

INTERNATIONAL MONETARY FUND

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WP/24/76

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2024
APR



WORKING PAPER

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April 2024

Abstract

Global linkages are changing amidst elevated geopolitical tensions and a surge in policies directed at increasing supply chain resilience and national security. Using granular bilateral data, this paper provides new evidence of trade and investment fragmentation along geopolitical lines since Russia's invasion of Ukraine, and compares it to the historical experience of the early years of the Cold War. Gravity model estimates point to significant declines in trade and FDI flows between countries in geopolitically distant blocs since the onset of the war in Ukraine, relative to flows between countries in the same bloc (roughly 12% and 20%, respectively). While the extent of fragmentation is still relatively small and we do not know how longlasting it will be, the decoupling between the rival geopolitical blocs during the Cold War suggests it could worsen considerably should geopolitical tensions persist and trade restrictive policies intensify. Different from the early years of the Cold War, a set of nonaligned 'connector' countries are rapidly gaining importance and serving as a bridge between blocs. The emergence of connectors has likely brought resilience to global trade and activity, but does not necessarily increase diversification, strengthen supply chains, or lessen strategic dependence.

JEL Classification: F14, F60, I18

Keywords: Trade; Foreign direct investment; Geoeconomics; Fragmentation

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1 Introduction

Over the past decade, the future of global economic integration has been increasingly challenged. Disillusionment with the uneven benefits of trade, fragility of highly specialized global supply chains exposed by the COVID-19 pandemic, and geopolitical frictions heightened by the war in Ukraine are all contributing to rethinking commitments to free trade. In 2015, the Chinese government announced the ‘Made in China 2025’ initiative, with the goal of upgrading its manufacturing industry, reducing its reliance on foreign technology, and raising the domestic content of core components and materials to 70 percent by 2025. In 2018, the U.S. raised tariffs on a wide range of imports from China. Policy measures by advanced and emerging market economies, which directly or indirectly restrict trade flows, have surged.¹ Yet, despite these changes in the policy environment and public sentiment, there are no signs of significant changes in the extent of globalization, crudely defined as the ratio of global trade to GDP. Since around the time of the global financial crisis, when the 2000s hyperglobalization came to an end, the ratio of goods trade to GDP has fluctuated between 41 and 48 percent (Figure 1, Panel A). Foreign direct investment (FDI) has become more subdued: global FDI as a share of GDP has declined from around 3.4 before the global financial crisis to 2.5 percent thereafter.²

