

The unequal costs of war: income inequality amid the Russia–Ukraine conflict

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Abstract

Purpose – This study analyses how the Russia–Ukraine war reshaped income inequality dynamics across 10 post-Soviet economies, focussing on whether pre-existing structural dependency conditions influenced the transmission of geopolitical shocks into domestic income distribution.

Design/methodology/approach – This study applies the fully modified ordinary least squares model to a balanced panel data set of 10 post-Soviet countries from 1998 to 2023, enabling the estimation of both overall and country-specific results.

Findings – The empirical results reveal that the Russia–Ukraine war is associated with rising income inequality in several post-Soviet countries, with the largest effect observed in Ukraine. Russia-aligned countries suffered the most due to their close ties with Russia, while Western-aligned countries were cushioned by European Union (EU) support. The interaction between the war period and economic dependency, proxied by remittance inflows, is positive and statistically significant, particularly in highly remittance-dependent economies such as Kyrgyzstan, suggesting that pre-existing dependency linkages intensified inequality pressures during the shock period. Trade openness, foreign direct investment, oil prices and inflation are associated with widening income inequality, albeit with heterogeneous country-level outcomes.

Practical implications – Results suggest that post-Soviet countries should reduce dependency on Russia by diversifying economic relations and pursuing deeper integration into the EU or establishing an adjacent regional union.

Originality/value – This study advances dependency theory by introducing the concept of shock-activated dependency, which reconceptualises dependency as a dynamic rather than static condition. It shows that dependency operates as a transmission mechanism through which geopolitical shocks are transmitted into domestic income inequality. By highlighting how remittance dependency amplifies vulnerability during crises, this study modernises dependency theory for analysing the distributional consequences of geopolitical disruptions.

Keywords Dependency, Global restructuring, Income inequality, Russia–Ukraine war

Paper type Research article

1. Introduction

Income inequality has emerged as one of the most pressing economic challenges in an increasingly interconnected and geopolitically unstable world. While globalisation and external economic linkages have reshaped growth dynamics across countries, they have also increased exposure to external shocks with uneven distributional consequences. The Russia–Ukraine war represents one such geopolitical disruption, with its economic effects extending far beyond the belligerent countries. In the post-Soviet region, countries maintain varying degrees of dependency on Russia through trade, remittances and energy supplies (Piketty *et al.*, 2018). The escalation of the war in 2022 disrupted these linkages through sanctions, financial instability and declining remittance flows (Ratha and Kim, 2022), generating asymmetric economic effects across countries and disproportionately affecting lower-income households.

Despite growing attention to the effects of the war on macroeconomic outcomes such as growth and inflation (Boashash, 2023; Khudaykulova *et al.*, 2022; Luşcan, 2024), its distributional



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consequences remain underexplored. In particular, existing studies pay limited attention to how pre-existing structural dependencies may function as transmission channels through which geopolitical shocks affect domestic income inequality. At the same time, while dependency theory provides a useful framework for understanding structural inequality, it typically treats dependency as a stable condition, offering limited insights into how such relationships intensify during periods of geopolitical disruptions. This creates a critical gap in understanding how geopolitical shocks interact with dependency structures to shape inequality outcomes. To address this gap, this study examines whether the Russia–Ukraine war affects income inequality across post-Soviet countries and whether this effect varies according to countries’ degree of economic dependency on Russia. Building on dependency theory, this study advances a shock-activated dependency theory, which explains how geopolitical shocks transform existing dependency structures into channels through which inequality is transmitted.

This study uses the fully modified ordinary least squares (FMOLS) model using a panel data set of 10 post-Soviet countries over the period 1998–2023. The findings indicate that the Russia–Ukraine war is associated with increased income inequality, with stronger effects observed in economies characterised by greater economic dependency on Russia, particularly through remittances.

This study contributes to the literature in two ways. First, it modernises dependency theory by advancing a shock-activated dependency theory, which reconceptualises dependency as a dynamic and shock-responsive condition that becomes inequality-producing when geopolitical shocks disrupt key economic linkages. Second, it provides new empirical evidence that the inequality effects of the Russia–Ukraine war vary according to countries’ degrees of economic dependency on Russia. The study also provides evidence on whether the Russia–Ukraine war has contributed to deglobalisation or the restructuring of globalisation patterns within the region. The paper is organised as follows: [Section 2](#) reviews the literature, [Section 3](#) presents the theoretical framework, [Section 4](#) outlines the methodology, [Section 5](#) reports the results, [Section 6](#) discusses the results and [Section 7](#) concludes.

2. Literature review

A growing body of literature has investigated the consequences of wars and geopolitical risks on income inequality. Several studies have found that wars intensify income inequality by disrupting labour markets, weakening fiscal capacity and intensifying structural vulnerabilities ([Bircan *et al.*, 2010](#); [Caruso and Biscione, 2022](#); [Dahlum *et al.*, 2019](#)). However, evidence from Iran shows that conflict can temporarily reduce inequality when economic contraction disproportionately affects higher-income groups ([Farzanegan and Kadivar, 2023](#)). Nevertheless, [Parson and Naghshpour \(2023\)](#) found that internal conflict increases inequality in developing countries but has no significant impact in developed ones. Recent research has increasingly focused on the Russia–Ukraine war as a major geopolitical shock. The [IMF \(2022a, b\)](#) reports that the conflict has contributed to rising global inequality through surging food and energy prices, disproportionately affecting vulnerable households and low-income countries, particularly in Central Asia and the Caucasus due to their economic proximity to Russia. Similarly, [Guénette *et al.* \(2022\)](#) found that the war has weakened global economic prospects by triggering inflationary pressures, financial market volatility and disruptions to trade and remittance flows across Eastern Europe, the South Caucasus and Central Asia, with significant implications for poverty and inequality in economies heavily dependent on commodity imports or remittances from Russia. [Grabowski and Voytsekhovska \(2024\)](#) further showed that the war has adversely affected inequality in the BRICS (Brazil, Russia, India, China, and South Africa) economies. Evidence from [UNDP \(2022\)](#) revealed that the conflict generated heterogeneous welfare outcomes in remittance-dependent countries such as Armenia, Kyrgyzstan and Tajikistan as rising prices exerted uneven impacts on poverty and income distribution. Beyond the Russia–Ukraine war, [Sweidan \(2023a\)](#) found that geopolitical risks reduce inequality in the short run but increase it in the long run in the USA.

