

AN ECONOMIC ANALYSIS OF THE IMPACT OF THE RUSSIAN WAR IN UKRAINE ON THE POLAND-U.S. TRADE

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ABSTRACT

This research article examines the economic analysis of the influence of the Russian war in Ukraine on Poland and U.S. trade. The study employs a combination of quantitative and qualitative research methods to investigate the impact of the conflict on trade dynamics between the two countries. The quantitative analysis utilizes trade data, including import and export volumes, trade balances, trade flows, and economic output from 2003 to 2022 using TradeMap data. Descriptive and various econometric estimations were estimated. The qualitative analysis involves the evaluation of policy responses, trade strategies, and business decisions made in response to the conflict. The results indicate a rise in Polish exports to the U.S., but dominated by specific products. This research contributes to a comprehensive understanding of how the Russian war in Ukraine has affected Poland's trade with the U.S., provides valuable insights into the economic consequences of the conflict, and identifies potential avenues for future trade cooperation between Poland and the U.S.

Keywords: international trade; TradeMap; Russian War; Poland; Ukraine, United States

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INTRODUCTION

The Russian war in Ukraine has had far-reaching geopolitical and economic implications for the directly involved parties and neighboring countries and global trade dynamics. One such neighboring country that has been significantly affected is Poland, a key trade partner of the United States. This research article aims to conduct an economic analysis of the reflection of the Russian war in Ukraine on U.S. trade with Poland, shedding light on the changes and

challenges faced by the bilateral trade relationship and complications for the Polish economy due to the normal inflow of the refugees from Ukraine (Duszczyk et al., 2023).

The Russian invasion of Ukraine erupted in 2014 with a major escalation at the beginning of 2022 with the invasion of Ukraine and has been characterized by territorial disputes, political instability, and economic sanctions imposed on Russia. As a result, the war has profoundly affected regional trade flows and patterns. Poland, situated close to Ukraine, has

experienced the spillover effects of the conflict, both directly through its border regions and indirectly through its trade relations with Ukraine and the United States (Welfens, 2023). Duvanova et al. (2023) state, "Russia has further escalated its war efforts in Ukraine, aggressive anti-Western stance, and domestic warmongering propaganda." This situation can prolong and even increase the U.S. support to countries neighboring Ukraine. The United States and Poland have long-standing trade ties encompassing various sectors, including machinery, automotive, chemicals, and agriculture. The economic relationship between the two countries has been characterized by substantial bilateral trade volumes and mutually beneficial cooperation.

This research article aims to provide a comprehensive economic analysis of the impact of the Russian war in Ukraine on Poland's trade with the U.S. By employing a combination of quantitative and qualitative research methods. This study aims to assess the changes in trade volumes, trade patterns, and the underlying factors influencing trade relations between the two countries. The findings of this research article contribute to a deeper understanding of the economic consequences of the Russian war in Ukraine on U.S. trade with Poland. By examining the quantitative trends, exploring the qualitative factors, and integrating both approaches, this study provides valuable insights for policymakers, businesses, and researchers. Moreover, the analysis will identify potential avenues for future trade cooperation between the U.S. and Poland, considering the evolving geopolitical landscape in the aftermath of the conflict.

LITERATURE REVIEW

A literature review on the economic analysis of the reflection of the Russian war in Ukraine on U.S. trade with Poland would involve examining existing scholarly research, studies, and publications exploring the topic. Several studies have investigated the impact of the Russian war in Ukraine on trade patterns and flows between the U.S. and European Union, including Poland. Darmayadi and Megits (2023) have analyzed trade data to identify changes in import and export volumes and the composition of traded goods. They have found evidence of a shift in trade flows and increased bilateral trade

between the two countries during the conflict. The war affected trade and destabilized the European Union's economic conditions, leading to significant challenges for many of its member countries. Also, they evaluated disruptions that can be attributed to increased uncertainty, political instability, and disruptions to supply chains.

A detailed analysis of the literature on the study was conducted to support the research objective. Marks-Bielska et al. (2014) analyzed the bilateral trade relationship between the U.S. and Poland using an empirical approach. It examined trade patterns, trade determinants, and trade policies' impact on trade flows. The research employed econometric models to estimate the effects of factors such as GDP, exchange rates, and trade agreements on the volume and direction of trade between the two countries. The study underscores that while there is an increasing trade relationship between Poland and the USA, Poland's trade is predominantly with its neighboring countries, especially within the European Union. Over the specified period, there was a gradual increase in the value of trade between Poland and the USA. The average growth rate was 9.8%, while the growth rate with EU-15 countries (older E.U. member states) stood higher at 13.1%. The potential for further growth in trade between Poland and the USA exists, but it has yet to be fully realized.

