

**CGPA WORKING PAPER**  
**2026-01**

# **Sanctions and Creative Trade: Evidence from Russia**

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**Global Policy Analysis**

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# Sanctions and Creative Trade: Evidence from Russia

Muharrem Çevik\*

## Abstract

This paper examines how sanctions affect Russia's bilateral creative trade, focusing on the sanction episodes following the 2014 annexation of Crimea and the 2022 full-scale invasion of Ukraine. Using annual bilateral data for 197 countries over the period 2002–2023 and drawing on recent advances in gravity-based trade estimation, the analysis situates sanctions involving Russia within a general-equilibrium-consistent global trade framework. The results show that sanctions involving Russia are associated with large and persistent declines in Russia's bilateral creative trade, with effects intensifying across successive sanction episodes. The magnitude of these effects varies substantially across partner countries and by sanction direction, suggesting notable heterogeneity in Russia's creative trade responses to sanctions.

Keywords: Creative Trade; Sanctions; Gravity Model; Russia  
JEL Codes: F13, F14, F51, Z10

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## 1. Introduction

Repeated cross-border interactions play a key role in fostering trust and facilitating convergence in beliefs, norms, and expectations between societies. In turn, a large literature shows that bilateral trust and cultural affinity are key determinants of international trade (Rauch 1999; Disdier and Mayer 2007; Guiso et al. 2009; Felbermayr and Toubal 2010). At the same time, evidence based on time-varying measures of cultural proximity indicates that bilateral trade systematically narrows cultural distance over time (Cyrus 2012; Maystre et al. 2014; Franco and Maggioni 2022). These mechanisms are especially important in sectors whose value is rooted in cultural expression and symbolic meaning, and in the intellectual capital embedded in them.

Sanctions run counter to these integrative forces. As restrictive policy measures, sanctions are used by one or more states to limit economic and political relations with a target in order to influence its behaviour (Morgan et al. 2009; 2023). By constraining transactions and access across multiple domains, they raise the cost and uncertainty of trade and can depress bilateral ties even where particular products or actors are not explicitly targeted (Crozet and Hinz 2020). Empirical evidence further indicates that such effects may extend beyond immediate trade margins, generating broader economic and political isolation of target states (Peksen 2009).

Creative trade provides a particularly revealing setting in which these integrative and disintegrative dynamics play out. Including activities such as crafts and design, books and publishing, photography, music, and the visual and performing arts, creative industries are characterised by their reliance on cultural expression, symbolic meaning, and intellectual capital (UNESCO 2022). Beyond their symbolic role, creative industries have also become a quantitatively important segment of the global economy. According to UNCTAD (2024), global exports of creative goods increased from around US\$200 billion in the early 2000s to over US\$700 billion by 2022. Because creative goods combine symbolic meaning and reputation with economic value, creative trade depends more heavily on long-term, trust-based relationships than on one-off transactions. As a result, it is particularly vulnerable to disruptions in bilateral ties.

This paper does not interpret creative trade as a direct measure of cultural values or identity. Rather, creative trade is treated as an observable component of international trade that is closely linked to symbolic content. Persistent declines in such trade therefore reflect constraints on symbolically intensive trade, without implying changes in underlying cultural

attitudes. Consistent with this interpretation, recent evidence shows that sanctions of various types significantly reduce bilateral cultural trade even when cultural trade is not explicitly targeted (Cevik et al. 2025). By focusing on creative trade, a broader category of symbolic activities, this study examines how sanctions affect a distinct segment of international trade.

The case of Russia provides a particularly clear illustration of these dynamics. Since the annexation of Crimea in 2014, and especially following the full-scale invasion of Ukraine in 2022, Russia has been subjected to an extensive and evolving sanctions regime, while simultaneously implementing countersanctions. A large literature documents the macroeconomic, sectoral, and firm-level consequences of these measures, including output contractions, disruptions to energy exports, firm exit, and trade diversion (e.g., Gurvich and Prilepskiy 2015; Dreger et al. 2016; Crozet and Hinz 2020; Balyuk and Fedyk 2023; Syropoulos et al. 2024; Yalcin et al. 2025; Hilgenstock et al. 2026). Despite this extensive evidence, the implications of sanctions for creative trade remain unexplored, an omission that is particularly salient given the exposure of creative trade to geopolitical fragmentation. Against this background, the paper asks whether sanctions imposed on and by Russia are associated with significant reductions in Russia's bilateral creative trade flows.

To address this question, the analysis draws on annual bilateral trade data covering 197 countries over the period 2002–2023 and employs recent advances in structural gravity estimation to examine how Russia-related sanctions have affected Russia's bilateral creative trade within a global, general-equilibrium-consistent framework. The empirical approach exploits the timing of successive sanction episodes, distinguishing between measures imposed prior to 2014, those following the annexation of Crimea, and those introduced after the 2022 full-scale invasion of Ukraine, while allowing for heterogeneity across sanctioning partners and whether sanctions are imposed by Russia or against it. In addition to estimating average effects, the analysis also traces how Russia's creative trade evolves over time around major sanctions episodes, providing a dynamic perspective on the timing and persistence of sanctions-related trade adjustments.

The results yield four main findings. First, sanctions are associated with economically and statistically significant reductions in bilateral creative trade, with effects that are notably larger than those typically documented in the literature for aggregate goods trade. Second, sanctions involving Russia generate substantially stronger effects in Russia's creative trade than sanctions observed in the broader global sample, with the magnitude of these effects increasing significantly after the 2014 annexation of Crimea and intensifying further following the 2022 full-scale invasion of Ukraine. Third, the effects of Russia-related sanctions are highly

heterogeneous across partner countries, indicating that creative trade networks respond unevenly to geopolitical fragmentation. Fourth, distinguishing between sanctions imposed by Russia and those imposed against it reveals asymmetries in their trade effects, suggesting that both external restrictions and Russian countersanctions contribute to the observed declines in creative trade. Taken together, these findings indicate that sanctions disrupt Russia's creative trade through multiple channels, with potential implications for the long-run structure and resilience of Russia's bilateral relationships.

The remainder of the paper is organised as follows. Section 2 describes the data and variable construction. Section 3 outlines the empirical methodology. Section 4 presents the main results and explores heterogeneity. Section 5 concludes.

## **2. Data and Variable Definitions**

### *2.1 Creative Trade*

Creative trade is measured using the UNCTAD classification of creative goods, which aggregates 213 product codes across several creative categories such as audiovisual and multimedia products, crafts and design, books and publishing, architecture, video games, music, visual and performing arts, and cultural and natural heritage (UNCTAD 2024). For the purposes of this study, these 213 codes are combined into a single measure of bilateral creative trade. Bilateral trade data are sourced from the UNCTADstat database, which reports annual export flows for 197 countries over the period 2002–2023.<sup>1,2</sup> Throughout the paper, creative trade is measured using bilateral exports of creative goods. Following 2021, such flows for Russia are unavailable in UNCTADstat, resulting in missing observations for Russia as an exporter in 2022–2023. Hence, these observations are treated as missing values in the baseline specification.