Extending this perspective, [Sweidan \(2023b\)](#) found that geopolitical risks exacerbate income inequality across 18 countries by increasing uncertainty and economic disruption. Similarly, [Wu et al. \(2022\)](#) found that geopolitical risks exacerbate inequality in 19 emerging countries. Despite these insights, existing studies provide limited explanations for why the inequality effects of geopolitical shocks differ across countries or how pre-existing structural conditions shape these distributional outcomes.

Beyond geopolitical disruptions, the literature on globalisation highlights additional mechanisms through which external economic integration shapes income inequality. Trade openness (TO), a key channel of global integration, has been found to both increase and reduce inequality. Studies conducted by [ElOrabi et al. \(2025\)](#), [Kim \(2022\)](#), [Licong et al. \(2023\)](#), [Liu and Liu \(2025\)](#); [Sattar and Khan \(2021\)](#) and [Song et al. \(2021\)](#) found that TO increases income inequality by favouring skilled labour and capital-intensive sectors. Evidence from Bangladesh further indicates that export expansion significantly widens inequality due to the concentration of gains in specific sectors such as ready-made garments, whereas imports show an insignificant but inequality-reducing effect ([Chowdhury et al., 2021](#)). However, other empirical contributions suggest that the distributional consequences of TO may be inequality-reducing under certain structural conditions. [De Wettinck and Van Mourik \(2024\)](#), [Fang and Qamruzzaman \(2021\)](#) and [Tabash et al. \(2024\)](#) argued that integration into global markets can expand employment opportunities and narrow wage differentials, particularly when trade promotes labour-intensive sectors. Country-specific evidence supports this conditional perspective. [Khan et al. \(2021\)](#) showed that the inequality effects of trade globalisation in Pakistan depend on sectoral production shifts, with agricultural expansion reducing inequality and capital-intensive sector growth increasing it. Conversely, [Dorn et al. \(2021\)](#) showed divergent effects, with trade increasing inequality in advanced economies while reducing it in emerging and developing countries. Similar empirical evidence shows that the relationship between foreign direct investment (FDI) and income inequality is inconclusive. While several studies found that FDI inflows increase income inequality due to their skill-biased nature and concentration in capital-intensive sectors ([Kim, 2022](#); [Song et al., 2021](#); [Tavadyan and Ghazaryan, 2022](#); [Tung and Thang, 2022](#)), others found that it reduces inequality by creating jobs and fostering technology transfer ([Rezk et al., 2022](#); [Licong et al., 2023](#); [Naoaj, 2023](#); [Rezk et al., 2022](#); [Salem and Rezk, 2022](#); [Tabash et al., 2024](#)). These contradictory findings suggest that the distributional effects of globalisation are conditional rather than uniform, depending on structural and institutional factors.

Among the various channels of globalisation, remittances have received particular attention as they represent one of the largest transnational income flows linking domestic economies to external labour markets. However, the remittance–inequality nexus remains mixed because its distributional effects depend on recipient households, labour-market structures and the stage of migration transition. A central argument in the literature suggests that remittances reduce inequality when they are received predominantly by low- and middle-income households but may exacerbate inequality when access to migration opportunities is concentrated among relatively wealthier groups. Numerous studies document the inequality-reducing effects of remittances. For example, [Anwar et al. \(2023\)](#), [Azizi \(2021\)](#), [Fang and Qamruzzaman \(2021\)](#), [Islam and Azad \(2023\)](#), [Owamah et al. \(2025\)](#) and [Pal et al. \(2021\)](#) found that remittances contribute to narrowing income disparities by increasing household consumption and supporting poverty alleviation. In Bangladesh, [Ahmed et al. \(2021\)](#) demonstrated that international remittances increase inequality, while internal remittances reduce it. [Joldoshov \(2022\)](#) found that in Kyrgyzstan, remittances slightly improve income distribution, particularly in rural areas. Similar conclusions are drawn in crisis-context studies, such as [Ghandour et al. \(2025\)](#), who revealed that remittances play a stabilising role in reducing long-run inequality in Lebanon. Conversely, other studies highlight the inequality-increasing effects of remittances. [Song et al. \(2021\)](#) found that in 20 major remittance-receiving economies, remittances can widen income disparities by disproportionately benefiting skilled migrants and their households. Similar conclusions are reported in

regional studies such as [ElOrabi et al. \(2025\)](#), who showed that remittances increase inequality in Middle East and North Africa countries due to the concentration of migration opportunities among relatively advantaged households. This highlights remittances as both a stabilising force and a source of inequality, depending on the underlying socio-economic conditions.

