log of Central Asia exports to Russia) (2000 - 2023)



Graph 2 illustrates the year-over-year changes (dif-

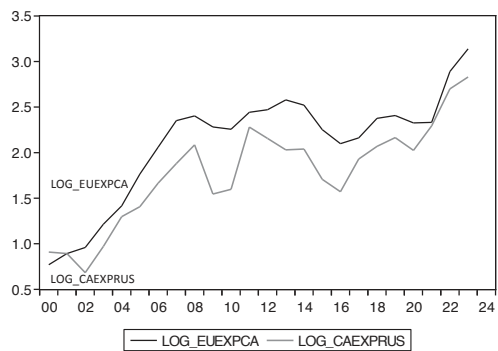
ferences) in LOG_EUEXPCA (EU exports to Central Asia) and LOG_CAEXPRUS (Central Asia exports to Russia). Both series exhibit fluctuations, with notable volatility around 2008 (global financial crisis) and post-2021 (sanctions-driven trade shifts). The synchronized movements suggest interdependence, where changes in EU-Central Asia trade align with Central Asia-Russia trade dynamics.

Graph 2: Alignment of EU-Central Asia trade with Central Asia-Russia trade dynamics (2000 - 2023)



Graph 3 displays parallel upward trends in LOG_EUEXPCA (EU exports to Central Asia) and LOG_CAEXPRUS (Central Asia exports to Russia) from 2000 to 2023, reflecting interlinked trade dynamics. Notable growth occurs post-2021, driven by EU sanctions on Russia and trade realignment. Despite fluctuations, both variables exhibit sustained increases, highlighting Central Asia's strategic trade role between the EU and Russia.

Graph 3: Trends in LOG_EUEXPCA (EU exports to Central Asia) and LOG_CAEXPRUS (Central Asia exports to Russia) (2000 - 2023)



According to Table 2, on average, the log-transformed EU exports to Central Asia (2.10) are higher than the log-transformed Central Asia exports to Russia (1.78). This suggests that, in absolute terms, EU exports to Central Asia are larger than Central Asia's exports to Russia over the observed period.

Table 2: Descriptive Statistics of EU Exports to Central Asia and Central Asia Exports to Russia (Log-Transformed Values)

	LOG_EUEXPCA	LOG_CAEXPRUS
Mean	2.098555	1.780178
Median	2.303832	1.904768
Maximum	3.138100	2.829678
Minimum	0.770108	0.683097
Std. Dev.	0.617630	0.554767
Skewness	-0.865595	-0.260632
Kurtosis	2.953518	2.532465
Jarque-Bera	2.999182	0.490304
Probability	0.223221	0.782586
Sum	50.36532	42.72428
Sum Sq. Dev.	8.773732	7.078631
Observations	24	24

As we see, the median values, slightly higher than the means, indicate that the data for both variables is somewhat skewed, with higher values for trade volumes more frequently occurring. The observed patterns of the Time Series analysis suggest strategic growth in EU exports to Central Asia and stable yet dependent trade flows from Central Asia to Russia.

4.3. ARDL Long-Run Form and Bounds Test Regression Analysis

ARDL modeling, as shown in Table 3, allowed for the understanding of how geopolitical shifts and

economic policies influence traditional trade flows, offering valuable policy implications for EU strategies in mitigating risks and enhancing Central Asian trade partnerships.

The long run results are indicated in Table 3 in the bottom half of the table, and the equation is listed as equation (1). All of the independent variables have a significant impact on the dependent variable (Russian GDP) at 5% or 10% significance levels. Rising political risks have the highest impact with a coefficient of 2.7%, while sanctions have the lowest but negative coefficient and impact of only 0.27%. This means a 1% increase in the level of sanctions has a 0.27% impact on GDP growth in Russia. An increase of 1% in exports to Russia from Central Asian countries could lead to GDP growth in Russia of 0.89%. The error correction model is negative and significant, indicating the confirmation of a long-run relationship between the selected variables.