While creative services such as advertising and computer services are an increasingly important component of the global creative economy, their coverage in international trade statistics remains very limited. Accordingly, this dataset focuses exclusively on creative goods. It is also important to note that while integrating domestic creative trade flows into the analysis

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<sup>1</sup> The data are reported according to different versions of the Harmonised System (HS) classification—HS1992, HS1996, HS2002, HS2007, HS2012, HS2017, and HS2022—each reflecting the reporting standards adopted by countries over time.

<sup>2</sup> The data are reported by each trading partner in millions of US\$, capturing trade flows in both directions. For example, trade between the US and Russia is recorded as two distinct entries: exports from the US to Russia and exports from Russia to the US.

would provide a more comprehensive understanding (see Dai et al. 2014; Bergstrand et al. 2015; and Anderson and Yotov 2016), such flows are excluded due to the lack of available data. As a result, the dataset employed in the analysis consists of 849,464 individual observations ( $197 \times 196 \times (2023 - 2002 + 1)$ ).

A common critique in the literature concerns the use of consecutive-year data in the gravity model. Trefler (2004) argues that such data may fail to fully capture trade policy effects, as trade flows respond slowly to policy changes. Similarly, Cheng and Wall (2005) suggest that both the dependent and independent variables may not adjust within a single year, particularly in fixed-effects models. In response, some researchers have employed interval-based panels rather than consecutive-year data. However, Egger et al. (2022) caution that important dynamics may be overlooked when using interval data, potentially distorting estimates of trade policy effects. Given these considerations, this study employs consecutive-year panel data for the full sample period.

## *2.2 Sanctions*

Sanctions data are obtained from the Global Sanctions Database (GSDB, version R4), which provides comprehensive information on sanction episodes from 1950 to 2023, including the sender and target countries, years of imposition and removal, and the type and stated objectives of each sanction. The GSDB classifies sanctions into six categories: trade, financial, military assistance, arms, travel, and other. Trade sanctions restrict a country's international trade, either partially (targeting specific goods or sectors) or completely (broadly covering all sectors). Financial sanctions involve suspending or blocking financial transactions and freezing assets. Military assistance sanctions restrict financing, training, or logistical support related to military equipment, while arms sanctions prohibit the trade of weapons. Travel sanctions limit the mobility of individuals by banning entry or exit. Finally, less common measures such as suspending diplomatic relations and imposing flight bans are grouped under "other sanctions" (see Felbermayr et al. 2020 for further details).

Using GSDB records, the empirical analysis focuses on sanctions involving Russia, either as a sender or a target. Building on Cevik et al. (2025), who show that sanctions of various types can significantly reduce bilateral cultural trade even when cultural sectors are not explicitly targeted, the main Russia-related sanctions indicator takes the value of one whenever any sanction category is in place involving Russia in year  $t$ . To capture temporal heterogeneity across sanction waves, these indicators are distinguished by period: pre-2014, 2014–2021, and

post-2022. Additional specifications further distinguish between sanctions imposed by Russia and those imposed against Russia, as well as across sanction types, allowing for both directional and categorical asymmetries in their effects. For completeness, broader global sanctions variables are included as baseline controls.

### 2.3 Control Variables

The Regional Trade Agreements (RTAs) data are taken from the World Bank's Deep Trade Agreements (DTAs) database (version 2).<sup>3</sup> This variable takes the value of one if two trading partners are joint members of a trade agreement in a given year, and zero otherwise. The EU variable is sourced from the Dynamic Gravity Dataset of the United States International Trade Commission (USITC). This variable takes the value of one if both partners are EU members in a given year, and zero otherwise.

## 3. Methodology

This study employs recent advances in gravity model estimation to analyse the effects of sanctions involving Russia on Russia's bilateral creative trade, using a specification that covers a broad set of countries and accounts for general equilibrium effects across all country pairs. The main empirical specification is as follows:

$$X_{ij,t} = \exp[SANCT_{ij,t}\delta_1 + GRAV_{ij,t}\delta_2 + \pi_{i,t} + \chi_{j,t} + \mu_{ij}^{dir}] \times \epsilon_{ij,t} \quad (1)$$

where  $X_{ij,t}$  represents bilateral creative trade flows (in levels) from exporter  $i$  to importer  $j$  in year  $t$ . The key explanatory variables are contained in  $SANCT_{ij,t}$ , which includes several sanctions measures examined individually and in combination across alternative specifications. The vector  $GRAV_{ij,t}$  contains two time-varying bilateral controls, namely  $RTA_{ij,t}$  and  $EU_{ij,t}$ .

Equation (1) includes three sets of fixed effects. To account for multilateral resistance terms (MRTs), exporter-time ( $\pi_{i,t}$ ) and importer-time ( $\chi_{j,t}$ ) fixed effects are introduced,

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<sup>3</sup> According to the World Trade Organisation (WTO), RTAs are classified into four categories: Partial Scope Agreements (PSAs), which generally concentrate on tariff reductions in specific sectors, Free Trade Agreements (FTAs), which eliminate import tariffs in most sectors while allowing members to retain their own trade policies, Economic Integration Agreements (EIAs), which focus primarily on the liberalisation of services trade, and Customs Unions (CUs), which go further by requiring members to harmonise external trade policies and adopt a common external tariff (Conte et al. 2022).

following Anderson and van Wincoop (2003).<sup>4</sup> In addition, to address potential endogeneity of sanctions,<sup>5</sup> the model incorporates directional dyad fixed effects ( $\mu_{ij}^{dir}$ ), which Baier and Bergstrand (2007) identify as the most effective approach.<sup>6</sup> Because sanctions are typically imposed in response to country-specific actions or inactions, exporter-time and importer-time fixed effects also help mitigate endogeneity by capturing time-varying country-specific factors (Felbermayr et al. 2025). Beyond these econometric controls, the nature of Russia-related sanction episodes further limits concerns about endogeneity. In particular, Yalcin et al. (2025) emphasise that “... *it is unlikely that the Russian invasion of Ukraine was motivated by concerns related to trade volumes, thus mitigating reverse causality as a source of endogeneity. Additionally, in light of the fact that the countries that participated in the imposition of sanctions against Russia (e.g., Canada, Japan) have long-standing alliances with the U.S., selection bias presents a minimal threat to identification*” (p. 20).

Finally, in line with the recommendations of Santos Silva and Tenreyro (2006; 2011), the exponential function form is applied on the right-hand side, reflecting the preferred choice of estimator, namely the Poisson Pseudo Maximum Likelihood (PPML), which is robust to heteroskedasticity and accommodates the large number of zero trade flows that are common in disaggregated trade data.