Dependency theory provides a broader theoretical framework for understanding the role of external economic relationships in shaping development trajectories. Empirical studies show that higher levels of dependency are associated with external vulnerability, macroeconomic instability and uneven development outcomes ([Gasiorowski, 1988](#); [Kaufman et al., 1975](#); [Sullivan, 1983](#)). Later studies extended these arguments by showing that dependent countries' income levels, business cycles and welfare outcomes are shaped by dominant patron economies through channels such as aid, tourism, FDI and trade ([Armstrong and Read, 2000](#); [Bertram, 2004](#); [Dunn, 2011](#); [McElroy and Pearce, 2006](#); [McElroy and Parry, 2012](#)). More recent evidence reaffirms the contemporary relevance of dependency structures. [Bhandari and Shirazi \(2022\)](#) found that the global digital divide across 133 countries was exacerbated by dependency through FDI and export concentration. Similarly, [Balcilar et al. \(2016\)](#) demonstrated strong dependency relationships between Cyprus and Greece, and Northern Cyprus and Turkey, where economic growth in the periphery remained closely tied to that of the patron economy. Nevertheless, the existing literature continues to conceptualise dependency primarily as a static structural condition, providing limited insight into how dependency behaves during periods of geopolitical disruptions.

The literature reveals two important gaps. First, although previous studies establish that wars, geopolitical risks, TO, FDI and remittances all influence income inequality, these strands of research have largely evolved independently. Existing studies rarely explain why the inequality effects of geopolitical shocks differ across countries, while studies on globalisation focus on individual transmission channels without considering how geopolitical shocks alter their distributional effects. Second, despite recognising dependency as a source of structural vulnerability, existing research largely treats it as a stable condition rather than examining how geopolitical shocks activate dependency relationships and transform them into channels through which external shocks are transmitted into domestic income distribution. These gaps are particularly evident in the context of the Russia–Ukraine war, where the interaction between geopolitical shocks, dependency structures and income inequality remains understudied in the post-Soviet region. The following section develops the theoretical framework and hypotheses that address these gaps.

3. Theoretical framework

Dependency theory provides a foundational framework for understanding persistent global income inequality. Originally developed by [Prebisch \(1950\)](#) and [Frank \(1966\)](#), the theory argues that developing economies remain underdeveloped due to their reliance on advanced economies through trade, investment and labour migration. These asymmetric relationships generate unequal exchange, external control of resources and long-term structural subordination, resulting in uneven development and persistent inequality. Despite its enduring relevance, dependency theory conceptualises dependency primarily as a stable structural condition that reproduces development constraints and inequality. Nevertheless, it provides limited insights into how dependency behaves during geopolitical disruptions or why countries with similar dependency structures may experience different inequality outcomes following the same external shock.

To address this limitation, this study advances a shock-activated dependency theory, which reconceptualises dependency as a dynamic condition that becomes inequality-producing when activated by geopolitical shocks. Under this framework, external relationships, including trade, remittances and energy dependence, function as transmission channels through which external shocks affect domestic income distribution. Unlike classical dependency theory, this framework further recognises that dependency relationships may be reconfigured as countries

diversify external economic linkages following geopolitical disruptions, implying that dependency is dynamic rather than deterministic.

The Russia–Ukraine war provides a relevant context for examining this theoretical proposition. By disrupting trade, remittances, energy and labour-market linkages, geopolitical shocks increase living costs, reduce external income and weaken employment opportunities, particularly for vulnerable households. Existing evidence shows the Russia–Ukraine war disrupted food, energy, trade and remittance markets across the post-Soviet region (Guénette *et al.*, 2022). Together, these theoretical arguments and empirical evidence suggest that geopolitical shocks are likely to exacerbate income inequality. Therefore, the following hypothesis is proposed:

- H1.* The Russia–Ukraine war has a positive effect on income inequality in post-Soviet countries.

Furthermore, the shock-activated dependency theory argues that the distributional effects of geopolitical shocks depend on countries' degree of structural dependency. Economies with stronger trade, remittance and energy linkages are expected to experience larger inequality effects because external shocks are transmitted more directly through these channels. This proposition is supported by evidence showing that remittance-dependent economies such as Kyrgyzstan experienced substantial economic disruptions following sanctions on Russia and declining economic activity during the Russia–Ukraine war, while countries highly dependent on Russian energy faced rising costs that disproportionately affected lower-income households (IMF, 2022a, b; UNDP, 2022). Together, these arguments suggest that the inequality effects of the Russia–Ukraine war should be more pronounced in economies with stronger economic dependency on Russia. Therefore, the following hypothesis is proposed:

- H2.* The effects of the Russia–Ukraine war on income inequality vary across countries, with positive effects in countries with higher levels of economic dependency on Russia.

Overall, the proposed shock-activated dependency theory extends classical dependency theory by explaining how geopolitical shocks transform existing dependency structures into channels through which external shocks are transmitted into domestic income distribution. Rather than viewing dependency as a continuously constraining structural condition, it reconceptualises dependency as a dynamic source of vulnerability whose distributional consequences emerge when geopolitical disruptions activate existing economic linkages. The hypotheses derived from this framework are empirically examined using the methodology presented in the following section.

4. Data and methodology

4.1 Data

This study uses a balanced panel data set covering 10 post-Soviet countries: Armenia, Azerbaijan, Belarus, Estonia, Kazakhstan, Kyrgyzstan, Latvia, Lithuania, Russia and Ukraine, over the period 1998–2023. The dependent variable is the Gini coefficient, which measures income inequality. The main independent variable is the Russia–Ukraine war, represented by a dummy variable, taking the value of 1 for 2022 and 2023 and 0 otherwise. To capture the conditional role of economic dependency during the war, an interaction term between the war dummy and remittances is incorporated ($\text{War} \times \text{Dependency}$). Remittance inflows are operationalised as a proxy capturing one dimension of economic dependency, reflecting the extent to which household income dynamics rely on cross-border labour income. These flows represent an important channel through which geopolitical disruptions may affect domestic income distribution. Accordingly, the interaction term examines whether the war's inequality effects vary according to countries' exposure to dependency-related financial linkages.