Piątkoski (2020) explored the U.S. and Poland's FDI patterns and comparative advantage. It examined the composition of foreign inflow investment trade, including the main traded goods and industries, and assessed the extent to which each country specializes in specific sectors. The analysis also discussed the factors driving comparative advantage, such as factor endowments, technological capabilities, and market conditions. The research highlights that despite a growth in investment among Polish enterprises during the study period, the expenditure on fixed assets remains notably low when compared to the rest of the E.U. Specifically, the average value of these expenditures in the private sector in other E.U. countries is about 70% higher than that of Poland. The authors concluded that while enterprises' investment activities in Poland have been growing, they still lag behind the average investment values in the E.U.'s private sector.

There are also notable regional disparities in investment growth within Poland.

Tomeczek (2021) focused on the shift in bilateral relationships and the impact of trade liberalization on US-Poland economic relations. It examined the effects of trade agreements, tariff reductions, and trade facilitation measures on bilateral trade flows. The research analyzed the changes in trade patterns, market access, and competitiveness resulting from liberalization efforts, providing insights into both countries' potential benefits and challenges. Research proved that the U.S. is a crucial economic partner for Poland. Although Poland may be of marginal significance in trade for the U.S., the bilateral trade value has grown over recent decades. U.S. corporations and capital are becoming increasingly influential in Poland. Their involvement signals a deeper economic integration between the two nations. The study noted that one of the pivotal aspects of the relationship is Poland's reliance on U.S. military aid for its national security. Over the past two decades, the military alliance between Poland and the U.S. has intensified.

Roszek-Wójtowicz and Grzelak (2021) investigated the relationship between foreign direct investment (FDI) and US-Poland trade relations. It examined the role of FDI in promoting trade, technology transfer, and market integration between the two countries. The research underscores the close relationship between regional economic development and its attractiveness for investments, identifies the top regions in Poland that are most attractive for investments, and highlights the role of special economic zones and smart specializations in attracting foreign capital. The use of advanced statistical techniques and a regional focus makes this article a unique contribution to the literature on investment attractiveness in Poland. The added value of the article comes from its regional perspective on investment attractiveness, utilizing multi-dimensional statistical analysis methods.

Unfortunately, some trade barriers and non-tariff measures (NTM) in the US-Poland trade relationship still exist. According to Czerwińska and Kaźmierkiewicz (2015), the impact of regulatory policies, technical standards, customs procedures, and other NTMs present investment risks that negatively influence trade flows. The study discussed the challenges posed by NTMs

and explored potential avenues for reducing trade barriers and enhancing market access between the two countries. Unfortunately, The war has resulted in a significant humanitarian crisis, with thousands of people killed and millions displaced from their homes. Byrska (2022) stated that civil crisis management typically refers to the coordinated efforts and actions taken by governmental and non-governmental organizations to respond to and manage crises or emergencies affecting civilians. In the case of the abnormal inflow of Ukrainian refugees, Polish society had to place additional resources in activities such as disaster relief programs, humanitarian aid, and establishing essential services.

These publications provide a glimpse into the economic analysis of US-Poland trade, covering various aspects such as trade patterns, determinants, liberalization efforts, investment dynamics, and trade barriers. A comprehensive literature review incorporating these and other relevant studies provides a solid foundation for understanding the existing research landscape and identifying potential gaps for further exploration in reflecting the Russian war in Ukraine on U.S. trade with Poland.

In conclusion and in summary, the main impacts of the war on international trade between the two countries include:

- **Trade Diversification:** The Russian war in Ukraine has prompted countries, including the U.S., to explore alternative trade partners and diversify their trade relationships. This has led to a shift in trade patterns, with some studies suggesting an increase in trade between the U.S. and Poland. The conflict has raised concerns about dependence on unstable regions and highlighted the importance of diversifying trade ties, potentially opening up new opportunities for US-Poland trade.
- **Economic Sanctions:** Economic sanctions imposed on Russia in response to its actions in Ukraine have indirectly affected U.S. trade with Poland. Some studies have examined the impact of these sanctions on trade dynamics, including the potential redirection of trade flows. They have explored how these sanctions have affected sectors such as energy, agriculture, and finance, which could have implications for US-Poland trade given

Poland's geographic proximity and economic ties with Russia.

- **Policy Responses and Trade Agreements:** Scholars have examined the policy responses of the U.S. and Poland to the Russian war in Ukraine and their implications for trade relations. This includes negotiating trade agreements, policy adjustments, and measures taken to safeguard trade interests. Studies have assessed the effectiveness of these policies in promoting trade stability and resilience in the face of geopolitical tensions.

METHODOLOGY

The Hypotheses for this research are:

Hypothesis 1: The Russian war in Ukraine has negatively impacted U.S. trade with Poland, resulting in a decline in bilateral trade between the two countries. This hypothesis suggests that the conflict in Ukraine, particularly Russia's aggression and its impact on regional stability, has had an adverse effect on trade relations between the U.S. and Poland.

Hypothesis 2: The Russian war in Ukraine has created new opportunities for economic cooperation between the U.S. and Poland, increasing trade and investment between the two countries. This hypothesis argues that the Russian war in Ukraine has catalyzed closer economic collaboration between the U.S. and Poland.