#### 4. Empirical Findings

This section presents the empirical results from equation (1), with estimates reported in Table 1. The discussion proceeds in stages, moving from global benchmarks to Russia-specific effects. Specifically, columns (1)–(2) establish a broad baseline capturing the average impact of sanctions across all country pairs. From column (3) onward, the analysis focuses on sanctions involving Russia, distinguishing their effects by timing (2014 Crimea and 2022 full-scale invasion) and allowing for heterogeneity across sanctioning partners and sanction

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<sup>4</sup> Because these fixed effects are exporter- and/or importer-specific, they capture all country-specific factors such as GDP, population, and macroeconomic conditions. By contrast, variables such as  $SANCT_{ij,t}$  and  $RTA_{ij,t}$  are bilateral-specific and are therefore not perfectly collinear with these fixed effects.

<sup>5</sup> Weber and Schneider (2020) examine the likelihood of sanction impositions by presenting a selection argument centred on the decision-making process of the European Union (EU). Their findings suggest that the EU is more likely to impose sanctions when there is a higher likelihood of substantial economic harm occurring within the targeted country.

<sup>6</sup> Time-invariant bilateral-specific characteristics between country pairs are perfectly collinear with these fixed effects. As a result, standard gravity variables, such as common language, colonial ties, or physical distance, are fully absorbed by  $\mu_{ij}^{dir}$  and therefore excluded from the vector  $GRAV_{ij,t}$ .

direction. All specifications include RTA and EU controls and high-dimensional fixed effects (HDFEs); however, their coefficients are not reported for brevity.

#### 4.1 Global sanction effects

Column (1) reports results for the aggregate specification, which captures all sanction episodes across 197 countries without restricting attention to Russia. The coefficient estimate on this indicator is negative and statistically significant ( $\hat{\delta}_1 = -0.179$ , std. err. = 0.046). In terms of the trade volume effect, this implies that, *ceteris paribus*, the imposition of any sanction reduces bilateral creative trade between sanctioning and sanctioned countries by approximately 16.4%  $[e^{-0.179} - 1] \times 100\%$ .<sup>7</sup>

Building on the baseline, column (2) disaggregates sanctions into complete trade, partial trade, and non-trade categories. All coefficient estimates are significantly negative and economically meaningful. Quantitatively, holding all other factors constant, complete trade sanctions are associated with an average reduction in bilateral creative trade of about 47%, partial trade sanctions with 16%, and non-trade sanctions with 17%. The coefficient on complete trade sanctions is only weakly significant at the 10% level, whereas those on partial and non-trade sanctions are significant at the 1% level.

To explore heterogeneity further, Table A1 in Appendix A examines individual sanction types. Because the sanction categories are highly correlated, including all six indicators together would introduce severe multicollinearity. To address this, the baseline specification is re-estimated using two mutually exclusive indicators: one for a specific sanction type (e.g., financial) and another, *REST\_SANCT*, for all remaining categories. The results reveal statistically and economically significant negative effects for all sanction types except military assistance sanctions.

As a point of reference, it is useful to compare these results with those reported for aggregate goods trade in Yalcin et al. (2025). Their analysis finds a much smaller coefficient ( $-0.073$ ) for the any sanction indicator, suggesting that creative trade responds more strongly to sanctions than aggregate trade, consistent with the mechanisms outlined in the Introduction. Moreover, whereas non-trade sanctions lose statistical significance in their aggregate trade estimates, non-trade measures remain strongly significant here, indicating that creative trade is particularly vulnerable even to restrictions not directly targeting economic activity.

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<sup>7</sup> The trade volume effect of a binary variable, such as sanctions, is determined using the formula  $[e^{\hat{\delta}} - 1] \times 100\%$ , where  $\hat{\delta}$  represents the estimated coefficient of the binary variable in the gravity equation.

**Table 1: Effects of Sanctions on Russia's Creative Trade**

	(1)	(2)	(3)	(4)	(5)	(6)–(8) Country-specific sanctions		
	Global sanctions (all)	Global trade vs. non-trade	Russia (all)	Russia (2014)	Russia (2022)	All ↔	By Russia →	Vs. Russia ←
ANY_SANCT	-0.179*** (0.046)							
COMPLETE		-0.638* (0.372)						
PARTIAL		-0.175*** (0.044)						
NON_TRADE		-0.184** (0.064)						
RUS_ALL			-0.613*** (0.106)	-0.443** (0.183)	-0.418** (0.179)	-0.549** (0.231)	-0.567** (0.288)	-0.484** (0.203)
RUS_2014				-0.618*** (0.108)	-0.535*** (0.109)	-0.482*** (0.137)	-0.501*** (0.120)	-0.754*** (0.164)
RUS_2022					-1.340*** (0.156)	-0.874** (0.397)	-1.326*** (0.158)	-0.532 (0.327)
RUS_US						-0.413*** (0.106)	-0.820*** (0.139)	-0.268** (0.124)
RUS_EU						-0.600*** (0.112)	-0.876*** (0.201)	-0.574*** (0.119)
RUS_GBR						-0.990*** (0.149)	-1.477*** (0.194)	-0.933*** (0.159)
RUS_CAN						-0.472*** (0.097)	-0.536*** (0.142)	-0.468*** (0.099)
RUS_NOR						-0.525*** (0.102)	-2.632*** (0.146)	0.023 (0.118)
RUS_AUS						-0.738*** (0.117)	-0.798*** (0.144)	-0.735*** (0.150)
RUS_UKR						-1.060*** (0.182)	-0.159 (0.143)	-1.333*** (0.228)
RUS_ISL							-1.670*** (0.152)	
RUS_GEO							0.091 (0.205)	
RUS_MDA							0.636*** (0.144)	
RUS_CHE								-0.678*** (0.134)
RUS_NZL								-1.201*** (0.130)
RUS_JPN								0.649*** (0.148)
<i>Controls</i>	<i>Yes</i>	<i>Yes</i>	<i>Yes</i>	<i>Yes</i>	<i>Yes</i>	<i>Yes</i>	<i>Yes</i>	<i>Yes</i>
<i>N</i>	435,739	435,739	435,739	435,739	435,739	435,739	435,739	435,739

**Notes:** The dependent variable is bilateral creative trade flows (in levels). Columns (1)–(2) report global baseline estimates. Column (1) reports the aggregate effect of sanctions, while column (2) distinguishes between complete trade, partial trade, and non-trade sanctions. Columns (3)–(5) focus on sanctions involving Russia, distinguishing between *RUS\_ALL*, *RUS\_2014*, and *RUS\_2022*. Columns (6)–(8) introduce country-specific sanction indicators for Russia's major partners. All models are estimated using the PPML estimator and include exporter-time, importer-time, and directional country-pair fixed effects. Standard errors are clustered by country pair and reported in parentheses. Asterisks denote statistical significance at the 1% (\*\*\*), 5% (\*\*), and 10% (\*) levels.