The empirical model further includes several macroeconomic control variables. Trade openness (*TO*) and foreign direct investment (*FDI*) capture globalisation-related integration effects that may influence income distribution. Remittances inflows (*REM*) are included separately to distinguish their direct distributional effect from their conditional interaction with the war. Gross domestic product per capita (*Y*) captures growth-related structural transformation, while the unemployment rate (*UNEMP*) and inflation rate (*INF*) account for labour-market conditions and the distributional effects of price instability. To account for concurrent global macroeconomic disturbances, Brent crude oil price (*OIL*) is included to capture energy-market volatility and broader inflationary transmission channels. All variables are in their natural logarithmic form to mitigate non-normality and variations. Data were sourced from the World Bank, World Inequality Database, Energy Information Administration and KOF Globalisation Index.

Prior to estimation, standard diagnostic tests were conducted for multicollinearity, heteroskedasticity and serial correlation. The results indicate no evidence of multicollinearity and heteroskedasticity (Tables S1 and S2), while serial correlation was detected and addressed through the estimation technique used (Table S3).

4.2 Empirical model

Drawing on the theoretical framework, the following empirical model is specified to examine the effects of the Russia–Ukraine war on income inequality and the conditional role of economic dependency while controlling for relevant macroeconomic factors.

$$\begin{aligned} \ln \text{Gini}_{it} = & \beta_0 + \beta_1 \text{Dummy}_{it} + \beta_2 \ln Y_{it} + \beta_3 \ln \text{TO}_{it} + \beta_4 \ln \text{FDI}_{it} + \beta_5 \ln \text{UNEMP}_{it} \\ & + \beta_6 \ln \text{REM}_{it} + \beta_7 \ln \text{INF}_{it} + \beta_8 (\text{War} \times \text{Dependency})_{it} + \beta_9 \ln \text{Oil}_{it} + \varepsilon_{it} \end{aligned}$$

The subscript *i* denotes countries (1, 2, . . . , 10), *t* denotes time period (1998–2023) and ε_{it} is the error term.

4.3 Methodology

4.3.1 Panel unit root tests. This study uses the FMOLS model to examine the effects of the Russia–Ukraine war on income inequality. As a prerequisite for FMOLS estimation, panel unit root tests were applied to identify the presence of long-run characteristics in each variable. Both the Levin-Lin-Chu (LLC) and Im-Pesaran-Shin (IPS) panel unit root tests were applied. The results reported in Table S4 indicate that all variables are stationary at first difference, confirming that variables are integrated of order one, *I* (1). This uniform order of integration across variables satisfies the first condition for applying the FMOLS model.

4.3.2 Cointegration test and model validation. To examine the existence of a long-run relationship between the variables, co-integration among the variables was tested. Given the possibility of heterogeneous slopes across countries, a slope homogeneity test was first conducted. The results confirmed the presence of heterogeneity (Table S5). Therefore, the Pedroni panel co-integration test, which is robust to heterogeneity, was applied. By rejecting the null hypothesis, the results indicate that variables are co-integrated, thereby validating the application of the FMOLS model.

4.3.3 Fully modified OLS model. This study applies the fully modified OLS model, a co-integration model developed by Pedroni (2001) that provides estimates for the long-run relationships between variables. The FMOLS model was selected due to the following reasons: it accounts for the small sample size and corrects for endogeneity and serial correlation, which is confirmed by the Wooldridge test. Additionally, it accommodates heterogeneity across cross-sectional units. Moreover, since this study investigates how the Russia–Ukraine war affects income inequality in each of the post-Soviet countries separately, the model was also estimated on a country-level basis. To further examine the potential reverse

causality between inequality and key macroeconomic variables, the Dumitrescu and Hurlin (2012) panel Granger causality test was applied. The results indicate no evidence of bidirectional causality, thereby supporting the direction of the long-run relationships estimated by the FMOLS model (Table S6). The following section represents the country-specific FMOLS results.

5. Empirical results

This section shows the country-by-country results of the FMOLS model, which are presented in Table 1. The pooled-FMOLS results are reported in Table S7.

The FMOLS results reveal that the coefficient of the Russia–Ukraine war dummy is positive and statistically significant for Belarus, Kyrgyzstan and Ukraine, with the largest effect observed in Ukraine, indicating that the war increased income inequality in these countries. Conversely, significant negative coefficients are observed for Armenia, Azerbaijan, Estonia, Latvia and Lithuania, while the coefficients for Kazakhstan and Russia are statistically insignificant. These findings provide partial support for H1, suggesting that although the Russia–Ukraine war increased income inequality in several post-Soviet countries, its effects were not uniformly positive across the region.

The interaction term between the Russia–Ukraine war and economic dependency on Russia is statistically significant and positive in Armenia, Kyrgyzstan and Ukraine, indicating that stronger economic dependency amplifies the war's inequality effects. Conversely, significant negative interaction coefficients were found for Azerbaijan, Kazakhstan, Latvia and Lithuania. These findings support H2, demonstrating that the effect of the Russia–Ukraine war on income inequality varies with countries' degrees of economic dependency on Russia.

The control variables display substantial cross-country variation. TO, FDI, remittances, inflation, energy prices, economic growth and unemployment exhibit both positive and negative associations with income inequality, reflecting diverse economic structures across post-Soviet economies. The following section discusses these findings through the lens of the proposed shock-activated theory.

