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When two quarrel, the third rejoices: Windfall FDIs and the early winners of the Russian-Ukrainian war

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When two quarrel, the third rejoices: Windfall FDIs and the early winners of the Russian-Ukrainian war.*

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Abstract

Geopolitical conflicts significantly reshape global investment patterns, potentially creating unexpected economic opportunities for neutral countries. This paper examines how these economies benefit from the sudden reshaping of international investment triggered by geopolitical disruptions. Using the Russian invasion of Ukraine as a quasi-exogenous shock, this study estimates the impact of redirected foreign direct investment (FDI) flows on economic output in neutral countries following this major geopolitical event. Employing a Difference-in-Differences model using Orbis Crossborder Investment data, the findings reveal a sharp decline in Western FDIs into Russia and Russia-leaning countries, alongside a significant increase in cross-border investment into neutral nations, with India, Mexico, Brazil, Malaysia, and Singapore among the primary beneficiaries. Using a Bayesian VAR analysis, I estimate that these windfall FDIs have increased GDP by up to 2%, underscoring the economic benefits associated with geopolitical realignments. These findings contribute to the literature on geoeconomics, offering new insights into how neutral countries can emerge as unexpected winners in times of global uncertainty.

Keywords: Foreign direct investment; Geoeconomics; Fragmentation.

JEL Classification: F21; F23; F51.

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1 Introduction

Disruptions in the geopolitical order can significantly reshape international trade and investment patterns. A growing body of research documents the significant economic disruptions caused by these geopolitical shocks through the decoupling of value chains (Felbermayr et al., 2023; Aiyar et al., 2023), the adoption of friendshoring strategies to mitigate geopolitical risks (Javorcik et al., 2024), and trade boycotts (Bachmann et al., 2022).

In contrast, the literature on the potential beneficiaries of the reshaping of international trade and investment flows during such periods remains scarce. An exception is Felbermayr et al. (2023), which show that countries that remain neutral in geopolitical conflicts often experience increased trade activity. Similarly, I emphasize another dimension as these countries may also attract greater cross-border investment inflows as firms adjust their international investment strategies in response to heightened risks (Milesi-Ferretti and Tille, 2011; Broner, Didier, Erce, and Schmukler, Broner et al.; Davis et al., 2021). These windfall foreign direct investments (FDIs) potentially generate positive economic effects, fostering economic growth in recipient nations.

Therefore, this paper answers the research question: *How do neutral countries benefit when geopolitical conflicts trigger the sudden relocation of international investment?* Estimating the impact of these windfall FDIs on GDP highlights that non-aligned countries experience significant and sizable economic gains during periods of increased geopolitical uncertainty.

The Russian invasion of Ukraine in February 2022 significantly disrupted cross-border investment patterns and has the sufficient properties to study the research question. The war solidified two distinct geopolitical blocs, a Western bloc and a Russia-leaning bloc, while leaving some states unaligned. Figure 1 shows the geopolitical division of the world since the onset of the war. Furthermore, the invasion of Ukraine was unexpected by most politicians, analysts, and investors. Therefore, the redirection of cross-border investment flows can be considered as quasi-exogenous and provides a unique opportunity to analyze the economic impact of unexpected changes in cross-border investment flows.

To answer the research question how non-aligned countries' economic output benefits when geopolitical conflicts trigger sudden relocation of international investment, this study implements an empirical approach with two stages. In the first stage of the analysis, FDI predictions for a counterfactual in which cross-border investment flows have not been reshaped are estimated. Therefore, I employ a Difference-in-Differences (DiD) and an event study approach to estimate a Gravity-like equation. FDI flows within Western countries, relatively unaffected by the Russian invasion of

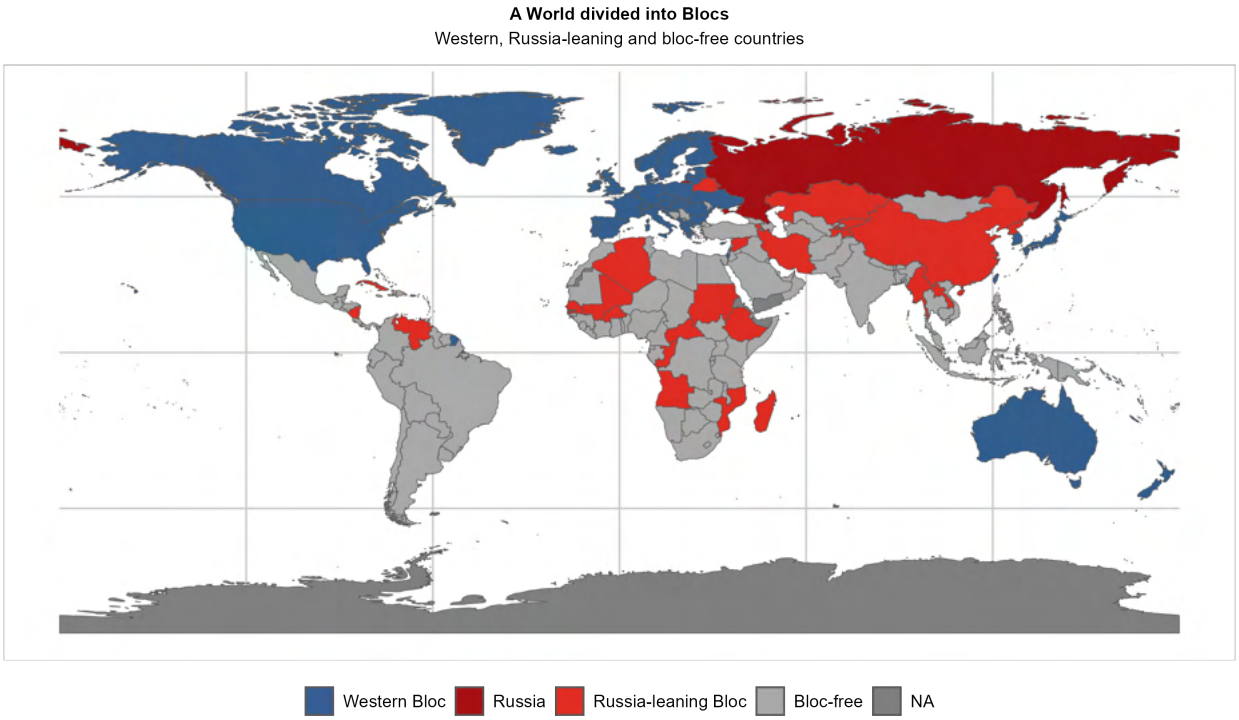

Figure 1: The map illustrates the geopolitical divisions of the world since 2022. Countries in blue represent the Western bloc, defined as nations designated as 'unfriendly states' by Russia. Russia itself is dark red. Countries in light red are identified as Russia-leaning by the Economist Intelligence Unit, based on criteria including the imposition of sanctions, voting patterns in the United Nations, official government statements, and longstanding economic, political, and historical ties. Gray indicates neutral or unaligned states.

Ukraine, serve as a control group. The results suggest that Western companies refrained from investing into Russia and Russia-leaning countries and moved to bloc-free countries. Based on the results of the DiD model, counterfactual FDI flows for bloc-free countries are estimated. Comparing actual FDI inflows with these counterfactual projections reveals a significant increase in FDI inflows in these countries, with a substantial portion attributed to the redirection of investments due to the war. Detailed sectoral data indicates that the manufacturing sector—previously the dominant recipient of Western FDI inflows into Russia—has absorbed the majority of redirected investments, underscoring firms' adaptation to geopolitical uncertainties.

In the second stage of the analysis, a counterfactual real GDP trajectory is estimated for neutral-bloc countries. Therefore, a Bayesian Vector Autoregression (BVAR) model, trained on the pre-war period, is applied. Counterfactual real GDP is projected for 2022Q1–2023Q3 based on counterfactual FDI flows predicted by the DiD model, simulating a scenario without the redirection of FDI flows. However, this estimate is subject to forecasting errors and does not account for other exogenous shocks unobserved by the model. To eliminate the model's bias, a second prediction is estimated conditional on actual FDI flows. The difference between both predictions isolates the

net effect of the unexpected inflow of FDIs on real GDP. Adjusting real GDP for this difference yields the counterfactual trajectory of real GDP for each bloc-free country. The analysis reveals that the bloc-free countries Brazil, India, Mexico, Malaysia and Singapore benefited significantly from windfall FDIs. Real GDP in the affected countries increased by almost 2% on average since the onset of the war. These findings highlight the broader economic implications of the geopolitical realignment triggered by the invasion, identifying winners and losers in the evolving FDI landscape, with bloc-free countries in Southeast Asia and Latin America emerging as the early winners of the Russian-Ukrainian war.

This study relates to the growing literature on geoeconomics. Recent studies highlight how escalating geopolitical tensions—arising from the US-China Trade War, the Taiwan conflict, and the Russian invasion of Ukraine—are significantly altering global supply chains, trade, and cross-border investment (Aiyar et al., 2024; Alfaro and Chor, 2023; Freund et al., 2024; Goldberg and Reed, 2023). By providing case-specific evidence, it expands the literature on the consequences of the Russian invasion in Ukraine with respect to the international economic order. The empirical literature that has already explored the redirection of FDI flows since the onset of the war is very limited. Using data from fDi Markets, Gopinath et al. (2024) show that cross-border investment flows between geopolitical distant blocs have declined since the onset of the war. I contribute to these empirical findings as my results show that companies have instead invested in bloc-free countries such as Brazil, India, Mexico, Malaysia, and Singapore. By empirically demonstrating that the realignment of FDI flows prompted by geopolitical disruptions, such as the Russian invasion of Ukraine, can generate tangible economic benefits for these non-aligned countries, the study offers a novel perspective. It challenges the conventional focus on the risks and challenges of geopolitical conflicts, highlighting instead the potential economic gains that some nations may experience as ”unexpected economic winners” during periods of global uncertainty. This contribution not only broadens the understanding of the economic implications of geopolitical realignments, but also provides valuable insights into how countries can strategically position themselves in the evolving landscape of international trade and investment.