#### 4.2 Sanctions involving Russia

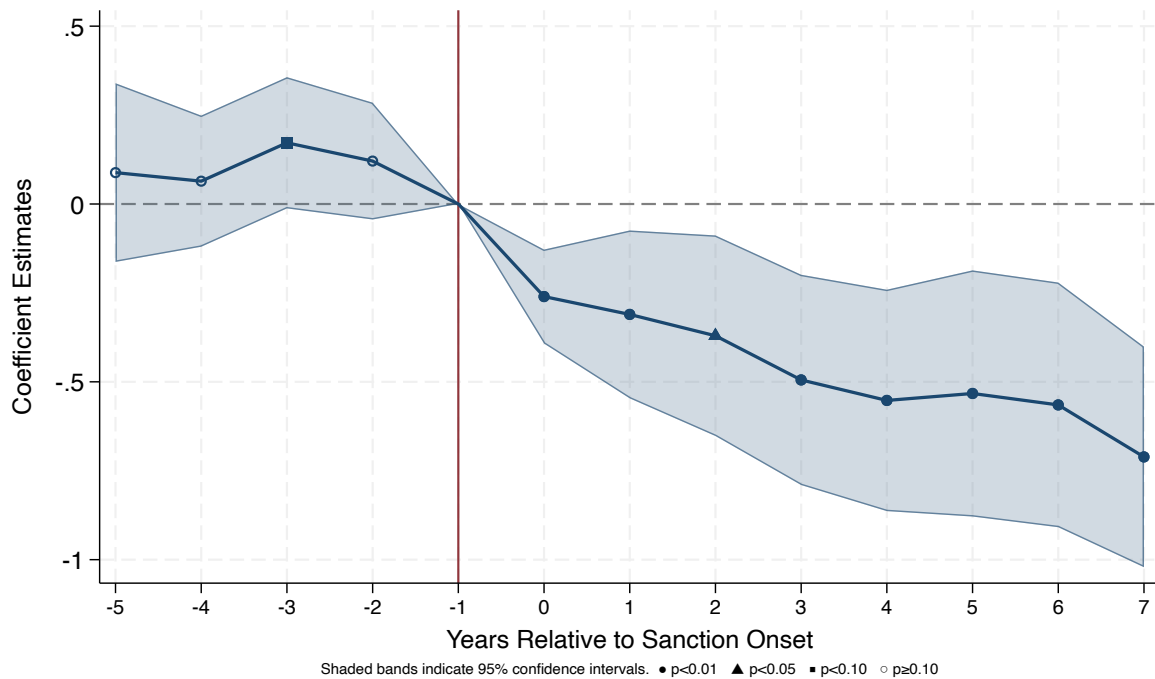
The analysis next focuses on sanctions involving Russia. Column (3) introduces the variable *RUS\_ALL*, which equals one if any sanction is imposed by Russia on a partner country or imposed against Russia by another country during the period of investigation, and zero

otherwise. To facilitate interpretation, the global *ANY\_SANCT* variable is redefined from this specification onward to exclude Russia-related sanctions and is omitted from Table 1, as the focus shifts to Russia-related measures.<sup>8</sup> Accordingly, the coefficient on *RUS\_ALL* in columns (3)–(8) captures the effect of Russia-related sanctions relative to the no-sanctions baseline, rather than as a deviation from the global *ANY\_SANCT* category.

The coefficient on *RUS\_ALL* (−0.613) in column (3) is negative and statistically significant, indicating that, all else constant, the presence of sanctions involving Russia is associated with an average reduction of about 46% in bilateral creative trade between Russia and its sanction partners, an effect considerably larger than those observed in columns (1)–(2). Sanction-type heterogeneity is also examined for Russia-related sanctions in Table A2 in Appendix A, using the same approach as in Table A1. The results confirm that all sanction categories have negative and statistically significant effects on Russia’s bilateral creative trade, with magnitudes broadly consistent across types.

To complement the baseline estimates, the analysis next turns to an event-study specification that traces the dynamic response of Russia’s bilateral creative trade around the onset of sanctions. Figure 1 reports the event-time coefficients for the *RUS\_ALL* indicator from the specification in column (3).

**Figure 1:** Dynamic Effects of Russia-Related Sanctions on Creative Trade



<sup>8</sup> Unreported coefficients remain statistically significant and negative, with an estimated magnitude of  $\approx -0.15$  across specifications.

**Notes:** The figure reports event-study estimates from a staggered-adoption design analysing the dynamic effects of Russia-related sanctions on Russia's bilateral creative trade. Event time is defined relative to the first year in which any sanction involving Russia is in force for a given directed country pair. The year immediately preceding treatment ( $t = -1$ ) serves as the baseline category. Leads ( $t \leq -5$ ) and lags ( $t \geq 7$ ) are binned. The model is estimated using PPML with importer-year, exporter-year, and directional country-pair fixed effects. Standard errors are clustered at the dyad level.

The estimates reveal no evidence of significant pre-trends in Russia's bilateral creative trade prior to the imposition of sanctions, supporting the identifying assumption of parallel trends. Following treatment, the coefficients become statistically significant within one year and continue to grow in absolute magnitude over time, indicating that sanctions generate long-lasting disruptions rather than short-lived adjustments. This dynamic pattern is consistent with the findings reported in Table 1.

As noted in the data section, Russia's export flows are not available for the post-2021 period, resulting in missing observations for Russia as an exporter in 2022 and 2023, which are treated as missing in the baseline specification. From column (3) onward, post-2022 effects are therefore primarily identified using partner-reported exports to Russia and pre-2022 variation in Russia's exports.<sup>9</sup> The robustness of this identification strategy is assessed in three ways. First, Russia's unreported post-2021 exports are proxied using partner-reported imports, yielding estimates that are fully consistent with the baseline results (Appendix B, Table B1). Second, restricting the sample to the pre-2022 period (2002–2021), for which export data are complete, produces coefficient estimates that remain stable in both magnitude and statistical significance (Appendix B, Table B2). Finally, limiting the sample to strictly positive creative trade flows isolates the intensive-margin response of trade volumes; while the estimated effects are somewhat attenuated, they remain negative and statistically significant, indicating that the baseline results are not mechanically driven by zero flows (Appendix B, Table B3).

Column (4) separates the *RUS\_ALL* indicator into two components: sanctions imposed before 2014 and those introduced from 2014 onward, following the annexation of Crimea. To prevent double counting and facilitate interpretation, aggregate sanction indicators are adjusted where necessary in subsequent specifications to remain mutually exclusive with more disaggregated measures. Both variables enter the regression simultaneously and yield negative and statistically significant coefficients, indicating that sanctions in both periods reduce Russia's bilateral creative trade. Importantly, the magnitude of the coefficient estimate is larger in absolute value for the post-2014 sanctions, suggesting that the trade-reducing effect intensifies following the annexation of Crimea.