6. Discussion

6.1 The Russia–Ukraine war–income inequality nexus

The Russia–Ukraine war generated substantial distributional consequences across the post-Soviet region, although the magnitude of these effects differed considerably across countries, with Ukraine experiencing the most pronounced inequality pressures. The war triggered mass displacement, disrupted essential services and caused economic contraction and rising inflation, disproportionately affecting low-income households (IOM, 2025). At the same time, Ukraine's unemployment rate rose from 9.8% to 33.6% due to infrastructure destruction, the collapse of private enterprises and the paralysis of many sectors during the conflict period, further intensifying inequality (Andrienko *et al.*, 2025; UNDP, 2024).

The Russia–Ukraine war has accelerated global economic restructuring and shifts in globalisation patterns and international treaty alignments (Broner *et al.*, 2025). Consequently, the post-Soviet region has become divided into Western- and Russia-aligned countries, with varying impacts on income inequality during the war period. For instance, Armenia has moved away from its traditional reliance on Russia, pursuing closer ties with the European Union (EU), the USA and Turkey. It suspended participation in the Russia-led Collective Security Treaty Organisation (CSTO) and instead received EU military aid via the European Peace Facility and signed a strategic partnership with the USA to enhance economic cooperation and security, strengthen democracy and increase people-to-people exchanges, reflecting a shift in global treaty alignment (Karabashian, 2024; Sukiasyan, 2024). Following the conflict in Ukraine, some multinationals relocated operations from Russia to Armenia due to its political stability, while an influx of Russian emigrants to the country has brought in a new qualified

Table 1. Country-specific FMOLS results

Country	Dummy	War × Dependency	INF	Oil	TO	FDI	Y	REM	UNEMP
Armenia	−0.29 ***	0.93 ***	0.99***	0.32 ***	0.17 ***	0.11*	−0.15*	−0.15***	0.10 ***
Azerbaijan	−1.13 ***	−0.94 **	0.09***	−0.15 ***	0.19***	0.18***	−0.11 ***	0.01	−0.12
Belarus	0.54 ***	0.10	0.13**	0.16 ***	−0.31 ***	0.13 ***	−0.28 **	−0.05	−0.30 ***
Estonia	−0.31 **	−0.05	0.08 **	0.05	1.22 ***	0.10 ***	0.06 ***	−0.04	−0.13 ***
Kazakhstan	−0.07	−0.51***	0.10***	−0.10**	0.01	0.02	0.03	−0.09 ***	−0.04
Kyrgyzstan	1.68***	5.45***	0.26***	0.89 ***	0.38 ***	0.07 ***	−0.14 ***	−0.15 ***	0.14 ***
Latvia	−0.17***	−0.15*	0.07***	0.43 ***	0.00	−0.03	0.03***	−0.06***	−0.12 ***
Lithuania	−0.37***	−0.57***	0.05 *	0.23 ***	1.14 ***	0.08 ***	0.06***	0.05 ***	0.02 ***
Russia	0.10	0.04	0.10**	0.30**	0.30**	0.50 **	0.13***	0.00	−0.08
Ukraine	8.69***	2.77 ***	1.75***	0.65 ***	−1.52 ***	0.19 ***	0.01	−0.22 ***	0.23***

Note(s): Values represent coefficients*** $p < 0.01$, ** $p < 0.05$ and * $p < 0.10$

workforce, contributing to a relative decline in income inequality in Armenia. [Figure S1](#) shows that while FDI stagnated in Russia and Ukraine due to heightened geopolitical risk, Armenia became the region's largest FDI recipient, benefiting from political stability and strategic location ([Drapkin et al., 2023](#); [Nelson, 2023](#)). These trends reflect “friend-shoring” and “de-risking” rather than deglobalisation, illustrating how peripheral economies can gain strategic advantage by diversifying dependencies ([Baldwin and Ruta, 2025](#)). More broadly, this supports the argument that dependency relationships are dynamic and can be reconfigured in response to geopolitical shocks.

In contrast, Russia-aligned countries faced several challenges. Due to its political and economic ties with Russia, Belarus experienced severe diplomatic isolation and sanctions targeting key sectors. The resulting economic downturn has exacerbated inequality, disproportionately affecting lower-income groups ([European Council, 2024](#)). Kyrgyzstan, due to its heavy dependence on remittances from Russia and oil imports, experienced rising inequality pressures ([Blackwood et al., 2023](#); [IMF, 2025](#)). Dependency theorists explain that countries closely tied to dominant powers are vulnerable to external shocks that may amplify inequality when domestic economic diversification is limited. On the contrary, Western-aligned countries, notably the Baltics, benefited from EU support mechanisms, including refugee assistance, energy stabilisation measures and coordinated fiscal responses, which helped mitigate the distributional consequences of the war ([European Parliament, 2025](#)). These cross-country differences suggest that dependency becomes inequality-producing when geopolitical shocks interact with concentrated economic linkages, while diversified institutional integration can enhance resilience.

Following the Soviet Union's collapse, Russia emerged as a major immigration destination and the region's main source of remittances ([Urinboyev and Eraliev, 2022](#)). Across the region, the war disrupted these migration and remittance patterns. Ukraine experienced a sharp rise in outward migration, while several neighbouring countries received displaced Ukrainians ([Amit et al., 2024](#); [IOM, 2022](#)). At the same time, remittance inflows to countries such as Armenia and Kyrgyzstan declined due to sanctions-related financial disruptions ([Ratha and Kim, 2022](#); [Sealand, 2022](#)). As for Ukraine, remittances declined due to lower inflows from Poland, the main remittance – sending country – together with a decrease in wages of Ukrainian migrants working abroad ([Maciucă and Peleah, 2023](#)). This supports the shock-activated dependency theory by showing that migration and remittance dependencies, which may reduce inequality during stable conditions, can become channels of vulnerability when disrupted by geopolitical shocks.