This paper is structured as follows. Section 2 presents the DiD model and the event study used to analyze the impact of the war on FDI flows. Section 3 uses a Bayesian VAR analysis to assess the economic impact of war-induced FDI realignment on recipient countries, demonstrating significant GDP gains in Brazil, India, Mexico, Malaysia, and Singapore. Finally, Section 4 sums up.

2 Data

The analysis relies on foreign direct investments sourced from the Orbis Crossborder Investment database, a Moody's Analytics product. Orbis Crossborder Investment along with its predecessor, *Zephyr*, have been widely utilized in the empirical literature to measure FDI flows (Damioli and Gregori, 2023; Bo, 2017; Clò et al., 2017). It is a robust and comprehensive resource for tracking cross-border projects, transactions, and company-related activities.[1] It offers detailed and timely data on publicly listed and privately held companies, including updates on the status of projects, transactions, and even market rumors. Orbis provides information on Greenfield investments, involving the establishment of new subsidiaries abroad, such as offices, branches, or production facilities built from the ground up, and cross-border mergers and acquisitions (M&As), encompassing foreign transactions where participation exceeds 10%.

For the empirical analysis, I restrict the dataset on Greenfield investments. Greenfield investments involving the facilitation of physical capital is much less flexible than M&As. Since Greenfield investments face higher risks, they should react more sensitive to rising geopolitical tensions. Furthermore, Greenfield investments account for the majority of all FDIs repored by Orbis (approximately 75%). The data is restricted on cross-border investments classified by Orbis as "announced," "completed," or "completed assumed" are included in the analysis. These categories reflect investments with a higher likelihood of materializing or having already materialized, providing a realistic picture of actual FDI activity. In contrast, investments labeled "rumor", "postponed," or "canceled/withdrawn" are excluded because they represent speculative, deferred, or abandoned projects that could introduce bias or distort the findings. This filtering process improves the robustness of the dataset, ensuring that the analysis is based on credible and actionable information. For each qualifying cross-border investment, detailed data are collected, including investment volume, source and destination countries, and the primary sector of the target investment. I identify and exclude the top 2.5% of observations per destination country as outliers. I note that the overall

[1] To evaluate its reliability as a data source for FDI, I compare its outputs with official macro data published by the United Nations Conference on Trade and Development (UNCTAD). Figure A.1 presents the results of this comparison, with data aggregated at the destination country-year level and transformed into natural logarithms. Panel (a) presents a scatterplot of UNCTAD versus Orbis FDI flows, revealing a strong cross-sectional correlation of 0.72. Panel (b) illustrates the trajectory of FDI flows from both sources over the 2000–2020 period, showing no significant divergence in trends. Panel (c) demonstrates that the two datasets exhibit similar distributional properties, further affirming their consistency. Based on this evidence, I conclude that the Orbis Crossborder Investment database exhibits sufficient representativeness to support the analysis and derive meaningful conclusions.

results are robust to different cut-offs, i.e. 1% and 5%. The Greenfield FDI data is subsequently aggregated at the country-to-country pair level on a quarterly basis. This cleaning and aggregation process yields 53,659 observations, as summarized in Table 1. The dataset has a mean value of 0.12 billion USD and a standard deviation of 0.29 billion USD, reflecting a slightly right-skewed distribution. This skewness is primarily driven by a small number of large companies making substantial investments in foreign countries.

The trajectory of Western FDI flows into different geopolitical blocs between 2016 and 2024 is displayed in Panels (a) and (b) of Figure 2. According to Orbis Crossborder Investment, approximately 111 billion USD were invested by Western companies between 2016 and 2020. A majority of these FDIs (53%) were directed within the Western bloc, while one-third flowed into bloc-free countries, and 12% targeted Russia and Russia-leaning countries as Panel (c) depicts.

The COVID-19 pandemic caused a significant decline in Western FDIs across all destination categories, with outflows dropping by more than half in the first two quarters of 2020. From 2020Q3 onward, aggregated FDI data suggest a gradual recovery from the pandemic. Although pre-pandemic levels were not reached again, FDI flows from the Western bloc stabilized at 60 billion USD still accounting for roughly 50% of all Western outflows until 2021Q4.

The onset of the war in Ukraine marks a turning point for several notable trends in global FDI flows. Although the total volume of FDI has remained stable, its distribution across target blocs has shifted significantly. Western FDI into Russia has plummeted to nearly zero, and FDI flows into Russia-leaning countries have declined from about 11% to 7%. In contrast, FDI flows into bloc-neutral countries have risen from 32% to 39%. Meanwhile, the share of FDI within the Western bloc has remained remarkably stable, showing only minor deviation from its pre-war average and no deviation from its pre-pandemic average since the start of the war.

Regarding Western flows into Russia, this trends was subsequently disrupted by the onset of the war in Ukraine. Since 2022Q1, Western FDI flows into Russia have declined to nearly zero. Within the Western bloc, as well as between Western countries and Russia-leaning and bloc-free countries, the recovery from the COVID-19 pandemic proceeded. FDI flows into Western countries have stabilized at approximately 35 billion USD, while FDI flows into bloc-free countries have increased by 22% since the war.

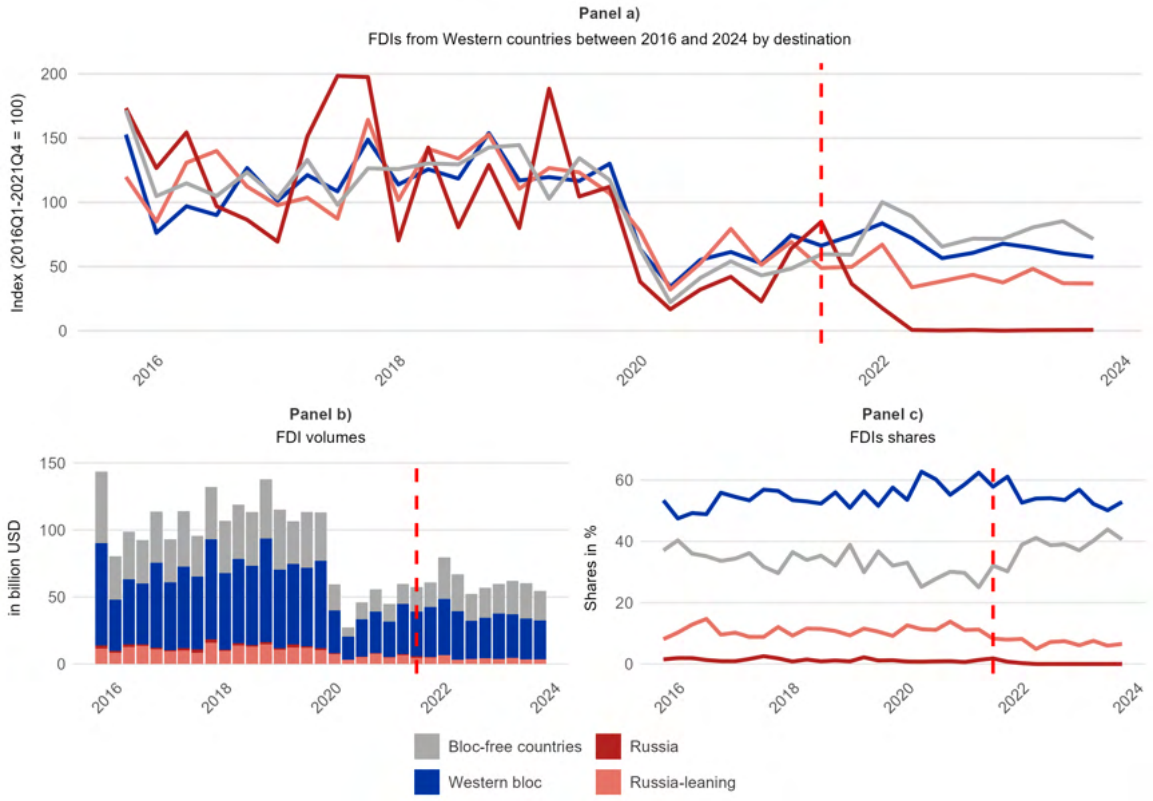

Figure 2: Panel a) shows quarterly Foreign Direct Investment inflows from Western countries within the Western bloc (blue line), to Russia (dark red line), to Russia-leaning countries (light red line) and to bloc-free countries (grey line). FDI inflows are normalized over the period from 2016Q1 to 2021Q4, i.e., the quarter before Russia's invasion plans became publicly known. Panel b) gives the volumne of FDI flows from the Western bloc by destination bloc of total FDI flows per quarter in USD, while panel c) gives the corresponding shares of Western FDI flows by destination. Aggregated data is based on ORBIS firm-level data. The dashed red line marks the beginning of the Russian invasion of Ukraine.