Hypothesis 3: U.S. trade with Poland remains largely unaffected by the Russian war in Ukraine, with only minor trade volumes and pattern fluctuations. This hypothesis suggests that the conflict in Ukraine has had minimal impact on U.S. trade with Poland.

These hypotheses provide different perspectives on the potential impact of the Russian war in Ukraine on U.S. trade with Poland, ranging from negative effects to positive opportunities. The research paper can explore and analyze data, case studies, and expert opinions to evaluate and support or refute these hypotheses.

Researchers aim to develop models that explain and predict export success by considering these factors and employing statistical techniques. These models can assist policymakers and businesses in making informed decisions regarding market selection,

market entry strategies, and resource allocation. The most appropriate research method for studying the reflection of the Russian war in Ukraine on U.S. trade with Poland would be a combination of quantitative and qualitative methods. This approach would allow for a comprehensive topic analysis by examining the numerical data and the underlying factors and perspectives involved.

The study uses a mixed method, including both quantitative and qualitative methods. The quantitative method involves collecting and analyzing numerical data to understand patterns, trends, and statistical relationships. For this topic, quantitative methods can be used to examine trade data, such as import and export volumes, trade balances, and trade flows between the U.S. and Poland. The following quantitative methods can be employed: **Trade Data Analysis:** Analyze existing trade databases and official statistics to assess changes in trade patterns, trade volumes, and trade balance between the U.S. and Poland during and after the Russian war in Ukraine. **Econometric Analysis:** Apply econometric techniques to quantify the relationship between the Russian war in Ukraine and U.S. trade with Poland. This can involve using regression models to estimate the impact of variables such as political instability, economic sanctions, or supply chain disruptions on trade flows.

The qualitative method includes analysis of relevant documents, such as trade agreements, policy papers, news articles, and reports, to understand the U.S. and Poland's policy responses, trade strategies, and business decisions in response to the Russian war in Ukraine. This can provide insights into the intentions and actions of the involved parties. By combining quantitative and qualitative research methods, researchers can understand how the Russian war in Ukraine has influenced U.S. trade with Poland, incorporating both the numerical aspects and the underlying factors that shape trade dynamics.

Table 1 provides a summary of all the variables included in the study. All variables were converted into natural logarithms to simplify the reporting of results and minimize the possibility of any variance within the dataset. Stationarity testing of variables was used to determine the econometric methods and processes used in the study. The options for the econometric analysis

were between the Johansen cointegration model and the Autoregressive Distributed Lag (ARDL) model as developed by Pesaran, Shin and Smith (2001). Test results from the unit root tests indicated a mixture of stationarity; therefore, the ARDL model was selected as the most suitable for this study.

Both descriptive and advanced econometric time series data analysis were included. An

(ARDL) model was used to estimate the long and short-run impacts between trade and economic growth between Poland and the U.S. Granger causality tests were also used to evaluate the existence of any causality between the variables. Secondary data used in the study were collected from the World Bank Development Indicators (2022) and trade data from the International Trade Centre (ITC) via TradeMap. The data period as selected is from 2003 to 2022.

Table 1: Summary of variables included in the study

Variable	Abbreviations (log format in brackets)	Role of the variable and anticipated impact
Poland's total GDP (US\$)	POL_GDP (LPOL_GDP)	Used as an independent variable as a predictor of exports. It is expected to have a positive impact on exports.
Poland's total exports to the U.S. (U.S.)	POL_EXP (LPOL_EXP)	Used as a dependent variable.
Poland Net exports (exports minus imports) to the U.S. (US\$)	POL_NEXP (LPOL_NEXP)	Only used in the Granger Causality analysis.
U.S. total GDP (US\$)	US_GDP (LUS_GDP)	Used as an independent variable as a predictor of exports. It is expected to have a positive impact on exports.

Source: World Bank Development Indicators (2022a); International Trade Centre (ITC) (2023).

The ARDL model equation, as estimated, is listed as follows:

$$LPOL_{EXP_t} = \alpha_0 + \alpha_1 LRPOL_{EXP_{t-1}} + \alpha_2 LagLPOL_{GDP_{t-1}} + \alpha_3 LagLUS_{GDP_{t-1}} \quad (1)$$

The econometric modeling process included the following steps: the Augmented Dickey-Fuller (ADF) tests were used to determine the level of stationarity or, also known as unit root tests, the estimation of the possibility of long-run relationships using the Bound-test for cointegration, and included the estimation of error correction model and also testing for short-run relationships, Granger causality tests and lastly diagnostic and model stability tests. Regarding the Bounds test, the calculated F-statistic value is compared to the upper and lower critical values in the estimation. If the F-statistic is below the lower and upper bound, no cointegration exists between the variables. After confirmation of the long-run and cointegration via the Bounds-test, the error correction model (ECM) is estimated and includes short- and long-run dynamics. The ECM's coefficient must be

negative, with a significant p-value, indicating convergence to equilibrium and cointegration between variables. Lastly, model diagnostic and stability checks were done by testing for robustness. Three tests were conducted to test for serial correlation, normal distribution, and heteroskedasticity. Lastly, the CUSUM test was used to test the stability of the model.