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<sup>9</sup> Importantly, even if the missing values are replaced with zeros, under the PPML estimator with HDFEs such observations are dropped because they constitute singletons or are separated by the fixed effects. As a result, the treatment of missing values does not affect the estimates.

Column (5) extends the previous specification by distinguishing three distinct phases of Russia-related sanctions: those imposed before 2014, between 2014 and 2021, and from 2022 onward, corresponding to the post-2022 full-scale invasion wave. The results yield statistically and economically significant coefficients across all phases, indicating that each stage of sanctions is associated with a reduction in Russia’s bilateral creative trade, with the largest magnitude observed for the post-2022 period.

#### *4.3 Bilateral sanctions with major partners*

Column (6) introduces country-specific bilateral indicators for the major partners that imposed sanctions on Russia and were also subject to Russian countersanctions: the US, EU, UK (GBR), Canada (CAN), Norway (NOR), Australia (AUS), and Ukraine (UKR).<sup>10</sup> With these dummies estimated jointly, each coefficient measures the bilateral trade effect of that specific Russia–partner sanction episode relative to Russia’s trade with other partners either not covered by these country-specific dummies or not subject to any Russia-related sanctions. Accordingly, from column (6) onward, the magnitudes and statistical significance of the country-specific coefficients depend on the composition of the included partners and capture relative rather than absolute bilateral effects (see, e.g., Yalcin et al. 2025).

The estimates indicate that all country-specific sanction indicators are associated with statistically significant and economically sizable negative coefficients (visualised in Panel 1 of Figure C1 in Appendix C). While some partner-specific effects are large in magnitude, others are more moderate, highlighting substantial heterogeneity in bilateral trade responses. To further unpack these effects, the subsequent specifications distinguish between sanctions imposed by Russia and those imposed against it.

Accordingly, column (7) focuses exclusively on sanctions imposed by Russia. New bilateral dummy variables are created for each sanctioned partner, including the US, EU, UK, CAN, NOR, AUS, and UKR. To illustrate partner-level heterogeneity beyond these cases and span different regional and geopolitical contexts, additional dummies are also constructed for Iceland (ISL), Georgia (GEO), and Moldova (MDA). All reciprocal cases, if present, are captured separately by the redefined *RUS\_ALL*, *RUS\_2014*, and *RUS\_2022* variables. The results show that most coefficient estimates are negative and statistically significant, with effect magnitudes varying across partners, from larger to more moderate responses (visualised in Panel 2 of Figure C1 in Appendix C). One exception is *RUS* → *MDA*, for which the coefficient

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<sup>10</sup> The EU dummy includes the UK until its exit from the Union, after which a separate UK dummy is introduced.

is positive and statistically significant, indicating a relative increase in Russia’s creative trade with Moldova despite the presence of Russian sanctions.<sup>11</sup>

Finally, column (8) mirrors the previous specification but focuses only on sanctions imposed against Russia. The set of partner countries includes the US, EU, UK, CAN, NOR, AUS, and UKR, and, following the same rationale as in column (7), is expanded to include selected additional sanctioning states, namely Switzerland (CHE), New Zealand (NZL), and Japan (JPN). The results show that most coefficients are negative and statistically significant, indicating relative declines in bilateral creative trade between Russia and its sanctioning partners (visualised in Panel 3 of Figure C1 in Appendix C). As in column (7), effect magnitudes vary across partners, with some country-specific sanctions exhibiting larger magnitudes than others. One notable exception is  $RUS \leftarrow JPN$ , for which the coefficient is positive and statistically significant, indicating a relative increase in Russia’s creative trade with Japan despite Japanese sanctions.<sup>12</sup>

#### 4.4 EU member state heterogeneity

This section examines heterogeneity in sanction effects across EU member states that engaged in reciprocal sanctions with Russia, using the specification from column (6) of Table 1 with member-state dummies replacing the aggregate EU indicator. The coefficient estimates visualised in Figure 2 show that creative trade between Russia and most EU member states declines significantly following the imposition of reciprocal sanctions. Austria, Poland, Denmark, Cyprus, Greece, Luxembourg, and Bulgaria exhibit relatively strong negative effects, in contrast to France, Germany, Italy, Sweden, and the UK, whose coefficients are likewise negative and significant, though more moderate in magnitude. Several other economies, such as Belgium, Czechia, the Netherlands, Portugal, and Romania, exhibit statistically insignificant effects. By contrast, positive and statistically significant coefficient

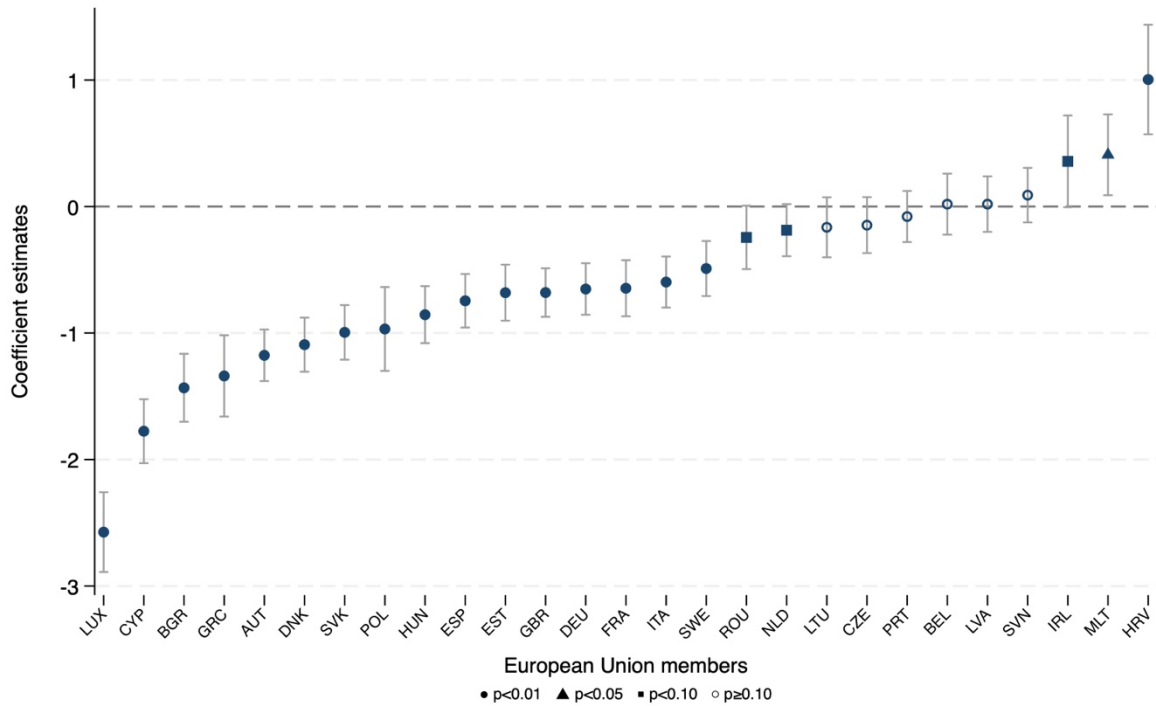
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<sup>11</sup> Despite formal sanctions, deep linguistic, historical, and cultural ties between Russia and Moldova likely continue to underpin flows of creative trade. Russia’s engagement with Moldova exemplifies what Rotaru (2018) describes as the “instrumentalisation of soft power,” namely the use of media, religion, and cultural diplomacy to maintain influence in the post-Soviet space. In addition, as noted by Kubica (2024), Russia complements these channels with broader hybrid tools, including energy leverage, disinformation, and cultural outreach. Collectively, these mechanisms offer plausible explanations for the observed relative increase in creative trade under Russian-imposed sanctions on Moldova.