From a trade perspective, the war significantly disrupted regional trade patterns. Ukraine witnessed a major decline in its exports, as shown in [Figure S2](#), due to the export bans, Russia's threat to Ukrainian shipping in the Black Sea and the international sanctions. Despite the imposition of trade sanctions on Russia, this has not resulted in deglobalisation; rather, it has accelerated trade reorientation. Due to the invasion and the sanctions imposed by the West, Russia shifted exports from Western markets to China, India, Turkey, Japan and South Korea, promoting trade within friendly blocs, as illustrated in [Figure S2](#). In post-Soviet countries, trade patterns also shifted. Armenia and Kazakhstan became key intermediaries in redirecting Russian goods to global markets, a phenomenon referred to as “transit trade” ([Grigoryan, 2024](#)). Azerbaijan, by virtue of its natural resources and strategic location, has come out as a relative beneficiary of the geopolitical restructuring process. The war increased Azerbaijan's importance to Europe, which needs both the country's energy resources and its position on the East–West transit routes to reduce dependence on Russia. Simultaneously, Russia values Azerbaijan's position on the North–South transit routes, allowing it to circumvent Western sanctions ([Huseynli, 2024](#)). Accordingly, Azerbaijan benefited from high oil and gas prices, allowing the government to expand subsidies and public wages ([Figure S3](#)). This coincided with a relative reduction in inequality pressures in Azerbaijan during the war period.

Although Russia is the main party in the conflict, it has not experienced physical warfare on its ground. Instead, its economy has been affected primarily through sanctions, trade

restrictions and capital flight. While these factors have generated significant economic challenges including inflationary pressures, decreased FDI and supply chain disruptions, Russia's core economic infrastructure remains largely intact and the Russian economy has proven to be robust (Libman, 2025). Despite initiating the conflict and facing sweeping sanctions, Russia's inequality response remains insignificant, reflecting several offsetting factors. The conflict is geographically external to most Russian territory, sparing most of the population from direct economic shocks. Russia's tightly controlled political economy, strong state intervention, wage regulations and redistributive mechanisms likely stabilised income distribution in the short run (Pichon and Russell, 2022). Moreover, sanctions and economic isolation have primarily targeted the middle- and upper-income groups, while lower-income groups depend more on government transfers and pensions, which have been maintained or increased to some extent (OECD, 2023). Additionally, Russia's import substitution policies and fiscal stimulus have partly offset economic contraction, preventing drastic shifts in inequality measures.

6.2 Dependency amid the Russia–Ukraine war

The heterogeneous effects across countries suggest that dependency conditioned the distributional consequences of the Russia–Ukraine war. Rather than affecting all economies equally, the war amplified inequality primarily where external economic linkages were highly concentrated. This supports the central proposition of the proposed shock-activated dependency theory that dependency becomes inequality-producing when geopolitical shocks disrupt existing economic relationships. The strongest effects are evident in Kyrgyzstan, a structurally remittance-dependent economy where labour income, primarily from Russia, constitutes a major source of household welfare. As remittances finance basic consumption, many families have no savings to cushion the shocks triggered by a decline in remittances, thereby affecting their ability to meet basic nutrition, health and education needs (IOM, 2023). Similarly, in Ukraine, while the direct destruction associated with warfare constitutes the primary driver of inequality, remittance dependency amplifies these effects by exposing households to external income volatility. Despite diversification, Ukraine's reliance on remittance inflows, largely from Poland, illustrates how geopolitical shocks can deepen structural vulnerabilities when income-generating linkages are disrupted. In contrast, in Azerbaijan and Kazakhstan, resource-rich economies that are not primarily remittance-dependent, the interaction term is negative, indicating that alternative income sources, particularly resource-based revenues, mitigate the inequality-amplifying effects of external dependency. This finding supports the notion that diversification reduces structural vulnerability associated with dependency, enabling nations to absorb geopolitical shocks without transmitting their effects disproportionately to lower-income individuals. Similarly, in EU economies such as Estonia, Latvia and Lithuania, institutional coordination and access to supranational stabilisation mechanisms appear to have weakened the dependency-inequality transmission channel, illustrating how integration into diversified economic blocs can alter the structural conditions underpinning dependency dynamics. Consistent with the theoretical framework, these findings suggest that geopolitical shocks transform external dependencies into inequality-transmission mechanisms. In stable periods, remittance dependency may support consumption smoothing and poverty reduction; however, under geopolitical disruptions, the same linkages can amplify vulnerability by exposing domestic income structures to external instability. This directly supports the central proposition that dependency becomes inequality-producing when disrupted by geopolitical shocks.

6.3 Global energy Prices and income inequality

Energy dependence emerged as an important channel through which geopolitical shocks affect income distribution. In energy-importing economies such as Armenia, Kyrgyzstan, Ukraine and the Baltics, higher oil prices are associated with rising inequality pressures. This reflects

the inflationary transmission channel through which increases in global energy costs translate into higher domestic prices, disproportionately affecting lower-income households. This finding aligns with [Coccia and Russo \(2025\)](#), who show that energy price increases in import-dependent economies erode the purchasing power of vulnerable groups. From the perspective of the shock-activated theory, energy dependence operates as a channel through which external shocks are transmitted into domestic income distribution. While reliance on imported energy may not generate immediate distributional consequences during stable periods, geopolitical disruptions can activate this dependency by exposing households to external cost volatility. Among energy-exporting economies, the results reveal divergent distributional patterns. In Russia, higher energy prices intensify inequality, suggesting that resource rents may disproportionately benefit higher-income groups or capital-intensive sectors. In contrast, in Azerbaijan and, to a lesser extent, Kazakhstan, higher oil prices are associated with more favourable distributional outcomes. Higher energy prices increase export revenues and expand fiscal space, enabling governments to implement redistributive policies and social spending that can mitigate inequality pressures ([IMF, 2024](#)). These findings are consistent with comparative evidence suggesting that oil price increases tend to exacerbate inequality in oil-importing countries while decreasing it in oil-exporting countries ([Tan and Uprasen, 2023](#)). These findings suggest that the same external linkage, energy dependence, can either amplify inequality by exposing economies to external shocks or reduce it by generating stabilising revenue streams and fiscal capacity.