Equation (1):

$$\text{LOG_RUSGDP} = -0.2674 \cdot \text{LOG_SANCRUS} + 2.7446 \cdot \text{LOG_POLRISKRUS} + 0.8926 \cdot \text{LOG_CAEXPRUS} + 18.176 \dots \dots \dots (1)$$

From the result of the **Long-Run Dynamics**, equation 1 explores the equilibrium relationship between GDP and explanatory variables. A Sanctions (LOG_SANCRUS) coefficient of -0.267 confirms sanctions' persistent negative impact on Russia's GDP, imposing long-term economic strain. A Political Risk (LOG_POLRISKRUS) coefficient of 2.744 underscores the importance of political stability, which boosts investor confidence and economic growth. A Central Asia Exports (LOG_CAEXPRUS) coefficient of 0.893 demonstrates Central Asia's significant contribution to Russia's GDP, emphasizing its vital trade role. Finally, the Intercept (C) indicates that the constant term (18.176) provides a baseline GDP estimate independent of other variables.

The F-Bounds Test for Long-Run relationship with the F-statistic (359.8993) significantly exceeds the critical upper bound at all confidence levels, confirming a robust long-term relationship between GDP and the independent variables. This validates the robustness of the ARDL model.

Table 3: ARDL Long-Run, Error Correction Analysis and Short-Run Analysis: Impact of Sanctions, Political Risk, and Central Asia Exports on Russia's GDP

Conditional Error Correction Regression (short-run)				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	42.56004	5.848642	7.276909	0.0869**
D(LOG_SANCRUS)	-0.333485	0.052243	-6.383301	0.0989**
D(LOG_POLRISKRUS)	4.732712	0.704805	6.714922	0.0941**
D(LOG_CAEXPRUS)	0.895023	0.066581	13.44271	0.0473*
* p-value incompatible with t-Bounds distribution.				
Levels Equation				
Restricted Constant and No Trend				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
LOG_SANCRUS	-0.267437	0.016855	-15.86728	0.0401*
LOG_POLRISKRUS	2.744598	0.253303	10.83523	0.0586**
LOG_CAEXPRUS	0.892635	0.034221	26.08444	0.0244*
C	18.17657	1.050290	17.30624	0.0367*
F-Bounds Test		Null Hypothesis: No levels relationship		
Test Statistic	Value	Signif.	I(0)	I(1)
			Asymptotic: n=1000	
F-statistic	359.8993	10%	2.37	3.2
k	3	5%	2.79	3.67
		2.5%	3.15	4.08
		1%	3.65	4.66

Note: * indicates statistical significance at 5%, while ** indicates statistical significance at 10%. The ARDL Long-Run Form and Bounds Test examined the impact of sanctions (LOG_SANCRUS), political risk (LOG_POLRISKRUS), and Central Asia exports to Russia (LOG_CAEXPRUS) on Russia's GDP (LOG_RUSGDP).

Regarding the Short-Run Dynamics, results show that all three independent variables have a significant impact at either the 5% or 10% levels. Sanctions (D(LOG_SANCRUS)) have a significant negative coefficient (-0.333), indicating that sanctions have an immediate and suppressive effect on Russia's GDP, consistent with their economic objectives. Also, Political Risk (D(LOG_

POLRISKRUS)) with a positive coefficient (4.733) implies that higher political risk scores (indicating greater stability) provide short-term economic benefits. Finally, Central Asia Exports (D(LOG_CAEXPRUS)) with a positive and highly significant coefficient (0.895), trade flows from Central Asia are critical in mitigating short-term economic challenges for Russia.

This ARDL analysis demonstrated that sanctions, political stability, and Central Asia's trade relations are pivotal in shaping Russia's GDP dynamics and proved the following:

- **Sanctions:** Both short- and long-term effects suppress GDP, achieving their intended disruption.
- **Central Asia's Role:** Trade with Central Asia acts as an economic buffer during sanctions.
- **Political Stability:** Stability significantly supports economic growth.
- **Economic Persistence:** GDP dynamics are influenced by past trends, with delayed but lasting effects from policies and shocks.

This analysis highlights the interconnected impacts of sanctions, stability, and trade on Russia's economy.