<sup>12</sup> Cultural cooperation between Russia and Japan has a long institutional history. Relations were initially governed by the *Agreement on Cultural Relations* of May 31, 1986, later reinforced by the *Moscow Declaration on Establishing a Creative Partnership between the Russian Federation and Japan* (1998), which emphasised mutual cultural enrichment and cooperation in creative fields (Ageeva 2013). The subsequent *Agreement on Cultural Ties*, signed in September 2000, marked a second stage of cooperation, broadening the agenda to include tourism, youth initiatives, and joint creative projects (Magdeev and Khaliullina 2021). This longstanding institutional history may help explain the observed relative increase in Russia’s bilateral creative trade with Japan.

estimates for Croatia, Ireland, and Malta indicate idiosyncratic increases in creative trade, possibly reflecting sectoral reorientation or re-export activity within the EU.<sup>13, 14</sup>

**Figure 2: Effects of EU-Russia Sanctions on Russia’s Bilateral Creative Trade**



**Notes:** This figure presents the coefficient estimates of the effects of sanctions involving Russia on Russia’s bilateral creative trade with EU member states. The estimates are derived from the specification in column (6) of Table 1, except that the aggregate EU indicator is replaced by country-specific variables for each member state. Finland’s coefficient is omitted due to collinearity. The underlying regression results are reported in Table D1 in Appendix D.

Taken together, the empirical findings show that the impact of sanctions on Russia’s creative trade differs across time, partner countries, and sanction direction, while remaining predominantly trade-reducing. Because the country-specific indicators are estimated jointly, the corresponding coefficients reflect relative differences across bilateral trade relationships; larger magnitudes therefore indicate that trade with a given partner declined more strongly than with other partners, rather than capturing absolute changes in trade volumes, and should be interpreted with caution.

<sup>13</sup> Crozet and Hinz (2020) document that export losses to Russia were highly uneven across EU member states. Some smaller economies appear to have mitigated the impact of sanctions by redirecting or indirectly channelling exports to Russia through partners within the EU single market or via neighbouring non-EU economies, mechanisms consistent with intra-EU re-exports and third-country trade diversion. Such dynamics may help explain the relatively resilient, and in some cases positive, coefficient estimates obtained for Croatia, Ireland, and Malta.

<sup>14</sup> As in the baseline analysis, the EU member state–level estimates are robust to alternative treatments of Russia’s missing post-2021 export data. Replicating the analysis using (i) a sample restricted to the pre-2022 period, and (ii) mirror statistics based on partner-reported imports yields results that are fully consistent in both magnitude and statistical significance. The results are not reported here but are available upon request.

## 5. Conclusions

This paper examines the impact of sanctions involving Russia on bilateral creative trade between Russia and its sanction partners. Using a structural gravity model and a comprehensive panel of bilateral trade flows, the analysis shows that sanctions are associated with economically and statistically significant reductions in Russia's bilateral creative trade. Event-study evidence further indicates that these effects emerge rapidly following the imposition of sanctions and persist over time, pointing to long-lasting rather than transitory disruptions. These effects increase following the 2014 annexation of Crimea and become even stronger after the 2022 full-scale invasion of Ukraine. Beyond these average effects, the findings emphasise the importance of heterogeneity across partner countries and sanction direction, indicating that both sanctions imposed on Russia and Russia's own retaliatory measures contribute importantly to observed creative trade outcomes.

By focusing on creative trade, a segment of international trade closely linked to symbolic content, this study contributes new evidence on how geopolitical fragmentation reshapes trade flows that are particularly sensitive to disruptions in bilateral relationships, without interpreting creative trade as a measure of cultural values or identity. To the extent that creative trade is closely linked to symbolic expression and intellectual content, persistent disruptions in this segment of trade may complicate relations between Russia and its sanction partners in the long run. Recognising these broader trade effects does not alter the political rationale for sanctions, but it highlights the importance of accounting for their implications when designing and evaluating sanction regimes.

Two limitations of the analysis merit particular attention. First, the sanctions indicators employed in the analysis capture the presence and broad type of sanctions at the bilateral level rather than sanctions explicitly targeted at creative sectors. Although some sanction episodes explicitly reference creative goods, such sector-specific information is not systematically coded in the GSDB. Accordingly, the estimated effects should be interpreted as reflecting overall sanctions exposure, encompassing both direct and indirect channels. Second, the analysis focuses on creative goods trade, as comparable and comprehensive data on bilateral creative services remain limited. Future research combining sector-specific sanctions data with more granular information on creative goods and services could provide further insights into how sanctions affect different dimensions of the creative economy.

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## APPENDIX A

**Table A1: Effects of Sanction Types on Global Creative Trade**

	(1) Trade	(2) Financial	(3) Military	(4) Arms	(5) Travel	(6) Other
REST_SANCT	-0.184*** (0.064)	-0.134*** (0.050)	-0.186*** (0.043)	-0.161*** (0.048)	-0.139** (0.064)	-0.161*** (0.046)
TRADE	-0.175*** (0.044)					
FINANCIAL		-0.227*** (0.064)				
MILITARY			-0.142 (0.133)			
ARMS				-0.414*** (0.117)		
TRAVEL					-0.214*** (0.072)	
OTHER						-0.617*** (0.128)
<i>Controls</i>	<i>Yes</i>	<i>Yes</i>	<i>Yes</i>	<i>Yes</i>	<i>Yes</i>	<i>Yes</i>
<i>N</i>	435,739	435,739	435,739	435,739	435,739	435,739

**Notes:** The dependent variable is bilateral creative trade flows (in levels). Each sanction category is introduced separately, while the *REST\_SANCT* variable is redefined to exclude the sanction type under consideration, taking the value of one whenever any of the other five sanction categories are active. All models are estimated using the PPML estimator and include exporter-time, importer-time, and directional country-pair fixed effects. Standard errors are clustered by country pair and reported in parentheses. Asterisks denote statistical significance at the 1% (\*\*\*), 5% (\*\*), and 10% (\*) levels.