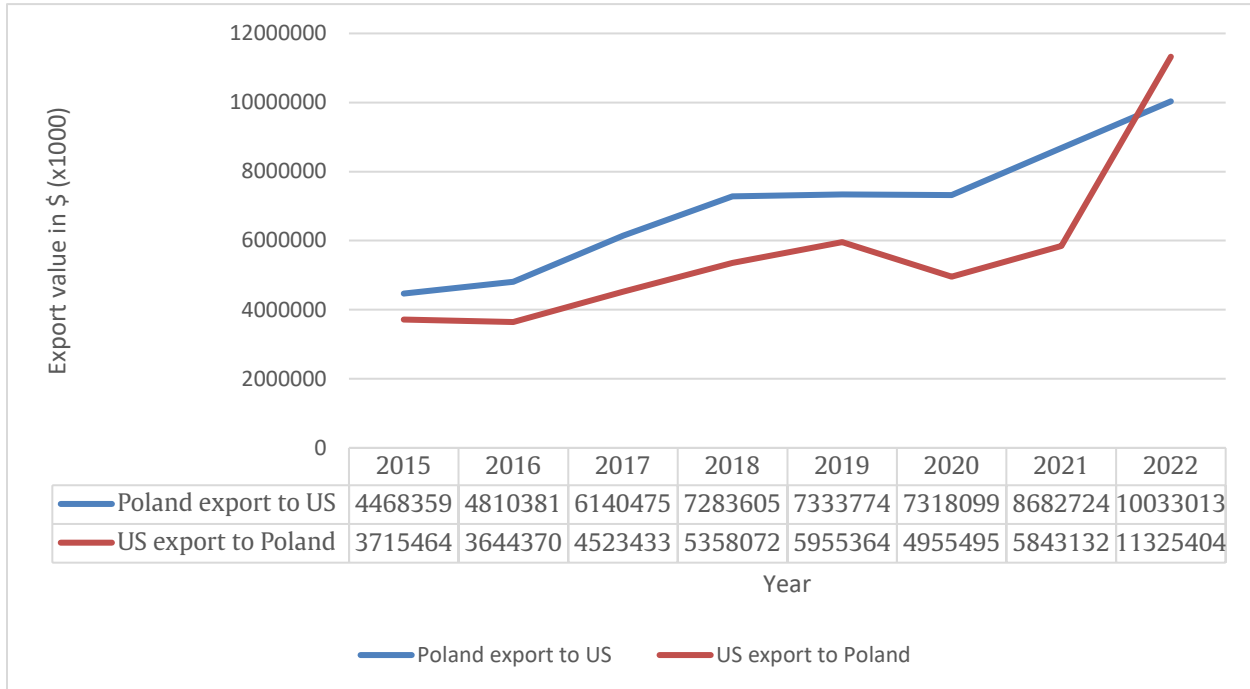
RESULTS

The results section commences with a descriptive analysis of the changes in the trade between Poland and the U.S. The exports from Poland to the U.S. and from the U.S. to Poland have increased steadily from 2015 to 2022. In 2022, the U.S. exports to Poland have eclipsed that of the exports to the U.S. for the first time. The annual growth rate of exports from Poland to the U.S. from 2015 to 2022 was 17.8%, while from 2019, the average yearly growth was 12.3%. The growth rate from 2021 to 2022 (since the start of the Russian-Ukraine war) was 15.6%. The trends indicated in Figure 1, and the data analysis

indicate that Poland's exports to the U.S. have increased significantly by 12% over the last seven years. An interesting feature from the data is the apparent spike in U.S. exports to Poland from 2021 to 2022 by 93.8%. Trade between the two

countries has increased significantly, even during COVID-19 years, but has increased in 2022 since the start of the Russian-Ukraine war.