6.4 Trade openness and income inequality

The relationship between TO and income inequality varies across the post-Soviet region, reflecting differences in countries' production structures and export composition. In labour-intensive economies such as Ukraine, TO appears to reduce income inequality by expanding employment opportunities and broadening income gains. Similarly, in Belarus, state-led industrial policies and relatively compressed wage structures enable the benefits of external integration to be distributed more evenly across the population. In contrast, in Armenia, Azerbaijan and Russia, where exports are concentrated in mining, hydrocarbons and other capital-intensive industries, the gains from trade accrue disproportionately to capital owners and higher-income groups, thereby widening income disparities. A similar pattern is observed in the Baltics, particularly Estonia and Lithuania, where deeper integration into global value chains has increased returns to skilled labour and capital, contributing to wider wage dispersion. These findings suggest that the distributional effects of TO depend on countries' factor endowments, sectoral composition and institutional capacity to distribute the gains from international integration.

6.5 FDI and income inequality

FDI is associated with higher income inequality across several post-Soviet economies, reflecting the skill-biased and sector-concentrated nature of foreign investment in transition economies. In Armenia, Azerbaijan, Belarus, Estonia, Kyrgyzstan, Russia and Ukraine, foreign investment is concentrated in resource extraction, energy production, mining and technologically advanced industries, benefiting skilled labour and capital more than low-skilled workers. This concentration widens wage differentials and regional disparities, thereby increasing income inequality. These findings are consistent with previous evidence showing that the distributional effects of FDI depend on sectoral specialisation and institutional conditions ([Supic et al., 2024](#)).

6.6 Economic growth and income inequality

In Armenia, Azerbaijan, Belarus and Kyrgyzstan, economic growth is associated with lower income inequality, suggesting that growth operates through relatively inclusive channels,

including employment creation, consumption expansion, public redistribution and remittance-supported household income. In contrast, in the Baltics and Russia, economic growth is associated with higher income inequality, reflecting skill-biased structural change and capital-intensive sectoral expansion. In the Baltic states, deeper integration into global value chains and technological upgrading has increased returns to human capital, widening wage dispersion despite improvements in overall living standards. This finding is consistent with evidence showing that technological progress may reduce inequality at earlier stages of development but increases it as technological advancement intensifies, particularly where institutional capacity and human capital differ across regions (Hoang and Le, 2024). A similar pattern is observed in Russia, where growth driven by resource-intensive and capital-concentrated sectors disproportionately benefits higher-income groups. This interpretation is consistent with Fawaz and Rahnama (2022), who argue that the distributional effects of economic growth depend on countries' structural characteristics.

6.7 Inflation and income inequality

Inflation emerges as a determinant of income inequality across the post-Soviet region. Rising price levels erode the real purchasing power of wages, pensions and fixed social transfers. This erosion tends to disproportionately burden lower-income households, whose consumption baskets are more heavily weighted towards essential goods and who possess limited capacity to hedge against inflation through financial assets or income diversification. In contrast, higher-income groups are better positioned to adjust through investment income, asset revaluation or wage bargaining mechanisms. Therefore, persistent inflation widens inequality by reducing real incomes among vulnerable households more sharply than among wealthier ones (Glawe and Wagner, 2024).

6.8 Remittances and income inequality

The inequality-reducing effect of remittances observed in Armenia, Kazakhstan, Kyrgyzstan, Latvia, Lithuania and Ukraine suggests that remittance inflows contribute to narrowing income disparities in these economies. This finding is consistent with the consumption-smoothing hypothesis, whereby remittances provide a stable source of income for lower- and middle-income households, particularly in labour-exporting economies characterised by limited domestic employment opportunities. In highly remittance-dependent economies such as Kyrgyzstan and Armenia, remittances mitigate income volatility and reduce distributional pressures. In contrast, in Lithuania, migrant households benefit from enhanced income and better living standards, while non-migrant households are excluded, widening interpersonal and inter-household disparities (Guzi *et al.*, 2021). This highlights that even in high-income countries, the unequal access to migration opportunities can intensify inequality.

6.9 Unemployment and income inequality

The heterogeneous relationship between unemployment and income inequality reflects differences in labour market institutions and social protection systems across the post-Soviet region. In Estonia and Latvia, progressive taxation and robust social safety nets mitigate the distributional effects of unemployment, consistent with recent evidence highlighting the importance of government transfers in moderating the unemployment–inequality nexus (Ahmed and Shadmani, 2024). Similarly, Belarus maintains low unemployment through state-led employment policies rooted in the Soviet principle that “he who does not work, shall not eat”, contributing to compressed wage structures and lower inequality (Ellman, 2007). Conversely, in Armenia, Kyrgyzstan and Ukraine, widespread informal employment and weaker social protection amplify the inequality effects of unemployment. A similar pattern is evident in Lithuania, where unemployment benefits are lower than in the other Baltic states.