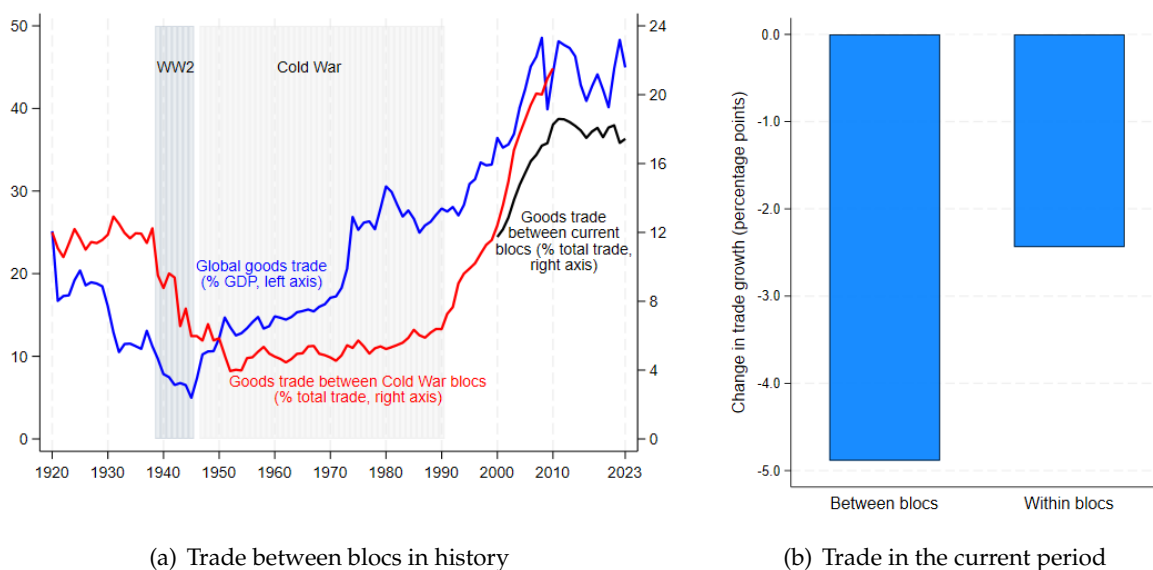
A number of studies have argued that underneath the relatively stable aggregate trends, a redirection of trade and investment flows across countries is taking place, potentially a symptom of fragmentation (Aiyar *et al.*, 2023a; Freund *et al.*, 2023; Alfaro and Chor, 2023; Blanga-Gubbay and Rubínová, 2023; World Trade Organization, 2023). The newly popular term, “geoeconomic fragmentation” refers to policy-induced changes in the sources and destinations of cross-border flows, often guided by strategic considerations, such as national and economic security, sovereignty, autonomy, which may or may not be associated with a decline in world trade relative to GDP. This term, along with “reshoring,” “nearshoring” and “friend-shoring” is increasingly mentioned in companies’ earnings calls (Figure A1, Panel B). And there is by now robust evidence that the trade tensions between the U.S. and China since 2018 have triggered a reallocation of the supply chains that have intertwined the world’s two largest economies over the past decades.³ Freund, Mattoo, Mulabdic and Ruta (2023) and Alfaro and Chor (2023) demonstrate that tariffs on Chinese products have effectively decreased U.S. imports from China, with low-wage countries that are linked to China’s supply chains and have export baskets similar to China’s gaining import share in U.S. markets (see also Dang and Zhao, 2023; Utar, Cebreros Zurita and Torres Ruiz, 2023). However,

¹ See Figure A1, Panel A, in the Annex, and evidence discussed by Juhász, Lane and Rodrik (2023), who argue that the rise of these measures predate the current surge in industrial policy spending.

² For a discussion on deglobalization trends, see, among others, Antràs (2020) and Goldberg and Reed (2023). The slowdown in global integration since the global financial crisis in part reflects autonomous changes (e.g., shifts in technology, preferences, structural transformation), and the waning of forces that helped spur the rapid integration of economies until the mid-2000s (such as the reduction in transport costs, the break-up of production processes across countries, technological advances, and the like).

³ See Fajgelbaum and Khandelwal (2022) and Caliendo and Parro (2023) for a survey of the literature on the economic impacts of the U.S.-China trade frictions and Bown (2021) for a detailed account of its timeline.

Figure 1: Globalization and Trade Fragmentation in the Last Century and Now



Notes: Panel A plots global goods trade as a share of global GDP, and goods trade between blocs of countries as a share of global trade. For the Cold War, a Western and Eastern blocs are defined following [Gokmen \(2017\)](#). For the current period, bloc definition is based on a hypothetical Western bloc centered around the U.S. and Europe and a hypothetical Eastern bloc centered around China and Russia. Sections 2 and 3 provide further details. Panel B plots the average trade growth during 2022Q2-2023Q3 minus the average trade growth during 2017Q1-2022Q1 within and between blocs. Bilateral quarterly growth rates are computed as the difference in log bilateral trade, which are then aggregated using bilateral nominal trade as weights.

Sources: [Fouquin and Hugot \(2016\)](#); CEPII; [Gokmen \(2017\)](#); Jordà-Schularick-Taylor [Macrohistory Database](#); IMF World Economic Outlook; Trade Data Monitor; and authors' calculations.

there is little evidence on whether the looming “great reallocation” extends beyond U.S. efforts to de-risk, friendshore and onshore ([Lovely, 2023](#); [Yellen, 2022](#)) and whether there is broader fragmentation of the international trade and investment landscape along geopolitical lines.