The treatment variable in the DiD reflects the geopolitical sorting of each country since the onset of the war into a Western bloc, a Russia-leaning bloc, and bloc-free countries. While all divisions of the world into geopolitical blocs are, to some extent, debatable, the Western bloc is relatively well-defined. In response to the invasion, the United States, the European Union, and other Western allies imposed extensive sanctions on Russia. This bloc collectively found itself on Russia's list of "unfriendly states". Most countries in this bloc are members of NATO, the European Union, or are otherwise militarily aligned with the United States. A notable exception is Turkey, which, despite its NATO membership, is not classified by Russia as an unfriendly country and is therefore categorized as bloc-free. The identification of Russia-leaning states is less straightforward since the potential candidates are aligned in rather loose alliances compared to the more cohesive Western bloc and have acted with less uniformity. Following the methodology of the Economist Intelligence Unit, I

Variables	Source	Obs.	Mean	SD	Min	Max
Greenfield FDIs	ORBIS Crossborder Investment	53,659	0.12	0.29	0.00	7.02
GDP of the source country	World Bank	404,160	1,717.81	3,683.48	0.92	22,996.10
GDP of the destination country	World Bank	414,528	673.36	2,201.84	0.06	22,996.10
Trade flow of the source country	CEPII	376,876	2.18	10.61	0.00	361.33
Trade flow of the destination country	CEPII	379,992	2.18	10.41	0.00	350.63
Distance	CEPII	421,740	6,203.08	4,507.46	55	19,930
Contiguity	CEPII	421,740	0.03	0.18	0	1
Common language	CEPII	409,664	0.14	0.34	0	1
Colonial links	CEPII	421,540	0.04	0.20	0	1
Common legal origins	CEPII	421,412	0.25	0.44	0	1
Regional trade agreements	CEPII	421,740	0.34	0.47	0	1

Table 1: Descriptive statistics of variables used in the analysis from 2005 until 2023. Greenfield FDIs, GDP and Trade flow data is in billion USD. The table includes information for observations where the value of Greenfield investments is positive

therefore employ a set of criteria, including the imposition (or lack thereof) of sanctions, voting patterns in the United Nations General Assembly, official government statements, and longstanding economic, political, and historical ties. Figure 1 illustrates the divide, categorizing states into three groups: Russia-leaning nations, the Western bloc imposing sanctions, and neutral states avoiding clear alignment. Based on these criteria, the list of Russia-friendly states includes, among others, China, North Korea, Myanmar, Kazakhstan, Kyrgyzstan, Tajikistan, Iran, Syria, Armenia, Algeria, Angola, Venezuela, and Cuba. Note that certain BRICS members, such as Brazil, India, and South Africa, are not classified as Russia-leaning due to their non-alignment in the conflict and their pursuit of independent foreign policies. Other countries adopted a less stringent approach or have not taken action at all and are categorized as bloc-free.

The control variables included in the empirical analysis are standard Gravity models variables. Data on geographic distance between countries, contiguity, common language, colonial links, common legal origin, and trade agreement is taken from the CEPII database. GDP data is retrieved from the World Bank. Descriptive statistics are displayed in Table 1.

3 Difference-in-Differences and event study

To estimate how the war in Ukraine and the associated restructuring of the geopolitical landscape has affected FDI flows from the Western bloc into Russia, Russia-leaning and bloc-free countries,

three DiD models, one for each destination bloc, within an Event-Study framework are estimated. The model results indicate how the war in Ukraine and the associated restructuring of the geopolitical landscape has affected FDI flows from the Western bloc into Russia, Russia-leaning and bloc-free countries.

I note that the model has to be estimated for each destination bloc for which the war has created distinct economic and political conditions. Russia has been heavily impacted by severe economic sanctions and restricted market access, rendering it highly unattractive for Western FDI flows. Russia-leaning countries, while not directly subject to sanctions, face indirect repercussions due to their political alignment. Western companies may avoid investing in these nations for a variety of reasons, including altruistic considerations, perceived comparative disadvantages related to information asymmetry, or structural governmental deprivation. In contrast, bloc-free countries—those maintaining a neutral stance—are less affected by geopolitical tensions and may even benefit from diverted FDI. Risk-averse companies seeking investment opportunities in developing markets are more likely to favor neutral-bloc countries such as Brazil, India, or Mexico, which offer relatively stable prospects, over Russia-aligned countries like China or Central Asia.

3.1 Empirical specification

The DiD approach is used to estimate a Gravity-like equation. In the empirical literature, the Gravity model is widely regarded as the standard tool for analyzing the determinants of foreign direct investment due to its flexible and empirically robust framework (Hijzen et al., 2008; Head and Ries, 2008; de Sousa and Lochard, 2011; Gregori and Naldo, 2021; **?**; Gopinath et al., 2024). To analyze how companies based in the Western bloc have adjusted their cross-border investment behavior since the onset of the war, the following DiD model is estimated:

$$FDI_{i,j,t} = \exp\left[\alpha + \beta\,\text{Postwar}_t \times \text{Treatment}_{i,j,t} + \mu X_{i,j,t} + \phi_i + \omega_j + \theta_t + \varepsilon_{i,j,t}\right] \tag{1}$$

Let $FDI_{i,j,t}$ represent the amount of FDI flows from source country i to destination country j in period t. The variable $Treatment_{i,j,t}$ is a binary variable that equals one if the source country is part of the Western bloc and the destination country belongs to the treatment group, and zero otherwise. *Postwar*, is a dummy that is one for all periods since the onset of the war, i.e. after 2021Q4, and zero otherwise. The coefficient β of the interaction $Period_t \times Treatment_{i,j,t}$ captures how FDI flows into the treatment group have changed since the onset of the war relatively to FDI flows within the Western bloc. The empirical specification further includes a constant term, α, as

well as time fixed effects, θ_t, source country fixed effects, ϕ_i, and destination country fixed effects, ω_j. The error term, $\varepsilon_{i,j,t}$, accounts for unobserved idiosyncratic shocks. $X_{i,j,t}$ represents a vector of control variables commonly included in Gravity models (Damioli and Gregori, 2023). Specifically, the controls account for the geographical distance between country pairs, whether the countries share a common border, the presence of trade agreements, the use of a common language, historical colonial ties, shared legal origins, bilateral trade flows reported by both the source and destination countries, as well as the GDP of the source and destination country.

For many country pairs, FDI flows are equal to zero for certain quarters, leading to a zero-inflated distribution typical of Gravity models Damioli and Gregori (2023). To address this, the empirical literature recommends estimating the model using the Poisson Pseudo Maximum Likelihood (PPML) estimator (Santos Silva and Tenreyro, 2006; Head and Mayer, 2014). This method overcomes the bias introduced by log-linearized OLS, which excludes observations with zero values. Additionally, the PPML estimator effectively manages heteroscedasticity, a common challenge in Gravity models, particularly when residuals are correlated with countries' GDP (Nordås and Rouzet, 2017).

Additionally, an event study approach is estimated to analyze pre-trends and determine the exact timing of changes in FDI flows between control and treatment group. The Gravity-like equation is therefore adjusted as follows:

$$FDI_{i,j,t} = \exp\left[\alpha + \sum_{t=-10}^{-2} \beta_t \,\text{Period}_t \times \text{Treatment}_{i,j,t} + \sum_{t=0}^{8} \gamma_t \,\text{Period}_t \times \text{Treatment}_{i,j,t} + \mu X_{i,j,t} + \phi_i + \omega_j + \varepsilon_{i,j,t}\right] \tag{2}$$

$Period_t$ is a binary indicator set to one if the war begins in t quarters or if t quarters have passed since the beginning of the war. The reference period is chosen to be $t = -1$, corresponding to 2021Q4. The analysis considers 10 quarters prior to and 8 quarters following the start of the war. The coefficients β and γ of the interaction $Period_t \times Treatment_{i,j,t}$ capture how FDI flows into the treatment group in period t are different from FDI flows within the Western bloc relative to the beginning of the war at $t = 0$.

The central identifying assumption of both empirical approach, the DiD and the event study, is that - in the absence of the new geopolitical alignment since the onset of the war - FDI flows from Western countries into Russia, Russia-leaning and bloc-free countries would have evolved similarly to FDI flows within the Western bloc. This assumption can only be tested for the pre-war but not for the post-war period.

One potential threat to this assumption is that the Russian invasion of Ukraine has indirectly affected all Western companies, exposing them to increased uncertainty and economic pressures violating the Stable Unit Treatment Value Assumption assumption. Indeed, the war triggered a global surge in geopolitical risk, as highlighted by the Geopolitical Risk Index (Caldara et al., 2020). This shock, coupled with the subsequent rise in energy prices—particularly pronounced in Europe—significantly disrupted economic performance across many Western countries (Blagov et al., 2024).

While these disruptions pose potential concerns, I argue that their impact on the empirical strategy is of minor importance. The economic shock may have led to a reduction in FDI outflows by Western companies. However, as long as all Western FDI outflows are affected homogeneously, this bias is mitigated by the Difference-in-Differences approach. The empirical strategy is at risk, however, if FDI flows within the West are affected heterogeneously compared to FDI flows into the treatment groups. If Western companies adopted friendshoring strategies—reallocating cross-border investments away from Russia and its allied states toward more geopolitically aligned countries—FDI flows within the West would have increased due to the war. This could lead to an overestimation of positive DiD estimators and an underestimation of negative DiD estimators. Nevertheless, empirical evidence suggests that friendshoring has not occurred. **?** find no indication that the U.S.—the largest source of Western FDI—has increased investments in allied countries since the onset of the war. Similarly, Aiyar et al. (2023) find no evidence of friendshoring within the Western bloc since the war began.

3.2 Results

The results of the DiD model (Equation 1) are presented in Table 2. I begin by examining the impact of the war in Ukraine on FDI flows from Western bloc countries into Russia. The estimated coefficients are shown in Column (1). The key variable of interest, the interaction term *Treatment* $\times$ *Postwar*, captures the change in FDI flows from the Western bloc into Russia since the onset of the war, relative to FDI flows within the Western bloc. This variable is highly significant, with the coefficient indicating a reduction in FDI flows by 3.0253 log units, equivalent to a 95% decline.

The estimated effects of the control variables included in Equation 1 align with existing empirical evidence. The coefficient for *distance* is negative and statistically significant, confirming the core assumption of the Gravity model that geographically closer countries tend to maintain stronger economic ties. Additionally, the results indicate that colonial links, a shared legal origin, contiguity,

and regional trade agreements all promote FDI flows. The model explains 43% of the total variance, drawing on the variation in 29,680 observations.

Panel (a) of Figure 3 - showing the corresponding event study results - plots the coefficients of the interaction term $Period_t \times Treatment_{i,j,t}$ from equation 2 along with its 90% and 95% confidence bands in light-blue. These coefficients capture the relative development of FDI flows into Russia compared to those into the Western bloc over time, with the coefficients normalized to 2021Q4, the quarter preceding the war. The results indicate no significant differences between the treatment and control groups before the war, confirming that FDI flows into Russia and the Western bloc followed the same pre-trend. However, I find that FDI flows into Russia have dropped sharply since the onset of the war. The estimated coefficients, ranging from -3 to -5, suggest that Western FDI flows into Russia have nearly ceased.