Figure 1: Trade analysis between Poland and the U.S.: 2015 - 2022

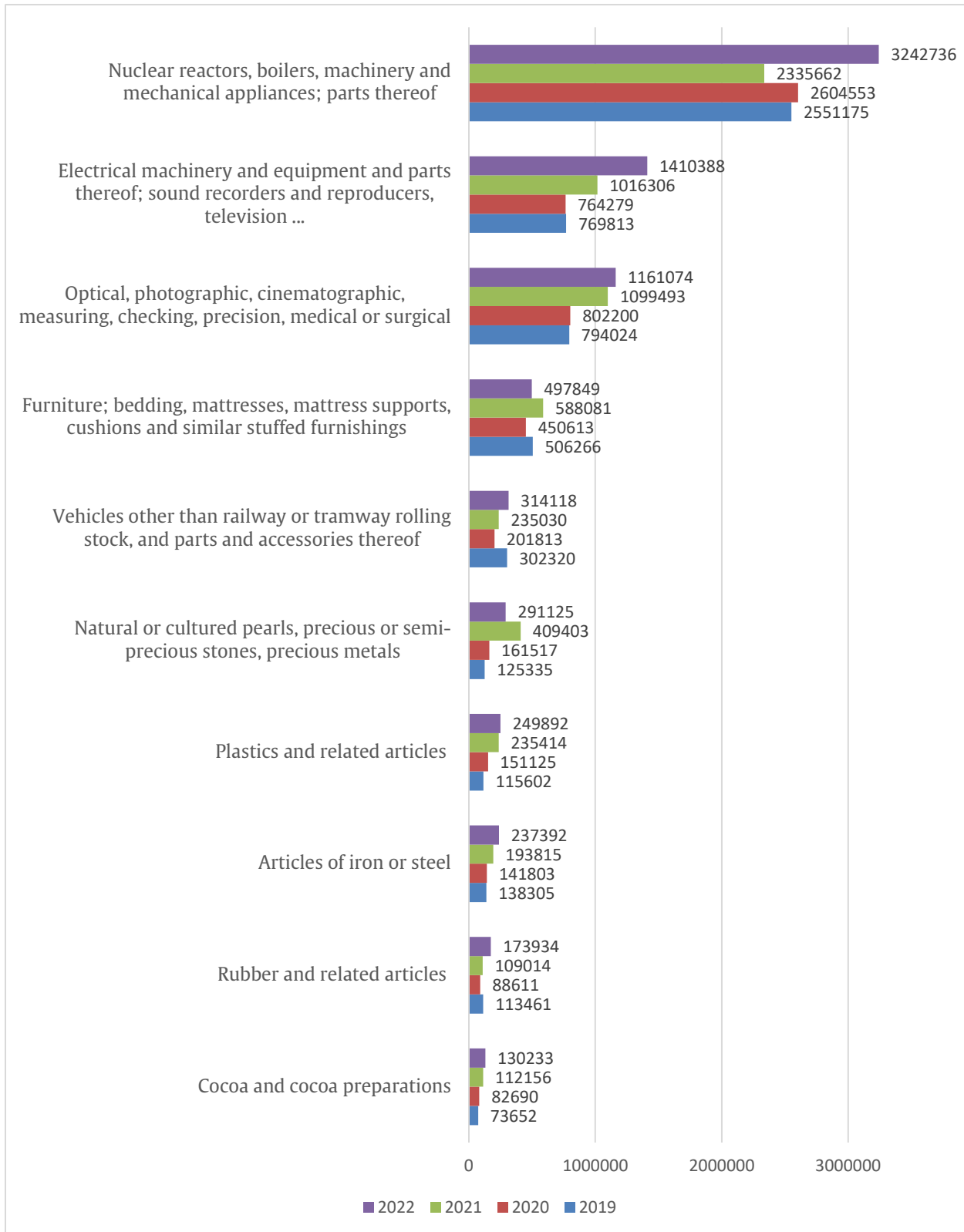


Source: ITC (2023)

Figure 2 summarizes the Polish top 10 products exported to the U.S. from 2019 to 2022. The graph shows the rapid growth in exports to the U.S., which could be attributed to the top 3 product categories. The top export product category to the U.S. is nuclear reactors, boilers, and machinery, contributing 32.3% of all exports to the U.S., which has grown by 39.5% from 2021 to 2022. This is followed by electrical machinery and equipment, contributing 14.1% of all exports to the U.S. and growing 38.2% from 2021 to 2022. Lastly, the hi-tech optical, photographic, and medical equipment category contributes 11.6% to total exports to the U.S. The top 3 export categories represent 58% of all exports. All of these product categories are hi-tech products

and reflect the maturity and competitiveness of Poland's manufacturing sector.

Figure 2: Poland exports to the U.S. by product from 2019 to 2022 (in US\$ x1000)



Source: ITC (2023)