**Table A2: Effects of Russia-Related Sanction Types on Russia's Creative Trade**

	(1) Trade	(2) Financial	(3) Military	(4) Arms	(5) Travel	(6) Other
REST_RUS	-0.471 (0.321)	-0.684*** (0.172)	-0.704*** (0.149)	-0.702*** (0.148)	-0.606*** (0.130)	-0.539*** (0.105)
TRADE	-0.614*** (0.106)					
FINANCIAL		-0.601*** (0.117)				
MILITARY			-0.589*** (0.116)			
ARMS				-0.590*** (0.115)		
TRAVEL					-0.614*** (0.114)	
OTHER						-1.336*** (0.154)
<i>Controls</i>	<i>Yes</i>	<i>Yes</i>	<i>Yes</i>	<i>Yes</i>	<i>Yes</i>	<i>Yes</i>
<i>N</i>	435,739	435,739	435,739	435,739	435,739	435,739

**Notes:** The dependent variable is bilateral creative trade flows (in levels). Russia-related sanction categories are introduced separately, with *REST\_SANCT* capturing the remaining Russia-related categories, taking the value of one whenever any of the other five sanction categories are active. All models are estimated using the PPML estimator and include exporter-time, importer-time, and directional country-pair fixed effects. Standard errors are clustered by country pair and reported in parentheses. Asterisks denote statistical significance at the 1% (\*\*\*), 5% (\*\*), and 10% (\*) levels.

## APPENDIX B

**Table B1: Robustness: Effects of Sanctions on Russia's Creative Trade (Mirror Statistics)**

	(1)	(2)	(3)	(4)	(5)	(6) Country-specific sanctions		
	Global sanctions (all)	Global trade vs. non-trade	Russia (all)	Russia (2014)	Russia (2022)	All	By Russia	Vs. Russia
						↔	→	←
ANY_SANCT	-0.178*** (0.046)							
COMPLETE		-0.648* (0.370)						
PARTIAL		-0.173*** (0.044)						
NON_TRADE		-0.184*** (0.064)						
RUS_ALL			-0.600*** (0.110)	-0.530** (0.225)	-0.515** (0.229)	-0.665** (0.275)	-0.707** (0.349)	-0.625*** (0.200)
RUS_2014				-0.602*** (0.112)	-0.521*** (0.111)	-0.492*** (0.132)	-0.488*** (0.123)	-0.663*** (0.112)
RUS_2022					-1.103*** (0.205)	-0.219 (0.416)	-1.059*** (0.237)	-0.527 (0.328)
RUS_US						-0.442*** (0.109)	-0.939*** (0.160)	-0.267** (0.125)
RUS_EU						-0.603*** (0.113)	-0.946*** (0.208)	-0.573*** (0.120)
RUS_GBR						-0.976*** (0.154)	-1.367*** (0.231)	-0.932*** (0.160)
RUS_CAN						-0.491*** (0.101)	-0.611*** (0.156)	-0.467*** (0.100)
RUS_NOR						-0.540*** (0.104)	-2.424*** (0.160)	0.024 (0.119)
RUS_AUS						-0.755*** (0.121)	-0.879*** (0.164)	-0.734*** (0.150)
RUS_UKR						-1.053*** (0.183)	-0.116 (0.140)	-1.329*** (0.230)
RUS_ISL							-1.138*** (0.169)	
RUS_GEO							-0.022 (0.199)	
RUS_MDA							0.355*** (0.115)	
RUS_CHE								-0.677*** (0.135)
RUS_NZL								-1.200*** (0.130)
RUS_JPN								0.650*** (0.148)
<i>Controls</i>	<i>Yes</i>	<i>Yes</i>	<i>Yes</i>	<i>Yes</i>	<i>Yes</i>	<i>Yes</i>	<i>Yes</i>	<i>Yes</i>
<i>N</i>	436,093	436,093	436,093	436,093	436,093	436,093	436,093	436,093

**Notes:** This table reports robustness estimates corresponding to Table 1, proxying Russia's unreported post-2021 export flows using partner-reported imports. All models are estimated using the PPML estimator and include exporter-time, importer-time, and directional country-pair fixed effects. Standard errors are clustered by country pair and reported in parentheses. Asterisks denote statistical significance at the 1% (\*\*\*), 5% (\*\*), and 10% (\*) levels.

**Table B2: Robustness: Effects of Sanctions on Russia's Creative Trade (2002-2021)**

	(1)	(2)	(3)	(4)	(5) (6) (7) Country-specific sanctions		
	Global sanctions (all)	Global trade vs. non-trade	Russia (all)	Russia (2014)	All ↔	By Russia →	Vs. Russia ←
ANY_SANCT	-0.178*** (0.046)						
COMPLETE		-0.430 (0.337)					
PARTIAL		-0.215*** (0.043)					
NON_TRADE		-0.130* (0.071)					
RUS_ALL			-0.534*** (0.106)	-0.418** (0.178)	-0.555** (0.231)	-0.559* (0.287)	-0.484** (0.202)
RUS_2014				-0.538*** (0.108)	-0.477*** (0.138)	-0.504*** (0.119)	-0.755*** (0.164)
RUS_US					-0.327*** (0.106)	-0.826*** (0.139)	-0.142 (0.127)
RUS_EU					-0.527*** (0.112)	-0.885*** (0.201)	-0.487*** (0.122)
RUS_GBR					-0.706*** (0.137)	-1.454*** (0.198)	-0.588*** (0.146)
RUS_CAN					-0.410*** (0.098)	-0.545*** (0.140)	-0.352*** (0.101)
RUS_NOR					-0.454*** (0.103)	-2.638*** (0.145)	0.141 (0.122)
RUS_AUS					-0.710*** (0.117)	-0.799*** (0.141)	-0.696*** (0.151)
RUS_UKR					-0.894*** (0.167)	-0.164 (0.144)	-1.131*** (0.213)
RUS_ISL						-0.559* (0.287)	
RUS_GEO						-0.504*** (0.119)	
RUS_MDA						-0.826*** (0.139)	
RUS_CHE							-0.539*** (0.138)
RUS_NZL							-1.079*** (0.123)
RUS_JPN							0.689*** (0.145)
<i>Controls</i>	<i>Yes</i>	<i>Yes</i>	<i>Yes</i>	<i>Yes</i>	<i>Yes</i>	<i>Yes</i>	<i>Yes</i>
<i>N</i>	391,900	391,900	391,900	391,900	391,900	391,900	391,900

**Notes:** This table reports robustness estimates corresponding to Table 1, restricting the sample to the pre-2022 period for which complete export flow data are available. All models are estimated using the PPML estimator and include exporter-time, importer-time, and directional country-pair fixed effects. Standard errors are clustered by country pair and reported in parentheses. Asterisks denote statistical significance at the 1% (\*\*\*), 5% (\*\*), and 10% (\*) levels.