Next, I analyze the DiD results for the group of Russia-leaning countries reported in Table 2, Column (2). The coefficient of the interaction term $Treatment \times Postwar$ is negative and statistically significant, similar to the results in Column (1). These findings suggest that Western companies have not only refrained from investing in Russia but have also reduced cross-border investments into countries geopolitically aligned with Russia compared to FDI flows within the Western bloc. While the magnitude of the effect is smaller, it remains substantial, indicating a reduction of nearly 40%. The control variables display the expected signs, and the model explains 44.7% of the variance in FDI flows, based on 37,160 observations.

The corresponding event study results, presented in Panel (a) of Figure 4, confirm that Western FDI flows into Russia-leaning countries and the Western bloc shared the same pre-trend. However, the plotted post-war coefficients are not significantly different from zero. This outcome is primarily influenced by the choice of the reference quarter, 2019Q4, where the coefficient is relatively small compared to other pre-war coefficients. Consequently, while post-war coefficients are markedly lower than pre-war coefficients, the scaling effect of the small reference quarter coefficient (2021Q4) impede the identification of significant effects in the post-war period. The results indicate that FDI flows into Russia and Russia-leaning countries have decreased compared to FDI flows within the Western bloc. This finding suggests that companies adapted to the new geopolitical realities.

	(1)	(2)	(3)
	Dependent variable: Greenfield FDIs		
	Russia	Russia-leaning	Bloc-free countries
Treatment × Postwar	-3.0253***	-0.4014***	0.2615***
	(0.5253)	(0.1439)	(0.0563)
Distance	-0.000045***	-0.000024*	-0.000084***
	(0.000015)	(0.000014)	(0.000011)
Colonial links	0.2090**	0.2121***	0.1674**
	(0.0812)	(0.0779)	(0.0850)
Common legal origins	0.3879***	0.3412***	0.3018***
	(0.0737)	(0.0787)	(0.0565)
Contiguity	0.1824*	0.1033	0.0856
	(0.1060)	(0.1081)	(0.1025)
Common language	0.1310	0.2471**	0.2687***
	(0.1096)	(0.1091)	(0.0804)
Regional trade agreements	0.1768*	0.1295	0.1161
	(0.0944)	(0.0901)	(0.0763)
Trade flow of the source country	-0.0078**	-0.0006	-0.0077**
	(0.0039)	(0.0027)	(0.0036)
Trade flow of the destination country	0.0115***	0.0037	0.0095**
	(0.0044)	(0.0029)	(0.0043)
GDP of the destination country	-0.000071	0.000008	-0.000044
	(0.000044)	(0.000031)	(0.000042)
GDP of the source country	-0.000041	-0.000009	-0.000020
	(0.000042)	(0.000040)	(0.000035)
Source country fixed effects	Yes	Yes	Yes
Destination country fixed effects	Yes	Yes	Yes
Time fixed effects	Yes	Yes	Yes
Observations	29,680	37,160	63,316
R-squared	0.7842	0.7710	0.7104

Table 2: The table shows the summary of regression results of the equation 1. The interaction of *Treatment* and *Period* gives the effect of the Russian invasion on FDI flows from Western country into the treatment group *Russia, Bloc-free countries and Russia-leaning* compared to FDI flows within the Western bloc. Standard errors are in parentheses and clustered on the country-pair level. Significance levels: $^{*}p < 0.1$, $^{**}p < 0.05$, $^{***}p < 0.01$.

Lastly, I investigate whether companies redirected their FDI flows to bloc-free states. The results, presented in Column (3), reveal a positive and statistically significant interaction coefficient, in contrast to the results in Columns (1) and (2). This suggests that, since the onset of the war, FDI flows into bloc-free countries have increased significantly relative to FDI flows within the Western bloc. The estimated coefficient indicates an increase of nearly 30%. The control variables exhibit the expected signs, and the model explains 41.5% of the variance in FDI flows, based on 63,316 observations.

The corresponding event study results, shown in Figure 5, confirm that Western FDI flows into bloc-free states and within the Western bloc shared a similar pre-trend. However, immediately after

the start of the war, FDI flows into bloc-free countries increased significantly and remained elevated throughout the observed post-war period. The estimated coefficients range between 0.4 and 0.6 indicating a substantial increase of FDI inflows compared to within Western bloc FDI flows.

The results of the DiD model and the event study show that Western FDI flows into Russia and Russia-leaning states have decreased, while FDI flows into bloc-neutral countries have decreased compared to FDI flows within the Western bloc. This suggests that Western companies have redirected their cross-border investments along geopolitical lines from countries with a strong alignment to Russia into neutral countries.

3.3 Sectoral analysis

To provide more evidence for the redirection of FDI flows, in the next step of the analysis the sectoral distribution of FDI flows since the onset of the war is analyzed. If companies have redirected FDI from Russia and Russia-leaning countries to bloc-free countries, the target sectors in the new destinations are expected to align with those previously targeted.

Looking at mere numbers provides descriptive evidence. Panels (b) and (c) of Figure 3 illustrate Western FDI flows into Russia by sectors from 2005 to 2023, presented in both billion USD and as percentage shares. Historically, Russia's manufacturing sector attracted the largest share of FDI inflows from Western companies, although its dominance declined from 80% in 2005 to 50% in 2021s. Surprisingly, FDI flows into the energy sector have played only a minor role. Conversely, trade and services have gained prominence as target sectors. Since the onset of the war, FDI flows into the manufacturing sector have almost entirely ceased. According to Orbis data, the remaining cross-border investments are primarily directed toward services and retail trade.

Where did the FDIs into Russia's manufacturing sector go? Panel (c) of Figure 5 reveals that the share of cross-border investments in the manufacturing sector within bloc-free countries has risen from approximately 40% before the war to over 50% after the war. Panel (b), which displays the volume of FDI flows by sector, suggests that this shift in shares is driven by an absolute increase in FDI flows into the manufacturing sector within bloc-free countries and not by a redistribution of FDI flows across shares.

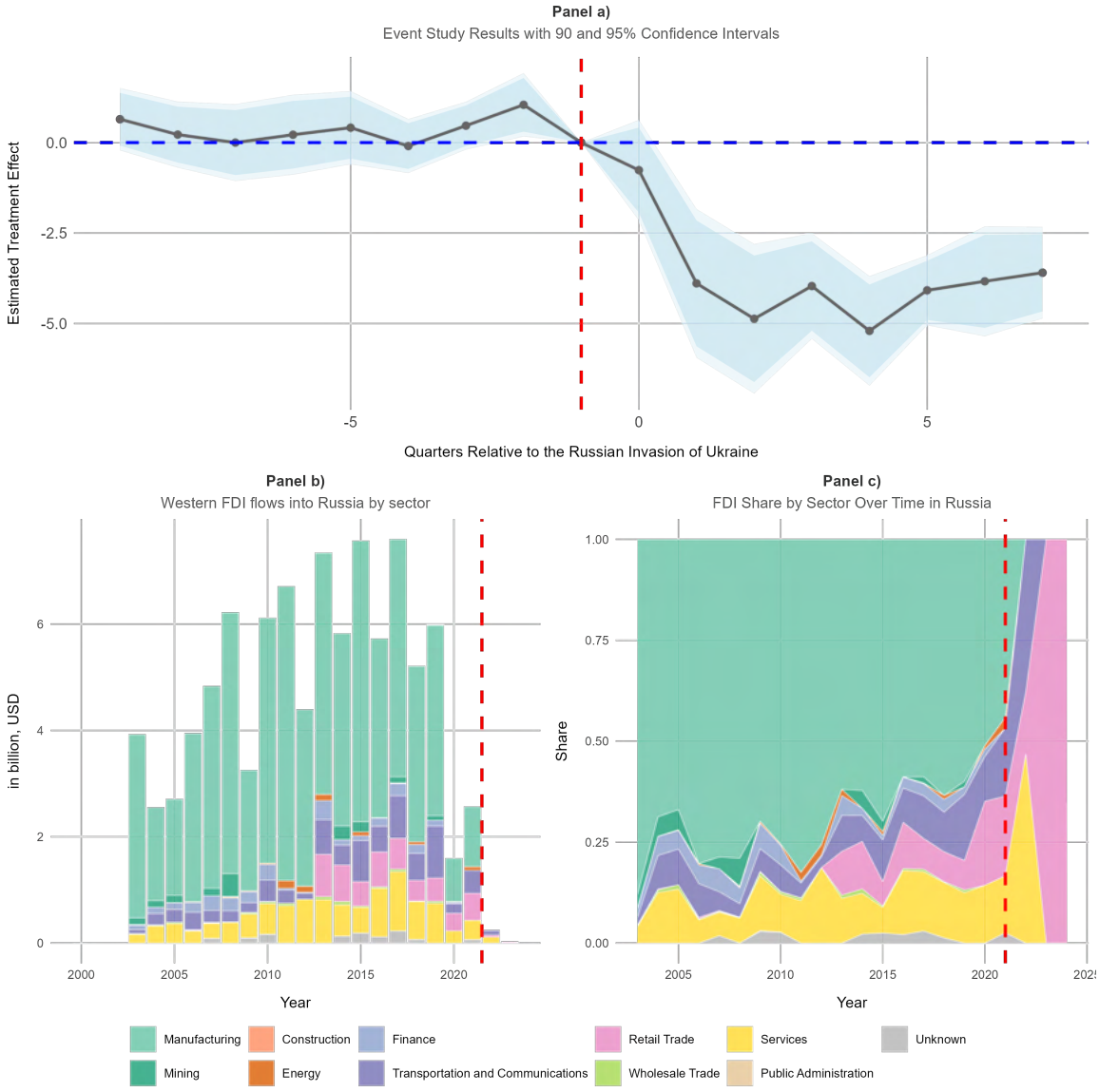

Figure 3: FDI flows from Western countries into Russia: Panel a) presents the results of an event study applied to quarterly data spanning 2019Q1 to 2023Q4, covering 52 source countries and 56 destination countries. The point estimates represent the coefficients of the treatment dummy (FDI flows to Russia) interacted with a time dummy, representing the effect of the Russian invasion of Ukraine on Russian FDI inflows from Western countries compared to FDI flows within the Western bloc. The horizontal axis denotes quarters relative to the invasion date, while the vertical axis indicates the estimated effect size. The analysis reveals a statistically significant decline, with Russian FDI inflows dropping by approximately 90% from pre-invasion levels. Confidence intervals are shown at the 90% (blue) and 95% (light blue) levels. Panel b) illustrates the volume of FDI inflows from Western countries into Russia, expressed in billion USD, broken down by sector of destination Panel c) depicts the sectoral distribution of these FDI inflows from Western countries to Russia, represented as shares. The dashed red line marks the beginning of the Russian invasion of Ukraine.