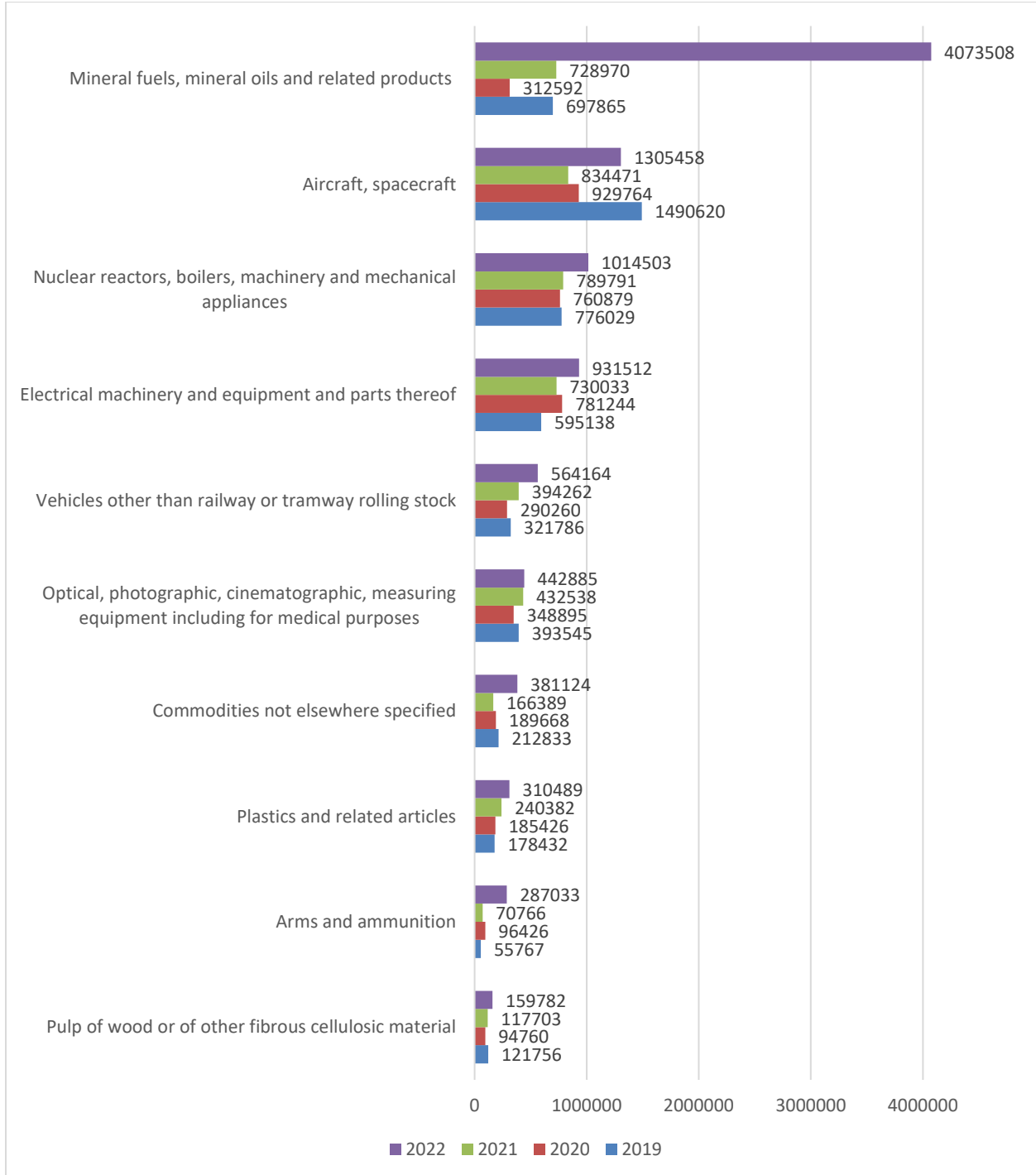
Figure 3 summarizes the U.S. top 10 products exported to Poland from 2019 to 2022. Most of

the top 10 product categories have increased from 2019 to 2022. The evident structural change

regarding exports to Poland is the Minerals, fuels, and oils category. This product category contributed 35.9% of exports in 2022, which increased by 459% from 2021 to 2022. This massive increase is due to the Russian-Ukraine war. The usually highest product in the category

"Aircraft, spacecraft," but 2022 also resulted in a spike of 56.5% in the last year due to the ongoing war on the Polish border. Other hi-tech export categories have also experienced high levels of growth.

Figure 3: U.S. exports to the U.S. by product from 2019 to 2022 (in US\$ X1000)



Source: ITC (2023)

Table 2 and Figure 4 are descriptive analyses of the four main variables included in the study. The Polish economy has increased steadily since 2003, and only the two COVID years had a limited dent on the upwards-trending economy. The Polish exports to the U.S. have increased rapidly, especially from 2017 to date. This trend is due mainly to close trade relationships and global shocks such as COVID-19 and the Russian/Ukraine war. Net exports from Poland to the US has also increased since 2008 to 2021 but 2022 has seen a negative trade balance mainly due to oil imports from the US.

According to the Jarque-Bera test values, all variables are normally distributed, with values above 0.05. Regarding the Kurtosis values, all variables should have a value of below 3, thus indicating the data set has a limited tendency for outliers. In this case, a few of the variables

contain outliers. In a novel descriptive analysis, indexes have been created for a few of the variables 2022 with 2021 in brackets. The Polish economy, measured in GDP, is only 2.99% of the U.S. economy, but from 2021 to 2022, Poland has marginally increased its economy to the U.S. Polish exports to the U.S. were 1.6% of the Polish economy and have also increased on a limited scale. In contrast, the U.S. economy indicated two dents with the financial crises in 2008/2009 but has recovered well over the study period. Poland's net exports to the U.S. have been more erratic, although with a mostly trade surplus, except for the 2022 year when Poland imported large amounts of minerals and oils.