4.4. Impact of Sanctions on EU-Russia Trade Relations

The analysis reveals that the US-EU sanctions on Russia have led to a significant decline in trade between the EU and Russia. Prior to the sanctions, Russia was one of the EU's largest trade partners, particularly in the energy sector. However, the sanctions have forced the EU to reduce its dependence on Russian energy and seek alternative sources. Data from Eurostat indicate that the total trade in goods between the EU and Russia declined by over 437% when compared to 2020. This decline was most pronounced in the energy sector, where the EU's imports of Russian oil and gas fell by over 53% (Eurostat – Data Browser, 2024).

In response to the disruptions in EU-Russia trade, Central Asia has emerged as a significant alternative partner for the EU. The quantitative analysis shows a marked increase in trade between the EU and Central Asian countries, particularly in sectors such as energy, agriculture, and manufacturing. Trade data reveal that exports from Central Asia to the EU increased by 67% in 2023, with a significant portion of these exports consisting of energy resources such as oil and gas. Similarly, EU exports to Central Asia grew by 77%, reflecting the region's increasing importance as a trade partner (Eurostat – Data Browser, 2024).

The shift in trade dynamics presents several

strategic opportunities for the EU. Central Asia's rich resource base, combined with European technological expertise, offers the potential for deepening economic ties in sectors such as energy, agriculture, and manufacturing. One of the most significant opportunities for the EU lies in enhancing its energy security through increased imports from Central Asia. By diversifying its energy sources, the EU can reduce its dependence on Russian energy and mitigate the risks associated with geopolitical instability. Central Asia's economies, which have traditionally been dependent on a narrow range of exports, stand to benefit from increased trade with the EU. European investment and technological expertise can help these countries diversify their economies and build more resilient economic structures.

Analyzing the Eurostat-Data Browser (2024) reports, we can state that the sanctions imposed by the EU on Russia have led to a significant disruption in their trade relations. The numbers presented above highlight the deep economic interdependence between the EU and Russia prior to the sanctions. However, the sanctions have forced the EU to seek alternative trade partners and reduce its reliance on Russian imports, particularly in the energy sector.

However, it is essential to investigate various geopolitical factors that influence and affect the economy of CA countries due to sanctions.

4.4.1. Russian Factor in the Region

One of the most significant challenges to the EU's efforts in Central Asia is the solid geopolitical influence exerted by Russia. Historically, Russia has maintained deep ties with the Central Asian countries, rooted in shared history, cultural connections, and strategic alliances, particularly through organizations like the Eurasian Economic Union (EAEU) and the Collective Security Treaty Organization (CSTO).

Russia's influence in the region is multifaceted, including economic, political, and military dimensions. Economically, Russia remains a major trade partner and investor in Central Asia, particularly in the energy and natural resources sectors. Politically, Russia's involvement in

the region’s affairs often aligns with its broader geopolitical strategy, which can sometimes conflict with the EU’s interests and initiatives. Militarily, Russia provides security guarantees to several Central Asian states, which further entrenches its influence.

The potential impact of Russia’s influence on EU-Central Asia trade relations is significant. As the EU seeks to deepen its economic ties with Central Asia, it must navigate a complex geopolitical landscape where Russia’s interests are deeply entrenched. This requires a delicate balancing act: the EU must engage with Central Asia in a way that respects Russia’s historical ties while also promoting its own strategic and economic interests.

4.4.2. Regulatory Discord

Regulatory discord poses another substantial challenge to EU-Central Asia economic ties. The regulatory environments across Central Asian countries are often inconsistent, lacking the harmonization needed to facilitate smooth international trade and investment. Differences in legal frameworks, customs procedures, and business regulations can create significant barriers for EU companies seeking to enter Central Asian markets.

To overcome these challenges, the EU could support efforts to harmonize regulations and standards across Central Asia. By providing technical assistance and promoting best practices, the EU can help create a more predictable and transparent regulatory environment. This would reduce the risks associated with doing business in the region and encourage greater investment and trade.