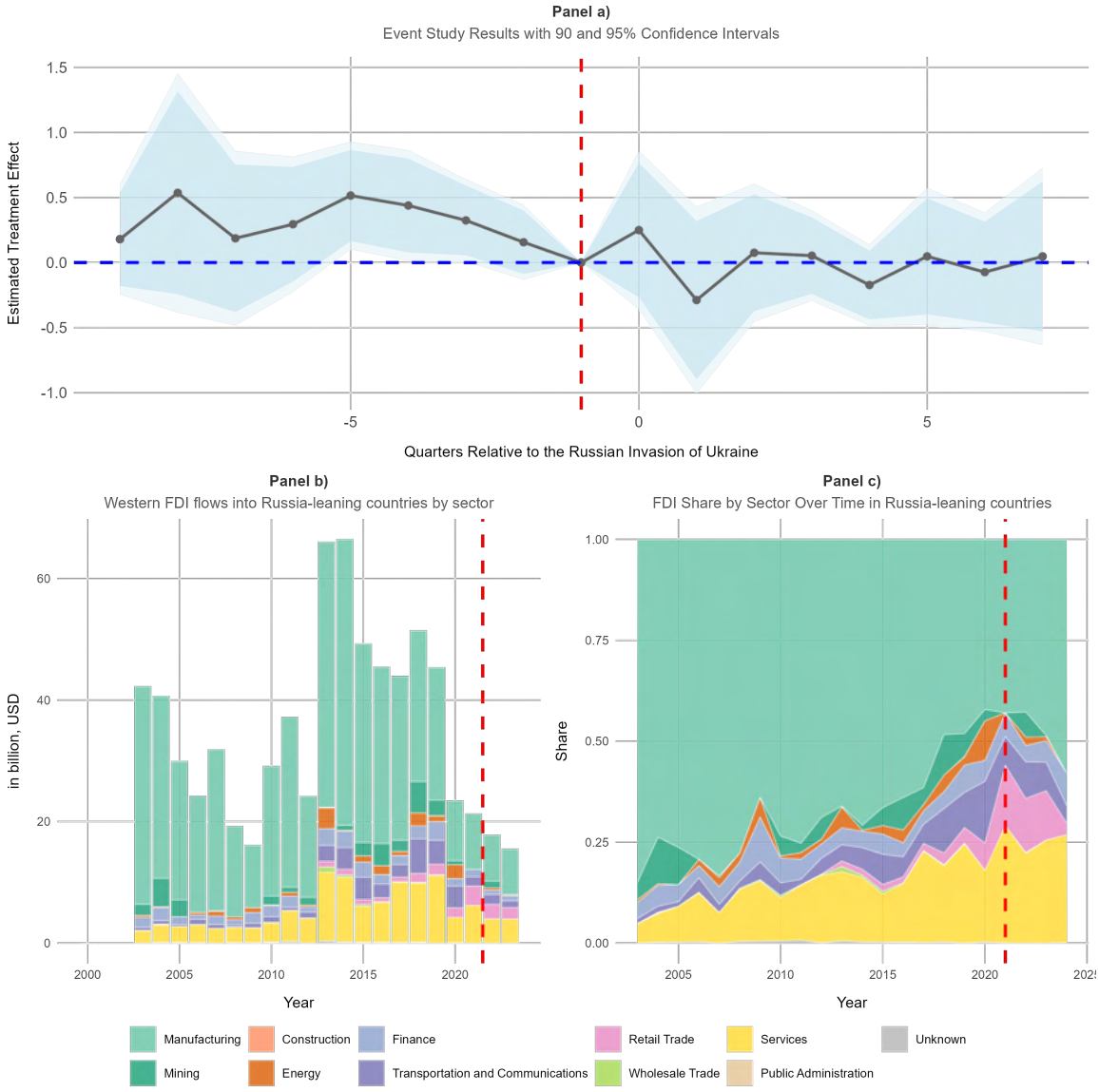

Figure 4: FDI flows from Western countries into Russia-leaning countries: Panel a) presents the results of an event study applied to quarterly data spanning 2019Q1 to 2023Q4, covering 52 source countries and 82 destination countries. The point estimates represent the coefficients of the treatment dummy (FDI flows to Russia-leaning countries) interacted with a time dummy, representing the effect of the Russian invasion of Ukraine on FDI inflows from Western countries to Russia-leaning countries compared to FDI flows within the Western bloc. The horizontal axis denotes quarters relative to the invasion date, while the vertical axis indicates the estimated effect size. The analysis reveals a statistically significant incline, with Western FDI flows to Russia-leaning countries increasing by approximately 50% from pre-invasion levels. Confidence intervals are shown at the 90% (blue) and 95% (light blue) levels. Panel b) illustrates the volume of FDI inflows from Western countries into Russia-leaning countries, expressed in billion USD, broken down by sector of destination Panel c) depicts the sectoral distribution of these FDI inflows from Western countries to into Russia-leaning countries, represented as shares. The dashed red line marks the beginning of the Russian invasion of Ukraine.

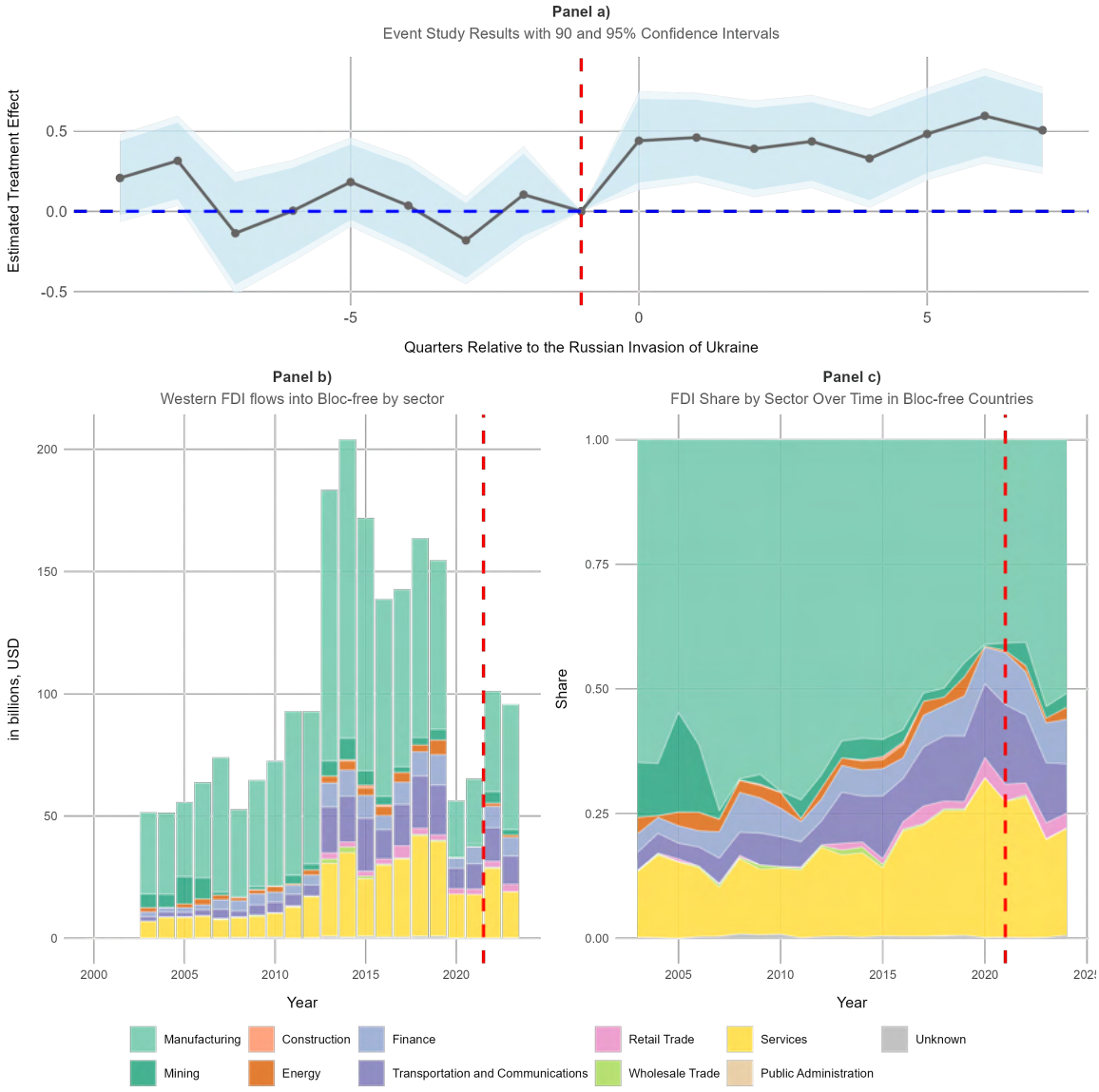

Figure 5: FDI flows from Western countries into bloc-free countries: Panel a) presents the results of an event study applied to quarterly data spanning 2019Q1 to 2023Q4, covering 52 source countries and 176 destination countries. The point estimates represent the coefficients of the treatment dummy (FDI flows to bloc-free countries) interacted with a time dummy, representing the effect of the Russian invasion of Ukraine on FDI inflows from Western countries to bloc-free countries compared to FDI flows within the Western bloc. The horizontal axis denotes quarters relative to the invasion date, while the vertical axis indicates the estimated effect size. The analysis reveals a statistically significant incline, with Western FDI flows to bloc-free countries increasing by approximately 50% from pre-invasion levels. Confidence intervals are shown at the 90% (blue) and 95% (light blue) levels. Panel b) illustrates the volume of FDI inflows from Western countries into bloc-free countries, expressed in billion USD, broken down by sector of destination Panel c) depicts the sectoral distribution of these FDI inflows from Western countries to into bloc-free countries, represented as shares. The dashed red line marks the beginning of the Russian invasion of Ukraine.