The Russia–Ukraine war represents a critical geopolitical shock that amplified existing vulnerabilities, particularly in economies with strong economic links to Russia. Rather than affecting all countries uniformly, the conflict produced heterogeneous distributional outcomes shaped by countries' economic structures. Moreover, the effects of TO, FDI, inflation and energy prices demonstrate that globalisation continues to influence income inequality through multiple channels. Furthermore, the descriptive analysis suggests that the conflict has not diminished globalisation but rather reshaped its patterns across the region. Overall, the findings provide strong empirical support for the proposed shock-activated dependency theory and contribute to the modernisation of classical dependency theory. Rather than exerting uniform effects, dependency generates different distributional outcomes depending on how geopolitical shocks interact with existing economic linkages and domestic economic structures. While external economic linkages can support growth and resilience during stable periods, geopolitical disruptions can transform them into channels of vulnerability, transmitting external shocks into domestic income distribution and amplifying inequality. These findings underscore the need for nuanced policies that address inequality amid the evolving geopolitical challenges.

7. Conclusion and policy implications

The Russia–Ukraine war is the largest driver of income inequality in the post-Soviet region, with the most significant impact observed in Ukraine. In contrast, Russia's relatively resilient economy appears to have moderated the war's impact on domestic inequality. Nevertheless, countries with stronger economic links to Russia, particularly Kyrgyzstan and Belarus, experienced more pronounced inequality pressures, reflecting their historical and structural dependence. Conversely, countries like Azerbaijan reaped war benefits due to favourable shifts in trade patterns. The interaction between the war and economic dependency, proxied by remittance inflows, is positive and significant, indicating that dependency channels may amplify inequality during periods of geopolitical disruption, particularly in highly remittance-dependent economies. In addition, TO, FDI, inflation and rising oil prices are associated with widening income inequality, although their effects vary across countries depending on structural and institutional characteristics. In contrast, remittance inflows, unemployment and economic growth reduce inequality. The empirical findings support the shock-activated dependency theory by demonstrating that the inequality effects of dependency are conditional on geopolitical shocks. While dependency may remain dormant during stable periods, geopolitical disruptions can activate existing economic linkages as channels through which external shocks are transmitted into domestic income distribution. By activating external income vulnerabilities embedded within migration and economic linkages, the Russia–Ukraine war generated heterogeneous inequality responses across the post-Soviet region, reflecting differences in structural dependency, economic diversification and institutional resilience.

Building on the analysis, the findings of this study carry several policy implications. Countries with stronger economic links to Russia experienced substantial economic pressures, including sanctions, declining remittances and energy dependence, which heightened inequality. This is consistent with dependency theory arguments that economies with concentrated external linkages are more vulnerable to shocks originating from dominant partners. In contrast, EU and North Atlantic Treaty Organization countries, particularly the Baltics, benefitted from institutional support that enabled energy diversification, fiscal cushioning and coordinated policy responses, thereby mitigating the war's distributional consequences. The Baltics have taken significant steps toward energy security by synchronising their former Soviet electricity systems with the Continental Europe Network and expanding Liquefied Natural Gas imports from alternative suppliers. These measures facilitated a reduction in reliance on Russian energy. Moreover, EU cohesion funds, refugee support and coordinated fiscal responses helped absorb economic pressures and contain

inequality. Russia, despite being directly involved in the conflict, exhibits a comparatively muted inequality response, likely reflecting strong state intervention through wage regulations, redistributive transfers, import substitution policies and fiscal stimulus.

These findings suggest that strengthening institutional frameworks is critical for enhancing resilience to geopolitical shocks. Existing regional arrangements such as the Eurasian Economic Union and the CSTO, while designed to provide economic and security integration, appear to have been less effective in mitigating the distributional consequences of sanctions and conflict-related disruptions. Armenia's recent distancing from the CSTO may reflect these limitations. A more effective strategy would involve diversifying economic partnerships, strengthening domestic institutional capacity, enhancing skills and labour market adaptability and reducing reliance on single external partners. Greater regional cooperation beyond traditional dependency structures may also help mitigate vulnerability to external shocks. Such strategies can promote more inclusive growth while protecting vulnerable populations from both economic and geopolitical risks. Beyond structural dependency, the results also carry implications for key macroeconomic drivers of inequality. Rising inflation highlights the need for targeted social protection and income-indexation policies to safeguard vulnerable households, including the adjustment of pensions and social transfers in line with inflation, temporary and targeted subsidies on essential goods such as food and energy and the expansion of cash transfer programmes aimed at low-income groups. In addition, automatic stabilisers such as unemployment benefits and minimum wage adjustments can help preserve real incomes and mitigate the regressive effects of price increases. The heterogeneous effects of oil price fluctuations suggest that energy-importing economies should prioritise diversification and price-stabilisation mechanisms. Furthermore, the inequality-increasing effects of FDI and TO underscore the importance of promoting inclusive integration strategies, including skill development, labour market policies and regulatory frameworks that enhance the distributional benefits of globalisation. Policies should aim to reduce the concentration of FDI and export activity in capital- and skill-intensive sectors by promoting labour-intensive industries and strengthening linkages between foreign firms and domestic economies. This can be achieved through targeted skill development programmes, vocational training and education policies that broaden access to higher-productivity employment, alongside incentives for firms to adopt more inclusive hiring practices. Enhancing the absorptive capacity of local labour markets is therefore essential to ensure that the gains from global integration are more evenly distributed across income groups.

This study is constrained by the limited availability of post-war data, which restricts the ability to capture the longer-term distributional effects of the Russia–Ukraine war. Future research could extend the analysis as additional data become available and apply the proposed shock-activated dependency framework to other regions, particularly those characterised by strong external economic dependencies, such as Africa, to assess its broader relevance and external validity.

Supplementary material

The supplementary material for this article can be found online.

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Further reading

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