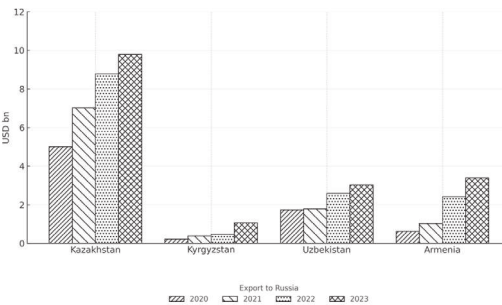
4.4.3. Regional Trade Volumes

The imposition of sanctions has likely impacted these investment flows, further straining the economic relationship between the two regions. As a result of sanctions, in 2022, FDI flows to the Russian Federation were reported as negative, amounting to approximately USD -18.6 billion. (Lloyds Bank, 2024) For this reason, the focus of this chapter is on the trade data of the post 2020 period, during which the majority of sanctions

and trade diversion took place.

Graph 4 illustrates the significant increase in exports from Central Asian countries to Russia between 2020 and 2023. The data highlights a clear trend of Central Asia becoming an increasingly important trade partner for Russia, particularly in light of the sanctions imposed by the EU and the US.

Graph 4: Export to Russia from Countries of the Central Asian Region (2020-2023)



Over the past years, the trade relationship between Central Asia and Russia has notably strengthened, as evidenced by the substantial increases in export values from Central Asian countries to Russia. This trend is indicative of a deepening economic interdependence driven by several key factors, including improved economic policies, bilateral agreements, and regional trade initiatives.

Table 4: Export to Russia from selected CA countries during 2020 -2023 (million USD)

	2020	2021	2022	2023
Kazakhstan	\$5,007	\$7,019	\$8,781	\$9,788
Kyrgyzstan	\$218	\$392	\$1,069	\$746
Uzbekistan	\$1,738	\$1,704	\$2,599	\$3,023
Armenia	\$611	\$794	\$2,417	\$3,384

Source: UN ComTrade Database (<https://comtrade-plus.un.org/TradeFlow>)

Table 4 presents the export figures from Kazakhstan, Kyrgyzstan, Uzbekistan, and Armenia to Russia from 2020 to 2023. Kazakhstan

consistently increased its exports, rising from \$5 billion in 2020 to nearly \$9.8 billion by 2023. Kyrgyzstan saw significant growth from \$217 million in 2020 to over \$1 billion in 2022, though it slightly declined in 2023. Uzbekistan and Armenia also experienced consistent growth, with Uzbekistan reaching \$3 billion in 2023 and Armenia surpassing \$3.3 billion. This data suggests robust trade relations with Russia, particularly in Kazakhstan and Armenia.

The increasing export from Central Asian countries to Russia, particularly in the context of the sanctions, presents both opportunities and challenges for the EU. On one hand, Central Asia's enhanced economic ties with Russia may complicate the EU's efforts to deepen its own economic relations with the region. The substantial increase in exports, especially in critical sectors such as energy and manufacturing, underscores Central Asia's growing strategic importance. According to the International Monetary Fund (2024), to mitigate the risks associated with concentrated trade relationships, it is crucial that Central Asian countries, especially the Kyrgyz Republic, pursue policy reforms aimed at diversifying their trade profiles. Efforts to enhance regional linkages and improve supply chain management will be essential to reduce reliance on any single trading partner, particularly amid uncertain geopolitical climates.

On the other hand, the EU could leverage this trend to foster stronger economic ties with Central Asia by positioning itself as an alternative investment source for these countries. The EU's technological expertise could be used to diversify Central Asia's trade relationships, reducing the region's dependency on Russia and creating more balanced and sustainable economic partnerships.

4.5. Implications for the EU in CA

The evolving trade relationship between Central Asia and Russia, intensified by sanctions, presents both strategic challenges and opportunities for the European Union. On the one hand, strengthened economic ties between Central Asia and Russia could complicate EU initiatives aimed at increasing economic collaboration

with Central Asian countries. Specifically, the significant increase in Central Asian exports to Russia, driven by critical sectors such as energy and manufacturing, underscores the region's increasing strategic importance and poses potential geopolitical risks for the EU.