To provide evidence beyond descriptive analysis, Equation 1 is re-estimated on two subsamples, restricted on cross-border investments in (1) production sectors (including manufacturing, mining, construction, and energy) and (2) service sectors (including finance, transportation and communication, retail trade, wholesale trade, services, and public administration). The results, reported in Table 3, align with the baseline findings in Table 2: Since the onset of the war, Western FDI flows into Russia and Russia-leaning countries have decreased, while FDI flows into bloc-free countries have increased compared to those within the Western bloc.

Dependent variable:	Russia		Russia-leaning		Bloc–free	
Greenfield FDIs into:	Production	Services	Production	Services	Production	Services
	(1)	(2)	(3)	(4)	(5)	(6)
Treatment × Postwar	-22.1219***	-2.1208***	-0.5582**	-0.2548*	0.3592***	0.1808***
	(0.1521)	(0.4875)	(0.2537)	(0.1326)	(0.0946)	(0.0689)
Distance	-0.0000395**	-0.0000527***	-0.00000818	-0.0000278**	-0.0001010***	-0.0000668***
	(0.0000190)	(0.0000156)	(0.0000169)	(0.0000141)	(0.0000144)	(0.00000972)
Contiguity	0.2512*	0.1142	0.0937	0.0855	0.1969	0.0188
	(0.1427)	(0.1163)	(0.1648)	(0.1129)	(0.1464)	(0.1081)
Common language	-0.0479	0.2261*	0.2205	0.2671**	0.0723	0.3432***
	(0.1548)	(0.1207)	(0.1860)	(0.1112)	(0.1260)	(0.0922)
Colonial links	0.0912	0.2596***	0.0867	0.2786***	-0.0845	0.2670***
Common legal origins	(0.1172)	(0.0785)	(0.1182)	(0.0776)	(0.1110)	(0.0777)
	0.4525***	0.3618***	0.3253**	0.3504***	0.2506***	0.3459***
	(0.1080)	(0.0822)	(0.1333)	(0.0786)	(0.0875)	(0.0612)
Regional trade agreements	0.1656	0.1591*	0.0422	0.1904**	-0.0860	0.2197***
	(0.1243)	(0.0952)	(0.1390)	(0.0810)	(0.1120)	(0.0737)
GDP of the destination country	0.0000936	-0.0002016***	0.0000559	-0.0000341	0.0000657	-0.0001532***
	(0.0000617)	(0.0000446)	(0.0000516)	(0.0000413)	(0.0000603)	(0.0000452)
GDP of the source country	0.0000627	-0.0000937**	0.0000251	-0.0000405	0.0000815	-0.0000760**
	(0.0000986)	(0.0000403)	(0.0000944)	(0.0000444)	(0.0000743)	(0.0000352)
Source country fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Destination country fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Time fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Observations	28,140	29,680	33,880	37,160	57,036	63,316
R-squared	0.6345	0.7595	0.6455	0.7622	0.5814	0.7210
BIC	612,334,317.2	576,030,719.5	739,047,218.0	670,650,870.0	1,344,973,073.0	1,110,651,584.4

Table 3: The table shows the summary of regression results of the equation 1 for two subsets per treatment group: FDI flows into Manufacturing Sector and FDI flows into Service Sector. The interaction of *Treatment* and *Period* gives the effect of the Russian invasion on FDI flows from Western country into the treatment group *Russia, Bloc-free countries and Russia-leaning* compared to FDI flows within the Western bloc. Standard errors are in parentheses and clustered on the country-pair level. Significance levels: $^{*}p < 0.1$, $^{**}p < 0.05$, $^{***}p < 0.01$.

However, a comparison of the interaction coefficient *Treatment times Postwar* across target sectors offers new insights. The decline in FDI flows to Russia and Russia-leaning countries is more pronounced in production sectors (Columns (1) and (3)) than in service sectors (Columns (2) and

(4)). Contrary, the findings indicate that FDI flows into bloc-free countries have increased more substantially in production sectors (Column (5)), with an interaction coefficient of 0.39 log-units, equivalent to a 43% rise, compared to a 19% increase in service sectors (Column (6)).

The sectoral analysis of target sectors provides additional evidence that companies have indeed redirected cross-border investments from Russia and Russia-leaning states to bloc-free countries along the new geopolitical lines established since the onset of the war. The findings suggest that the manufacturing sectors—previously the dominant recipient of Western FDI inflows into Russia—in bloc-free countries have absorbed the majority of redirected investments, underscoring firms' adaptation to geopolitical uncertainties.

3.4 Identifying the early winners of war

To identify the early beneficiaries of the strategic reallocation of foreign direct investment in response to geopolitical tensions, the following section examines heterogeneities in FDI flows across different destination blocs. Specifically, I estimate the country - specific effects of the war on FDI by comparing actual FDI inflows with counterfactual FDI inflows — a simulated scenario in which no geopolitical-driven realignment has taken place. This counterfactual analysis relies on the DiD from euqation 1. By setting the treatment variable to zero for Russia-leaning and bloc-free countries, I estimate what FDI inflows would have been in the absence of the war-induced investment shifts. The difference between these counterfactuals and actual FDI inflows reveals the magnitude of the war's impact on global investment patterns.

Figure 6 illustrates this differences showing how the war in Ukraine has reshaped the international flow of investments. Many countries experienced lower actual FDI inflows compared to their counterfactual expectations. This pattern is most pronounced in Russia and its allies in parts of Africa and Asia. Most notably, DiD model counterfactuals suggests that actual Western FDI flows are approximately 30 % lower than counterfactuals.

In contrast, certain emerging countries in Africa, Latin America, and Southeast Asia appear to have absorbed a portion of the redirected FDIs, reflecting shifting investor preferences toward lower-risk alternatives. These investment gains are particularly noticeable in bloc-free nations (compare Figure 1). While the neutral bloc consists of 125 countries, approximately 70% of all cross-border investment volume is concentrated in just ten countries: the United Arab Emirates, Brazil, Chile, India, Indonesia, Mexico, Malaysia, Saudi Arabia, Singapore, and Vietnam. Panel (a) of Figure 7 illustrates the share of total cross-border flows into bloc-free countries captured by these ten

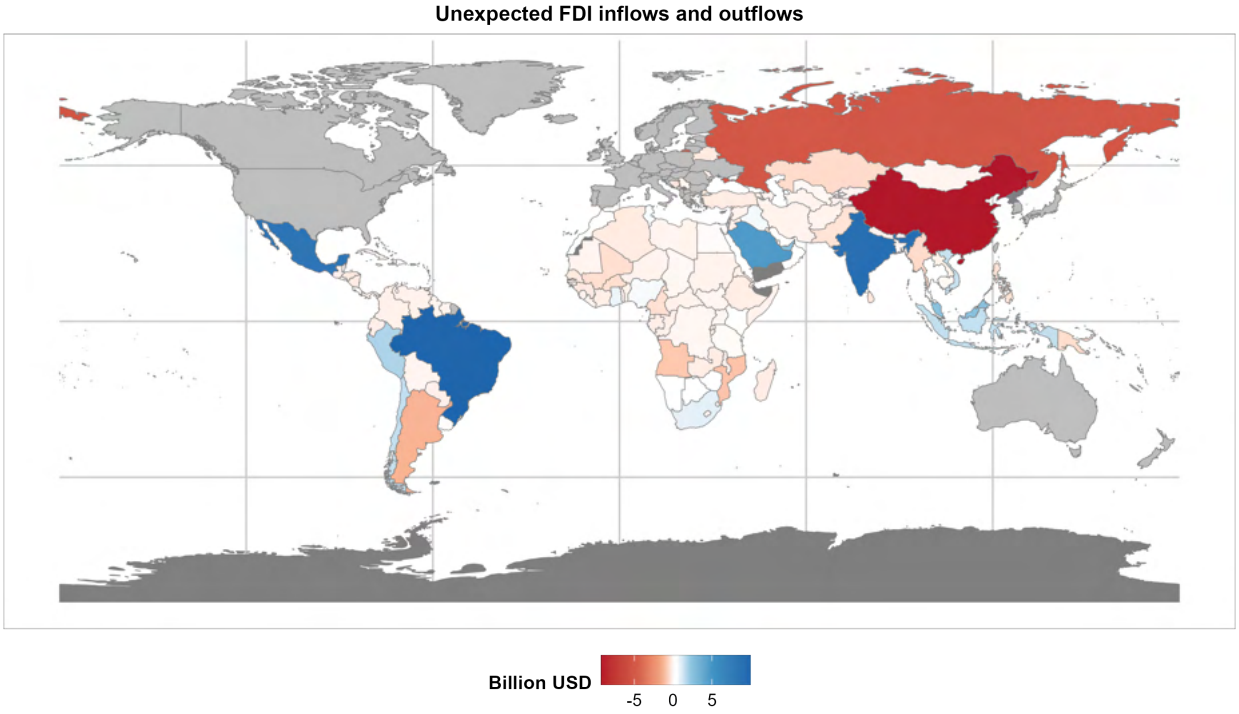

Figure 6: The map illustrates difference of the actual Western FDI inflow and the counterfactual FDI inflow in the post-war period between 2022Q1 and 2024Q4. Counterfactual FDI inflow estimates are based on the DiD model of equation 1. Countries shaded in red indicate a decline in actual FDI inflows compared to counterfactual, while while those in blue show an increase. Light gray represents the Western bloc. Data for dark gray shaded countries is missing.

nations between 2005 and 2023. The figure reveals that the shares of the United Arab Emirates, Chile, India, Mexico, and Singapore have remained relatively stable over time, while more variation is observed for Brazil, Indonesia, Malaysia, Saudi Arabia, and Vietnam. Since the onset of the war, no significant changes have been detected in the distribution of destination country shares. This finding is in line with Alfaro and Chor (2023) who find that US companies have increased their greenfield FDIs in the manufacturing sector of Mexico.