- Poland GDP / US GDP: 2.99 (2.91)
- Poland exports to the U.S. / Poland GDP: 1.60 (1.45)

Table 2: Descriptive analysis, 2003 to 2022

Concept	Poland's GDP in \$	Poland exports to U.S. in \$	Poland's net exports to the U.S. in \$	US GDP in \$
Mean	450,000	4,490	658	17,500
Maximum	627,000	1,000	2,840	21,000
Minimum	300,000	1,180	-1,660	14,500
Skewness	0.200	0.614	-0.243	0.279
Kurtosis	2,002	2'302	2,893	1,989

Figure 4: Trend analysis

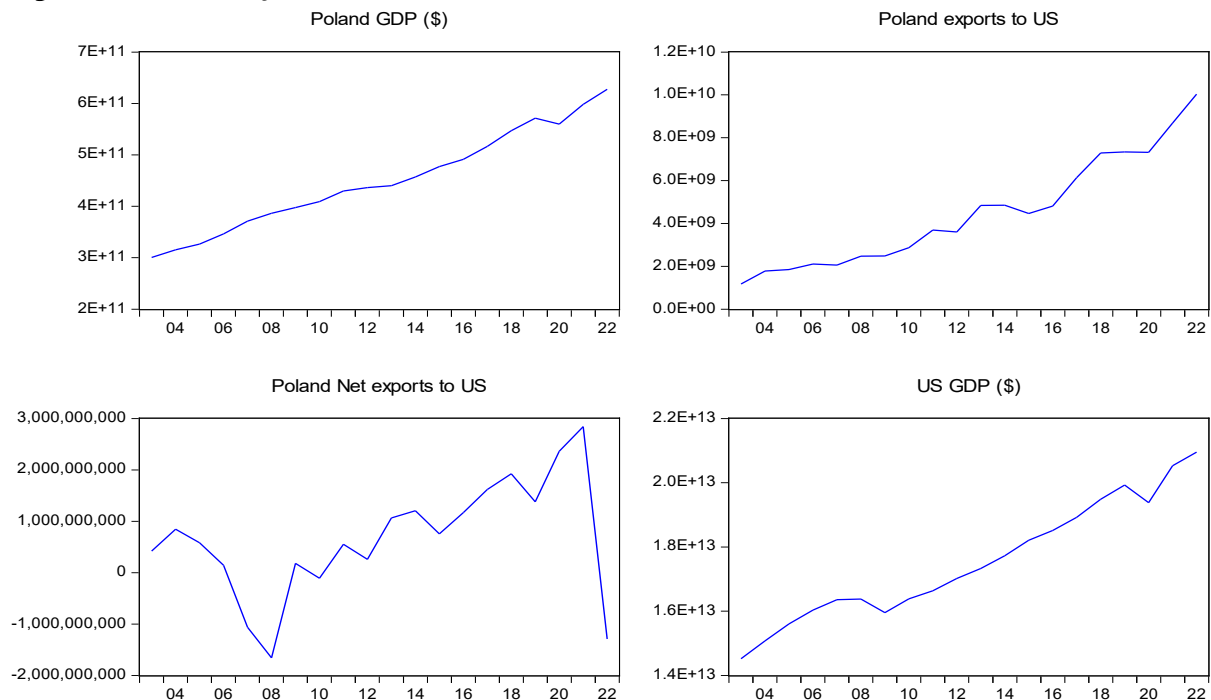


Table 3 represents the correlation analysis using all four variables listed in Table 1. All four variables have positive and significant relationships with each other. The pair of variables with the highest relationship level is Poland's GDP and the U.S. GDP, with a coefficient

of 0.988; the relationship is followed by Poland's GDP and Poland's exports to the U.S., with a coefficient of 0.978.

Table 3: Correlation analysis

	Poland GDP	Poland exports to the US	Poland's net exports to the US	US GDP
Poland GDP	1.0000			

Poland exports to the US	0.9781	1.0000		
	(19.9793)	-----		
	[0.0001]*	-----		
Poland's net exports to the US	0.4185	0.4320	1.0000	
	(1.9551)	(2.0323)	-----	
	[0.0663]**	[0.0571]**	-----	
US GDP	0.9881	0.9767	0.4186	1.0000
	(27.3590)	(19.3420)	(1.9555)	-----
	[0.0001]*	[0.0002]*	[0.0662]**	-----

Notes: Values in bold text are the correlation coefficient; (value) indicates the t-value, and [value] is the p-value. * and ** indicate statistical significance at 1% level and 5% level, respectively, regarding the p-value.