On the other hand, these shifts offer the EU an opportunity to position itself as a complementary and stabilizing economic partner for Central Asia, particularly by leveraging sectors in which it holds competitive advantages, such as advanced technology, financial services, and sustainable infrastructure development. The substantial growth in EU imports from Central Asia, notably since 2022, signals an increasing dependency on the region's energy resources. This dependency provides a strategic opportunity for the EU to diversify its energy sources away from Russian dominance, thereby reinforcing its energy security and stability through resilient and diversified supply chains.

This can be explained by Central Asia's predominant reliance on raw material exports to the EU emphasizes the region's urgent need for economic diversification. The EU is well-positioned to facilitate this diversification by promoting investments in technology transfer, renewable energy projects, manufacturing capacity expansion, and service sector development, thus fostering more balanced and sustainable economic relationships.

Significant fluctuations observed in the trade data, particularly around critical historical junctures like the 2008 global financial crisis and post-2021 sanction intensification, warrant further elaboration. These fluctuations correlate strongly with external economic shocks and geopolitical disruptions. Specifically, the 2008 financial crisis resulted in pronounced volatility due to disruptions in global demand and supply chains, significantly affecting trade volumes between the EU, Russia, and Central Asia. Similarly, intensified EU-US sanctions post-2021 drastically shifted traditional trade routes, compelling Central Asian countries to reorient their trade flows more prominently towards Russia and, to some extent, Europe. Recognizing these external shocks' immediate and lasting impacts is crucial for accurately assessing risks and op-

portunities within the evolving geopolitical and economic landscape.

5. CONCLUSION

Central Asia holds immense geostrategic significance for the European Union (EU), acting as a crucial bridge to regions like China, Afghanistan, and the Middle East while serving as a key source of energy imports. Recognizing this, the EU's Central Asia Strategy established a foundation for political dialogue and cooperation in governance, education, and environmental protection.

The imposition of sanctions on Russia by the EU and the United States has driven a strategic realignment in trade relations, forcing the EU to seek alternative partners. Central Asia, with its abundant resources and strategic location, has emerged as a vital partner in this restructuring. While sanctions present economic challenges, they have catalyzed the EU's diversification of trade networks, enhancing energy security and creating opportunities for stronger ties with Central Asia.

The obtained ARDL regression results underscore the significant long-term negative impacts of sanctions on Russia's GDP, reinforcing their effectiveness as a geopolitical tool. Moreover, these results illustrate Central Asia's critical role in mitigating the sanctions' economic impact on Russia by increasing exports to the region. Therefore, the EU should strategically engage Central Asia, recognizing its growing economic significance as a regional buffer against geopolitical risks, ultimately fostering more resilient trade relationships.

The research findings answer the initial four questions as follows:

1. The sanctions significantly disrupted EU-Russia trade, particularly in energy, finance, and agriculture. The EU's imports of Russian oil and gas sharply declined, forcing Russia to seek alternative markets in South-east Asia and Central Asia.
2. Central Asia has become a crucial alternative trade partner for the EU, with increased exports of energy and agricultural products

to the EU. Central Asia also acts as a trade intermediary, facilitating re-exports from Western nations to Russia, downgrading the sanctions' role.

3. Opportunities include Central Asia's rich natural resources, geographic proximity, and the potential for diversifying the EU's energy supply. Harmonizing regulations and addressing logistical barriers are critical to realizing these opportunities.
4. The EU can mitigate risks by promoting economic diversification in Central Asia through investments in renewable energy, technology, and manufacturing. Strengthening governance, regulatory frameworks, and transport infrastructure can reduce vulnerabilities.

Fostering a stable and economically integrated Central Asia is essential for the EU. Regional stability benefits not only Central Asia but also the EU, the United States, and the broader global community, positioning the region as a reliable partner in global trade and a buffer against regional conflicts.

To strengthen engagement, the EU should build on its Central Asia Strategy by enhancing political dialogue, supporting governance reforms, and promoting mutual respect. Investments in infrastructure, such as transport corridors and digital connectivity, are crucial to overcoming logistical barriers and reducing trade costs.