Panel (b) of Figure 7 depicts the total FDI inflows (in billion USD) during the two years prior to the war (Pre-War) and the two years following the war (Post-War) for the top 10 destinations of Western FDI flows into bloc-free countries. In nearly all countries, the Post-War inflows exceeds the Pre-War inflows, with Indonesia and Chile being the exceptions where FDI flows have declined. India, Mexico, and Brazil emerge as the primary destinations for Western FDI flows within the bloc-free category since the onset of the war, each experiencing an increase of approximately 5 billion USD in cross-border investments. FDI flows into Saudi Arabia and the United Arab Emirates have more than doubled during the same period.

A comparison between the actual FDI flows and the model predictions highlights the major beneficiaries of the war in terms of cross-border investments. Since the onset of the war, India, Mexico, and Brazil have attracted an additional $6 billion, $5 billion, and $7 billion USD, respectively. Similarly, actual FDI flows into Singapore, the United Arab Emirates, and Saudi Arabia have significantly exceeded the Post-War predictions, indicating strong gains in cross-border investment.

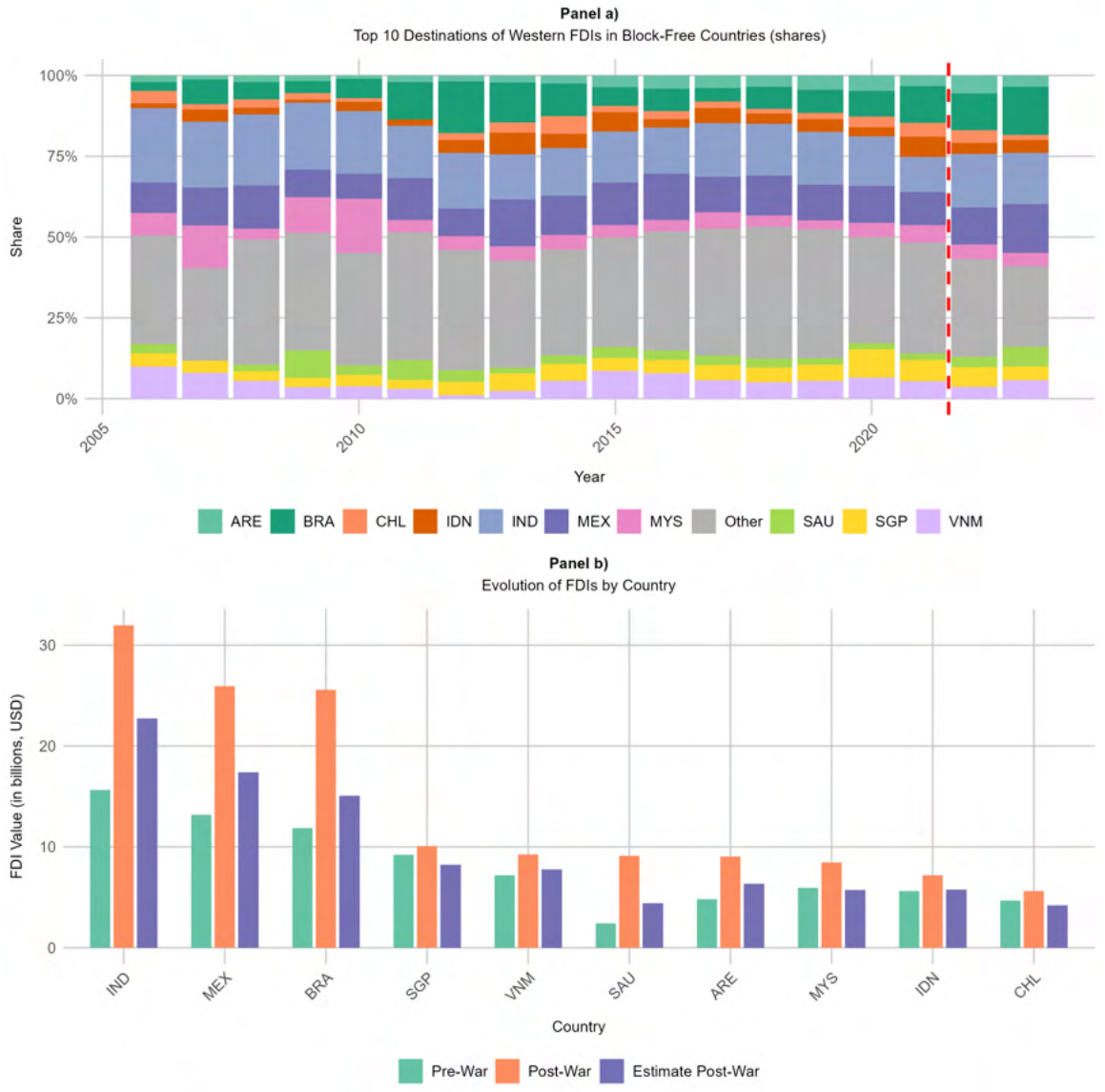

Figure 7: Panel a) shows the share of Greenfield FDI flows from the Western bloc into bloc-free countries between 2005 and 2023 in shares by destination country. The dashed red line marks the beginning of the Russian invasion of Ukraine. Panel b) shows the volume of FDI flows (in billion USD) comparing the Pre-War (2020-2021) sum, the Post-War (2022-2023) sum and a Post-War estimate by destination country. Post-War estimated are projections derived from the DiD model.

4 Bayesian VAR analysis

The redirection of cross-border investment along geopolitical lines following the Russian invasion of Ukraine has led to an unexpected increase in FDIs in bloc-free countries, with India, Mexico, and Brazil, Malaysia, and Singapore experiencing the most significant surges. However, it remains unclear to which degree the affected economies have benefited from this inflow of foreign investment. Empirical evidence suggests that a surge in FDIs is often associated with increased economic output, especially if financial markets are well-developed (Alfaro et al., 2004; Chowdhury and Mavrotas, 2006; Hansen and Rand, 2006; Cipollina et al., 2012).

To analyze the output effects of the unexpected inflow of FDIs in bloc-free countries since the onset of the war, a counterfactual path of economic output is constructed. Since macroeconomic data on a quarterly frequency is not available for all bloc-free countries, the analysis is focused on the following seven economies: Brazil, Chile, India, Indonesia, Mexico, Malaysia, and Singapore.

4.1 Empirical specification

To estimate a counterfactual path of economic output, Bayesian Vector Autoregression (BVAR) analysis is employed. The empirical approach follows a three-step procedure.

First, a reduced-form BVAR is trained on the per-war period from 2005Q1 until 2021Q4 for the bloc-free countries. For each country, the following model is estimated:

$$y_t = A_1 y_{t-1} + A_2 y_{t-2} + \cdots + A_p y_{t-p} + \varepsilon_t \tag{3}$$

where y_t is an 5×1 vector of 5 variables: the natural logarithm of foreign direct investment inflows sourced from ORBIS Crossborder Investment, natural logarithm of real GDP, the rate of inflation, the natural logarithm of the exchange rate expressed in USD deflated by country i's consumer price index and the nominal interest rate of country i at time t. Data on macroeconomic fundamentals is obtained from the GVAR Database (Mohaddes and Raissi, 2024). $A_1, A_2, \cdots, A_p$ are p matrices of coefficients with dimension $n \times n$ and ε_t is a vector of disturbances.

The models are estimated via the BEAR toolbox (Dieppe et al., 2016), a widely used econometric software for Bayesian analysis. To achieve parsimony the Minnesota prior is imposed. The key assumption is that most observed macroeconomic variables follow a unit root in its first own lags. Following this prior assumption, all further lags are shrinked to zero (Littermann, 1986). 2 lags are included in the analysis.