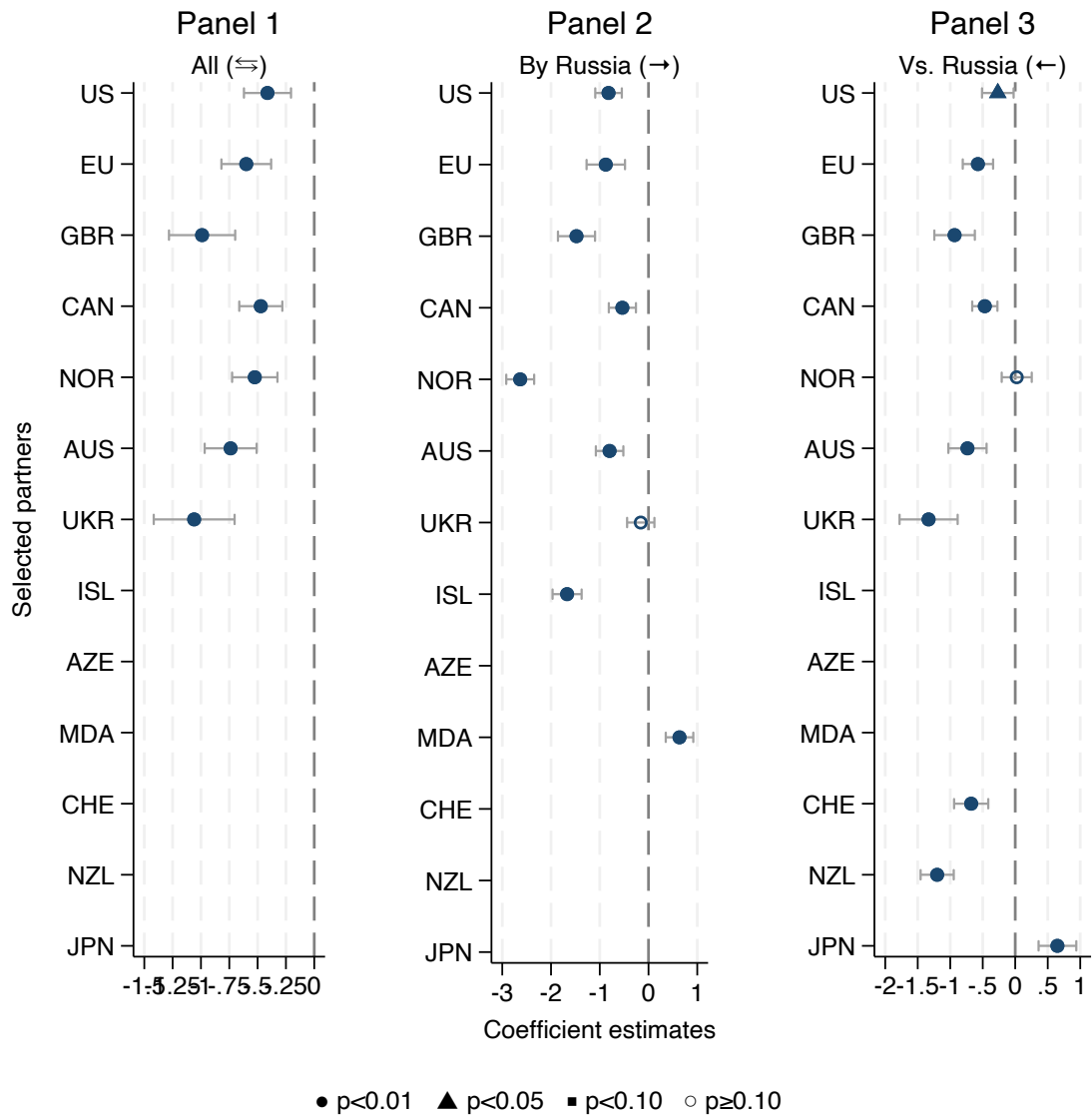
**Table B3: Robustness: Intensive Margin Effects of Sanctions on Creative Trade**

	(1)
RUS_ALL	-0.593*** (0.108)
<i>Controls</i>	<i>Yes</i>
<i>N</i>	261,224

**Notes:** This table reports robustness estimates based on the specification in column (3) of Table 1, restricting the sample to strictly positive trade flows ( $X_{ij,t} > 0$ ). The model is estimated using PPML and include exporter-time, importer-time, and directional country-pair fixed effects. Standard errors are clustered by country pair and reported in parentheses. Asterisks denote statistical significance at the 1% (\*\*\*), 5% (\*\*), and 10% (\*) levels.

## APPENDIX C

**Figure C1: Effects of Russia-Related Sanctions on Bilateral Creative Trade**



**Notes:** This figure reports the effects of reciprocal sanctions (Panel 1), sanctions imposed by Russia (Panel 2), and sanctions imposed against Russia (Panel 3) on bilateral creative trade involving Russia, with coefficient estimates corresponding to columns (6)–(8) of Table 1. Horizontal bars denote 95% confidence intervals.

## APPENDIX D

**Table D1:** Effects of EU–Russia Sanctions

	(1)
RUS_AUT	-1.176*** (0.104)
RUS_BEL	0.019 (0.123)
RUS_BGR	-1.433*** (0.137)
RUS_CYP	-1.776*** (0.129)
RUS_CZE	-0.147 (0.113)
RUS_DEU	-0.652*** (0.104)
RUS_DNK	-1.092*** (0.109)
RUS_ESP	-0.745*** (0.108)
RUS_EST	-0.681*** (0.113)
RUS_FRA	-0.646*** (0.113)
RUS_GBR	-0.680*** (0.098)
RUS_GRC	-1.339*** (0.164)
RUS_HRV	1.004*** (0.221)
RUS_HUN	-0.855*** (0.115)
RUS_IRL	0.357* (0.185)
RUS_ITA	-0.597*** (0.103)
RUS_LTU	-0.164 (0.121)
RUS_LUX	-2.574*** (0.161)
RUS_LVA	0.019 (0.112)
RUS_MLT	0.409** (0.163)
RUS_NLD	-0.187* (0.105)
RUS_POL	-0.968*** (0.169)
RUS_PRT	-0.079 (0.103)
RUS_ROU	-0.244* (0.128)
RUS_SVK	-0.995*** (0.110)
RUS_SVN	0.090 (0.110)
RUS_SWE	-0.490*** (0.111)
<i>Controls</i>	<i>Yes</i>
<i>N</i>	435,739

**Notes:** The results are based on the specification in column (6) of Table 1, with the aggregate EU indicator replaced by country-specific variables for each member state. Finland’s coefficient is omitted due to collinearity. *RUS\_ALL*, *RUS\_2014*, and *RUS\_2022* coefficients are dropped for conciseness. The model is estimated using the PPML estimator and include exporter-time, importer-time, and directional country-pair fixed effects. Standard errors are clustered by country pair and reported in parentheses. Asterisks denote statistical significance at the 1% (\*\*\*), 5% (\*\*), and 10% (\*) levels.