The EU must actively support economic diversification in Central Asia by encouraging investments in manufacturing, technology, agriculture, and renewable energy. Leveraging multilateral platforms, such as the World Bank and regional organizations, can align development goals and amplify the impact of EU initiatives.

Finally, integrating sustainable development goals into its strategy will ensure long-term regional stability, address social inequities, and foster environmental protection. By championing sustainability, the EU can help Central Asia reduce dependence on Russia and build a resilient, diversified economy, ensuring mutual prosperity for the region and its global partners.

References

- Abel, M. (2023). Unravelling the Impact: Analyzing the Effects of Sanctions against Russia. *International Journal of Science and Research (IJSR)*, 12(12), 51-57. <https://doi.org/10.21275/sr231122130846>
- Ambrosio, T., & Vasiliev, A. (2023). Sanction Evasion and Economic Resilience: Central Asia's Role in Russia's Trade Strategy. *Journal of Eurasian Studies*, 14(2), 145-160. <https://doi.org/10.1016/j.euras.2023.03.004>
- Anderton, C. H., & Carter, J. R. (2001). The Impact of War on Trade: An Interrupted Times-Series Study. *Journal of Peace Research*, 38(4), 445-457. <https://doi.org/10.1177/0022343301038004003>
- Arzhaev, F. I. (2023). Russia's Geoeconomic Strategy in Central Asia under Sanctions Pressure. *Research Result Economic Research*, 9(3). <https://doi.org/10.18413/2409-1634-2023-9-3-0-1> (In Russian)
- Bakhtairova, E. (2019). Formation of a New Paradigm of Public Service in the Post-Soviet Eurasian Economic Union Countries (Belarus, Armenia, Kazakhstan and Kyrgyzstan). *Bulletin of Baikal State University*, 29(2), 273-279. [https://doi.org/10.17150/2500-2759.2019.29\(2\).273-279](https://doi.org/10.17150/2500-2759.2019.29(2).273-279)
- Belloumi, M. (2014). The relationship between trade, FDI and economic growth in Tunisia: An application of the autoregressive distributed lag model, *Economic Systems*, Volume 38(2), 269-287. <https://doi.org/10.1016/j.ecosys.2013.09.002>
- Böttger, K., & Plottka, J. (2018). A New Start for the EU Central Asia Policy in 2021? Current State, Developments and Perspectives for the Revision of the EU Central Asia Strategy. *L'Europe En Formation*, n° 385(1), 45-60. <https://doi.org/10.3917/eufor.385.0045>
- Burmester, A. (2022). The EU's Response to Sanctions on Russia: Shifting Trade Patterns and New Alliances. *International Trade Review*, 27(1), 67-84. <https://doi.org/10.1080/10548684.2022.1983657>
- Darmayadi, A., & Megits, N. (2023). The impact of the Russia-Ukraine war on the European Union economy. *Journal of Eastern European and Central Asian Research (JEECAR)*, 10(1), 46-55. <https://doi.org/10.15549/jeecar.v10i1.1079>
- Dong, Y., & Li, C. (2018). Economic sanction games among the US, the EU and Russia: Payoffs and potential effects. *Economic Modelling*, 73, 117-128. <https://doi.org/10.1016/j.econmod.2018.03.006>
- European Commission - Trade (2024). EU trade relations with Russia. Facts, figures and latest developments. https://policy.trade.ec.europa.eu/eu-trade-relationships-country-and-region/countries-and-regions/russia_en
- European Parliament (2024). The EU strategy on Central Asia: Towards a new momentum? [https://www.europarl.europa.eu/think-tank/en/document/EPRS_BRI\(2024\)762300](https://www.europarl.europa.eu/think-tank/en/document/EPRS_BRI(2024)762300)
- Eurostat - Data Browser (2024). EU27 (from 2020) trade by SITC product group https://ec.europa.eu/eurostat/databrowser/view/EXT_ST_EU27_2020SITC/default/table?lang=en
- Giumelli, F., Hoffmann, F., & Książczaková, A. (2020). The when, what, where and why of European Union sanctions. *European Security*, 30(1), 1-23. <https://doi.org/10.1080/09662839.2020.1797685>
- Hilgenstock, B., Ribakova, E., & Wolff, G. B. (2023). Toughening Financial Sanctions on Russia. *Intereconomics*, 58(4), 201-208. <https://doi.org/10.2478/ie-2023-0042>
- Hoh, A. (2019). China's Belt and Road Initiative in Central Asia and the Middle East. *Digest of Middle East Studies*, 28(2), 241-276. Portico. <https://doi.org/10.1111/dome.12191>
- International Monetary Fund (2024). Online Annex 3. Trade Patterns amid Shocks and a Changing Geoeconomic Landscape. <https://www.imf.org/-/media/Files/Publications/REO/MCD-CCA/2024/April/English/ch3onlineannex.ashx>
- Kim, V. (2022). Economic Sanctions as an Impediment to Trade in the Caucasus-Central Asian Region: A Legal View. *Law of International Trade in the Region of the Caucasus, Central Asia and Russia*, 88-102. https://doi.org/10.1163/9789004357839_006
- Klomp, J. (2020). The impact of Russian sanctions on the return of agricultural commodity futures in the EU. *Research in International Business and Finance*, 51, 101073. <https://doi.org/10.1016/j.ribaf.2019.101073>
- Knobel', A. (2019). The Eurasian Economic Union: Development Prospects and Possible Obsta-