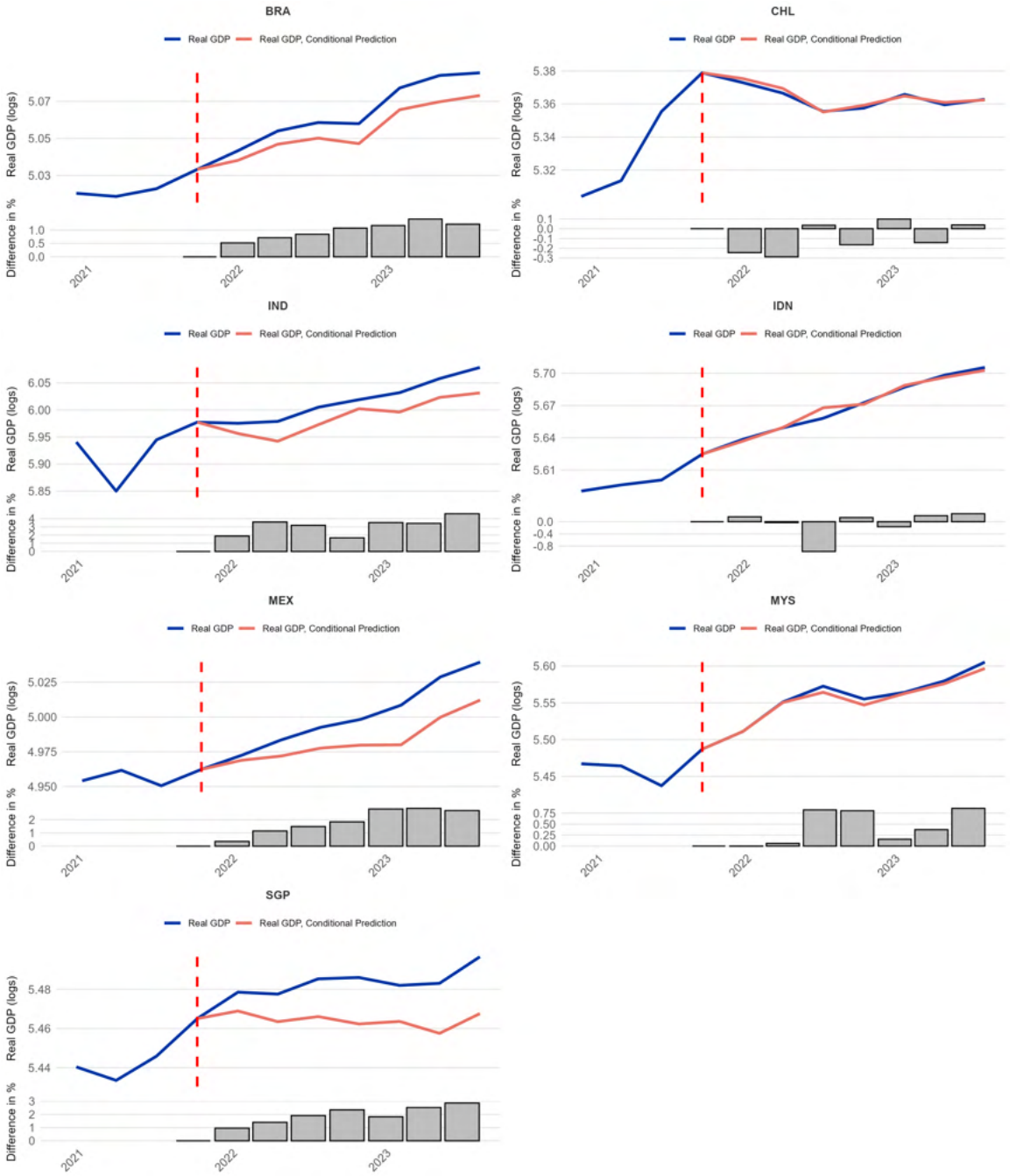

Figure 8: The figure shows the actual trajectory of real GDP in logs (blue line), counterfactual real GDP in logs (orange line), and the percentage difference between actual and counterfactual GDP (grey bars) for bloc-free countries: Brazil, Chile, India, Indonesia, Mexico, Malaysia, and Singapore. To estimate counterfactual real GDP, the difference between two conditional predictions for the period 2022Q1 until 2023Q3 is estimated based on model 3: The first GDP prediction is estimated conditional on FDI flows predicted by the DiD model from equation 1. The second real GDP prediction is estimated conditional of FDI flows. The difference between both predictions isolates the net effect of the unexpected inflow of FDIs on real GDP. To estimate counterfactual real GDP, the trajectory of real GDP is adjusted by this difference.

Second, the model trained on the pre-war period is used to predict real GDP for the period between 2022Q1 and 2023Q3 conditional on FDI flows predicted by the DiD model (Equation 2). The projected real GDP is a counterfactual of how output would have developed if cross-border investments had not fragmented along the new geopolitical lines since the onset of the war. This prediction suffers from a forecasting biases, i.e. unmodeled exogenous shocks that have affected actual real GDP in the post-war period. Therefore, comparing real GDP and the counterfactual real GDP prediction may be misleading since their difference may have also been affected by other unmodeled shocks.

Third, to isolate the effect of the exogenous inflow of FDIs caused by the Russian invasion of Ukraine on real GDP in bloc-free countries a second real GDP prediction is estimated. Based on the BVAR trained on the pre-war period, real GDP is predicted for the post-war period conditional on actual FDI flows. The difference between this prediction and the prediction based on counterfactual FDI flows eliminates the model's forecasting bias and yields the net effect of the unexpected FDI inflows on real GDP. Adjusting the trajectory of real GDP for this difference gives the counterfactual path of economic output.

4.2 Bayesian VAR results

The results of the analysis for each of the seven countries under investigation are presented in Figure 8. The counterfactual shows the trajectory of real GDP adjusted by the difference between the first prediction estimated conditional on counterfactual FDI flows and the second prediction estimated conditional on actual FDI flows. Comparing the counterfactual and actual real GDP trajectory shows that Brazil, India, and Mexico, which attracted the largest inflows of unexpected FDI since the onset of the war, also experienced the most substantial increases in real GDP. By 2023Q3, actual real GDP in these countries was approximately 1%, 4%, and 2% higher than the counterfactual real GDP, respectively. In Malaysia and Singapore, the FDI shock also had a notable impact on the trajectory of real GDP, with increases of 0.75% and 2.8%, respectively. In contrast, Chile and Indonesia exhibit minimal deviations between counterfactual and actual real GDP.

The analysis reveals varying impacts of redirected FDI across bloc-free countries. Countries that attracted the largest additional FDI inflows since the onset of the war, such as Brazil, India, and Mexico, experienced notable increases in real GDP compared to their counterfactual trajectories. Malaysia and Singapore also showed significant impacts, although to a lesser extent. In contrast, Chile and Indonesia experienced minimal changes, reflecting limited shifts in FDI inflows during

the post-war period. Overall, these findings highlight the broader economic implications of the geopolitical realignment triggered by the invasion, identifying winners and losers in the evolving FDI landscape, with bloc-free countries Brazil, India, Mexico, Malaysia and Singapore emerging as the primary beneficiaries.

5 Conclusion

This study analyzes how a sudden relocation of international investment affects the economies of the corresponding beneficiaries. Using the fragmentation of cross-border investment along geopolitical lines since the onset of the war in Ukraine as a case study, it highlights significant effects on economic output.

First, the paper shows the fragmentation of the geopolitical landscape in response to the war affected global flows of cross-border investments. Since the onset of the war, FDI flows into Russia have plummeted to almost zero. Similarly, the empirical analysis provides evidence that FDI flows into Russia-leaning countries have decreased by a large margin. While FDI flows within the Western bloc have remained relatively stable, cross-border investments into bloc-free countries have increased by approximately 30%. The findings suggests that companies have already adapted to the new geopolitical realities by refraining from investing into countries exposed to a higher geopolitical risk. A sectoral analysis showing that the manufacturing sectors, previously key recipients of Western FDI in Russia, in bloc-free countries has attracted most of the unexpected inflow of FDI flows since the war. I conclude that FDI flows that have not been invested in Russia or Russia-friendly states have been absorbed by these countries.

Second, employing a two-step Bayesian VAR analysis reveals that the major beneficiaries of the redirection of cross-border investments experienced significant increases in economic output. In this countries, namely Brazil, India, Mexico, Malaysia, and Singapore, the shift in FDI flows since the onset of the war has resulted in a significant increase in foreign investment, reaching up to $5 billion USD annually. This windfall FDI inflows had substantial economic impacts, with real GDP elevated by as much as 2% in 2023Q4 compared to a counterfactual scenario where no redirection of FDI flows occurred.

Overall, these findings emphasize the far-reaching economic implications of the geopolitical realignment triggered by the invasion, delineating clear winners and losers in the reconfigured FDI landscape. Bloc-free countries - namely Brazil, India, Mexico, Malaysia, and Singapore - have emerged as prominent beneficiaries, making them the early winners of the Russia-Ukrainian war.

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A Appendix

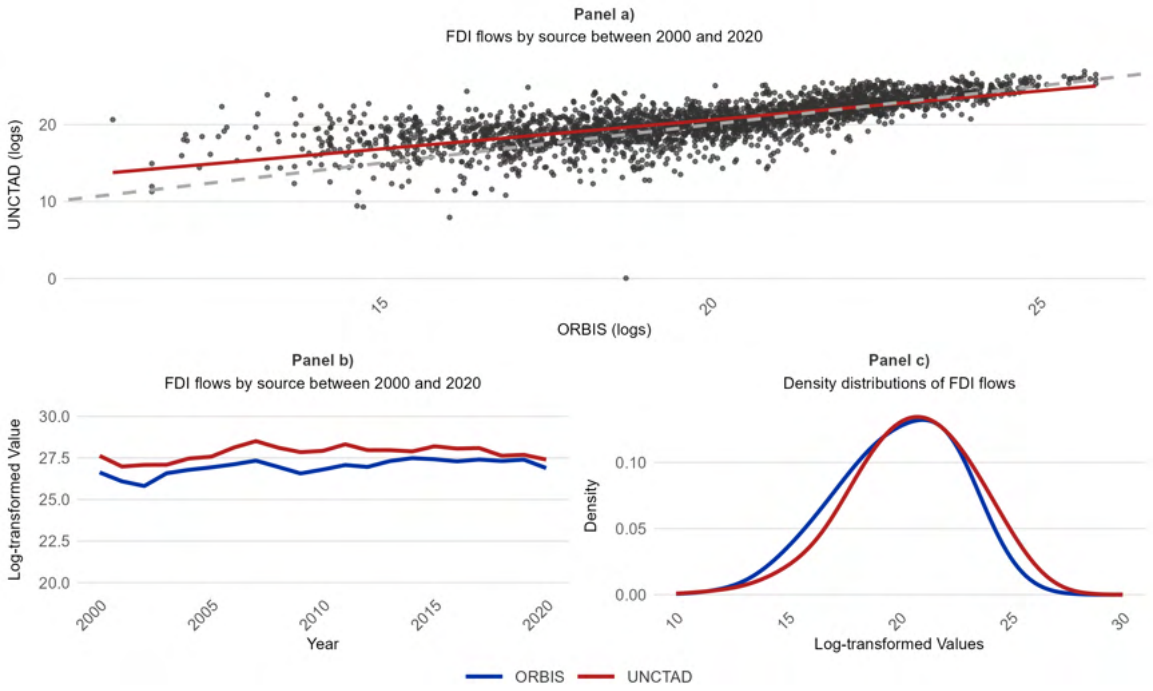

Figure A.1: This figure compares FDI data from Orbis Crossborder Investment with FDI data sourced from UNCTAD. Panel (a) presents a scatterplot comparing UNCTAD's Western FDI flows (log-transformed) with Orbis's Western FDI flows (log-transformed). Panel (b) depicts the trajectory of Western FDI flows from both sources over the 2000–2020 period. Panel (c) highlights the distributional properties of the two data sources.