This section uses an ARDL methodology to test the long-run relationships between the selected variables. The Augmented Dickey-Fuller (ADF) test completed the unit roots estimations. The tests indicated a mixture of stationarity, with variables presenting both stationarity on levels and I(1). The results of the unit root tests indicated that an ARDL model was best suited for this study. The next step in the econometric methodology was the Bounds test for possible cointegration and long-run relationships between the variables. The F-statistic was 4.5805 with an upper bound value of 5.0 percent significance at 3.87. Based on the above-listed estimation results, it could be concluded and confirmed that long-run relationships do exist between the variables selected in the model. Equation (2) presents the long-run relationships:

$$LPOL_EXP = 2.262 * LPOL_GDP + 0.8032 * LUS_GDP + \dots \quad (2)$$

From equation (2), the long-run regression for Poland, all coefficients are positive. The Polish GDP has a much higher impact on Polish exports if compared to the impact of the US GDP on

Polish exports. The prediction, estimated in the model, is that a 1% increase in POL_GDP could lead to an increase of 2.26% in POL_EXP. The impact of US_GDP on U.S. GDP is less, and a 1% increase in US GDP could lead to a rise of 0.8% in Polish exports.

Table 4 indicates the error correction model (ECM) and short-run results. The ECM confirms the long-run relationship between the variables included in the model. The ECM test results were negative and significant, as indicated in Table 4. All independent variables have a positive short-run relationship with the dependent variable (LPOL_EXP) regarding the short-run results. However, it is important to note that only LPOL_GDP has a significant impact at the 5% significance level.

Table 4: Short-run relationship and error-correction results

Variable (D(LPOL_EXP is the dependent variable))	Coefficient	Std. Error	P-value
D(LPOL_GDP)	2.0803	0.7838	0.0199*
D(LUS_GDP)	0.7388	1.4792	0.2712
CointEq(-1)*	-0.9197	0.1936	0.0004*

Note: *rejection of null hypothesis at 5% significance level.

Table 5 summarises the Granger causality tests for short-run causal relationships. This type of analysis uses dependent or independent variables, although this study focuses on the POL_EXP to the U.S. as the dependent variable.

The results indicate a bi-directional causal relationship between POL_EXP to U.S. and POL_GDP. The only other significant causal relationship is that changes in the US_GDP do cause changes in POL_GDP.

Table 5: Granger Causality Test results (Poland)

Null hypothesis	F-stat	p-value
POL_GDP does not Granger cause POL_EXP to US	6.9868	0.0177*
POL_EXP to U.S. does not Granger cause POL_GDP	2.2437	0.0991**
US_GDP does not Granger cause POL_EXP to US	1.3674	0.2594
POL_EXP to U.S. does not Granger cause US_GDP	1.9374	0.1830
US_GDP does not Granger cause POL_GDP	2.1887	0.09162**
POL_GDP does not Granger cause US_GDP	0.1880	0.6703

Note: *rejection of null hypothesis at 5% significance level and ** rejection at 10% level.

Various diagnostic and stability tests were performed to determine the appropriateness and stability of the models and methods used in the study. The was performed to test for serial correlation and the normal distribution test. The results indicated that the residuals were not auto-correlated using the Breusch-Godfrey LM Test. At the same time, the series was tested via the Jarque-Bera Test and found to be normally distributed. The Breusch-Pagan-Godfrey test was used to test for heteroscedasticity, and the series was found to be homoscedastic. Also, the model was tested for stability using the CUSUM test. The results confirmed a stable model. These results confirm that the findings, as estimated, are trustworthy.

CONCLUSION

The findings of this economic analysis provide valuable insights into the reflection of the Russian war in Ukraine on trade between the U.S. and Poland. Through a combination of quantitative and qualitative research methods, we have examined the impact of the conflict on trade dynamics between the two countries.

Quantitative analysis revealed that the Russian war in Ukraine had a discernible impact on US-Poland trade. Trade volumes experienced

fluctuations during the conflict period, with a decrease in certain sectors and an overall disruption in trade flows. Geopolitical factors, political instability, and economic sanctions were found to be significant determinants of trade patterns during this period.

Overall, the reflection of the Russian war in Ukraine on U.S. trade with Poland manifested through shifts in trade patterns, increased risk perception, and changes in business strategies. The study highlights the importance of considering geopolitical dynamics and political stability in analyzing trade relationships between countries.

While this research article provides valuable insights, it is important to acknowledge certain limitations that may have affected the findings:

- **Data Limitations:** The analysis relied on available trade data and other relevant variables. Data availability, quality, and accuracy limitations may have influenced the results. Moreover, the data may only capture some of the nuances and complexities of the US-Poland trade relationship during the conflict period.
- **Generalizability:** The findings are specific to the US-Poland trade relationship and may not directly apply to other countries or

regions. Factors unique to the geopolitical context of Poland and the U.S. may have influenced the results. Caution should be exercised when generalizing the findings to different trade contexts.

Future research should address these limitations by employing more comprehensive and robust data sources, expanding the analysis to include additional countries or regions, and considering longer time periods to assess the lasting effects of the conflict on trade relationships. Additionally, integrating alternative research methodologies and exploring other economic indicators can enhance our understanding of the complex dynamics between conflicts and international trade.

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