- cles. *Russian Social Science Review*, 60(2), 137–161. <https://doi.org/10.1080/10611428.2019.1601978>
- Kurniawan, M. L. A., & A'yun, I. Q. (2022). Dynamic Analysis On Export, FDI and Growth in Indonesia: An Autoregressive Distributed Lag (ARDL) Model. *Journal of Economics, Business, and Accountancy Ventura*, 24(3), 350–362. <https://doi.org/10.14414/jebav.v24i3.2717>
- Latif, N.W.A., Abdullah, Z., & Razdi, M.A.M. (2015). An autoregressive distributed lag (ARDL) analysis of the nexus between savings and investment in the three Asian economies. *The Journal of Developing Areas* 49(3), 323–334. <https://dx.doi.org/10.1353/jda.2015.0154>
- Lloyds Bank (2024). Foreign direct investment (FDI) in Russia. <https://www.lloydsbanktrade.com/en/market-potential/russia/investment>
- Mahlstein, K., McDaniel, C. A., Schropp, S., & Tsigas, M. E. (2022). Estimating the Economic Effects of Sanctions on Russia: An Allied Trade Embargo. *SSRN Electronic Journal*. <https://doi.org/10.2139/ssrn.4148479>
- Meyer, D. F. (2022). The relationships between domestic investment, country risk, governance and economic development: A comparison, Kazakhstan versus Poland. *Journal of Eastern European and Central Asian Research (JEECAR)*, 9(6), 1055–1071. <https://doi.org/10.15549/jeecar.v9i6.1196>
- Moldashev, K. (2023). The Effects of Trade Related Sanctions on Russia on Kazakhstan's International Trade in Goods. *Eurasian Journal of Economic and Business Studies*, 67(4), 38–48. <https://doi.org/10.47703/ejeb.v67i4.321>
- 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. *Cuestiones Políticas*, 39(68), 251–272. Internet Archive. <https://doi.org/10.46398/cuestpol.3968.16>
- OFAC - Office of Foreign Assets Control (2024). Overseas Ukraine-/Russia-related Sanctions, <https://ofac.treasury.gov/sanctions-programs-and-country-information/ukraine-russia-related-sanctions>
- Pomfret, R. (2022). The European Union and Central Asia: Economic development and trade. *Australian and New Zealand Journal of European Studies*, 14(2), 49–61. <https://doi.org/10.30722/anzjes.vol14.iss2.15833>
- Pylin, A. (2022). Impact Of Anti-Russian Sanctions On The Economy Of The South Caucasus Countries: Unexpected Effects And Consequences. *Obshchestvo i Ekonomika*, 11, 56. <https://doi.org/10.31857/s020736760023164-9>
- Riley, A. (2023). EU Sanctions on Russia: Assessing the Impact and Future Prospects. *European Foreign Affairs Review*, 28(1), 29–50. <https://doi.org/10.54648/EERR2023002>
- Shamilov, M., & Bukovskis, K. (2021). Behind the new European Union strategy on Central Asia: some conceptual aspects. *KazNU BULLETIN. International Relations and International Law Series*, 95(3). <https://doi.org/10.26577/irilj.2021.v95.i3.04>
- Statista Report (2024). Cumulative number of European Union (EU) sanctions against Russian individuals and entities over the territorial integrity of Ukraine from March 2014 to February 2024. Retrieved from <https://www.statista.com/statistics/1293589/eu-sanctions-against-russia/>
- Tarr, D. G. (2016). The Eurasian Economic Union of Russia, Belarus, Kazakhstan, Armenia, and the Kyrgyz Republic: Can It Succeed Where Its Predecessor Failed? *Eastern European Economics*, 54(1), 1–22. <https://doi.org/10.1080/00128775.2015.1105672>
- The PRS Group, Inc. (2024, November 20). Russia country analysis. The PRS Group/International Country Risk Guide. Retrieved from <https://www.prsgroup.com/>
- The World Bank, World Development Indicators (2024). GDP Report. Retrieved from <https://data.worldbank.org/indicator/NY.GDP.MKTP.CD?end=2023&locations=RU&start=1990>
- Timofeev, I. (2023). Do Sanctions Really Work? The Case of Contemporary Western Sanctions Against Russia. *The Routledge Handbook of the Political Economy of Sanctions*, 151–162. <https://doi.org/10.4324/9781003327448-16>
- UN ComTrade Database. Accessed on August 17, 2024, <https://comtradeplus.un.org/Trade-Flow>
- US International Trade Administration (2024). Sanctions and Export Control on Russia. <https://www.trade.gov/russia-sanctions-and-export-controls>

Pomak u trgovinskoj dinamici Europe i Središnje Azije zbog sankcija Sjedinjenih Američkih Država i Europske unije protiv Rusije

Sažetak

Ovo istraživanje analizira promjene u trgovinskim obrascima između Europske unije (EU) i zemalja Središnje Azije (CA) — Kazahstana, Kirgistan, Uzbekistana i Armenije — kao odgovor na sankcije SAD-a i EU-a protiv Rusije. Kako sankcije remete tradicionalne tokove trgovine, osobito u naftnoj industriji i poljoprivredi, Središnja Azija postaje ključna alternativa za diversifikaciju i jačanje europskih trgovinskih okvira. Resursima bogati krajolik regije, povijesne veze i blizina Europi predstavljaju prilike za otporne i obostrano korisne ekonomske saveze. Strateška važnost Središnje Azije porasla je kako Europa nastoji smanjiti svoju ovisnost o Rusiji, s fokusom na energetske sigurnost i održivost. Ipak, postojan utjecaj Rusije komplicira ova potencijalna partnerstva. Istraživanje koristi mješoviti istraživački pristup, kombinirajući kvantitativnu analizu trgovinskih podataka i kvalitativni pregled trgovinskih politika. Identificiraju se prepreke za produbljivanje veza između EU i Središnje Azije, uključujući infrastrukturne nedostatke, regulatornu neusklađenost, političku nestabilnost i društvene nejednakosti. Nalazi naglašavaju potrebu da Europska unija usvoji proaktivan strateški pristup kako bi ublažila rizike i upravljala geopolitičkim složenostima. Istraživanje zaključuje da, iako sankcije predstavljaju neposredne izazove, one također nude dugoročne strateške koristi poticanjem raznovrsnije i otpornije trgovinske mreže, te poziva EU i SAD na aktivno uključivanje u ovo preusmjeravanje kroz napore ekonomske diplomacije, investicije i multilateralnu suradnju, s ciljem izgradnje trgovinske arhitekture koja podržava demokratske vrijednosti, ljudska prava i dugoročnu globalnu ekonomsku održivost.

Ključne riječi: Rusija, sankcije, suradnja, međunarodna trgovina, geopolitika