Against the backdrop of over a century of data, fragmentation is difficult to detect yet. Using the change in the share of trade between politically distant groups of countries as a proxy for the extent of geoeconomic fragmentation, the small dip since 2021 pales in comparison to the decline in the share of trade between the Western-centered and USSR-centered blocs during the Cold War (Figure 1, Panel A).⁴ The Figure also reveals that geoeconomic fragmentation, extreme during the

⁴ While it is hard to precisely date the beginning of the Cold War, we follow the literature and use the announcement of the *Truman Doctrine* in Congress in March 1947—which established that the U.S. would provide political, military and economic assistance to all democratic nations under authoritarian threats—as its start. [Leffler \(1984\)](#), among others, provides a detailed discussion of geopolitical developments at the onset of the Cold War. As evident in the Figure and more rigorous analysis in section 3.2, the most precipitous decline in trade between blocs occurred during World War II. During the Cold War, trade between blocs continued to decline and stayed significantly below trade within blocs until the Cold War’s end in 1990. The Western and Eastern blocs of the Cold War are defined following [Gokmen \(2017\)](#). For the current period, we define blocs according to a hypothetical Western bloc centered around the U.S. and Europe and a hypothetical Eastern bloc centered around China and Russia. Sections 2 and 3 provide further details.

Cold War, does not necessarily go hand-in-hand with deglobalization. The ratio of goods trade to GDP increased significantly during the Cold War even as the two blocs decoupled. Zooming in on the last few quarters of data reveals a more nuanced story. While trade growth has slowed everywhere since the onset of the war in Ukraine in 2022, growth between more politically distant blocs slowed more (Figure 1, Panel B). Announced FDI projects within a bloc of countries have also become much more common, while investments across blocs have fallen sharply.

In this paper, we take these emerging *prima facie* signs of fragmentation as a starting point and uncover a set of novel stylized facts, which, taken together, provide support for the argument that trade and investment flows may be starting to fragment along geopolitical lines.⁵ We contrast our findings with the experience during the Cold War—arguably a notable historical example of global geopolitical fragmentation—to put the magnitude of fragmentation observed so far in context, speculate about its evolution should geopolitical tensions and trade policy restrictions continue intensifying, and highlight the key role that nonaligned economies could play today—differently from the Cold War period—in shaping fragmentation’s macroeconomic effects.

First, we find significant reshuffling at the country level of sources of imported goods and foreign direct investment. The extent of reallocation across importing partners and FDI sources has surged since the onset of the COVID-19 pandemic, reaching levels not seen over the past two decades. Advanced economies have been particularly active in that regard.

Second, we reveal the cracks that are starting to emerge in cross-border flows by estimating gravity models of trade and investment. After accounting for all country-level shocks and time-invariant factors that may shape the extent of trade and investment between country pairs, we document—using recent data—that trade flows and the number of announced FDI projects between a U.S.-centered and a China-centered bloc is declining by 12 and 20 percent more than trade and investment between countries within the same bloc since the onset of the war in Ukraine. The magnitude of the decline is both economically and statistically significant, though still a fraction of the trade shortfall between rival blocs observed during the Cold War. Importantly, the shortfall is not limited to flows between the U.S. and China. The comparison with the Cold War period also highlights a different role for nonaligned countries. While during the Cold War, trade with nonaligned economies declined by around 40 percent (although not to the same extent as trade between opposing blocs), currently we do not observe any relative reduction in trade and investment flows involving nonaligned countries.

Third, zooming in on trade between U.S. and China, we confirm the adverse effects of the U.S. tariffs on Chinese imports, and the precipitous decline of China as a source for U.S. imports. Recent data also confirm the emergence of ‘connector’ countries, as exports from a set of nonaligned economies are substituting for declining Chinese imports by the U.S., and those economies tend

⁵ While not the focus of our analysis, financial flows, such as bank and portfolio flows, could also fragment along geopolitical fault lines; see, for instance, [Kempf et al. \(2021\)](#) and [International Monetary Fund \(2023\)](#). We also focus on fragmentation as reorientation of trade flows across trading partners; onshoring production without discriminating across trading partners is not captured in the analysis.

to have increased their imports from China (Freund, Mattoo, Mulabdic and Ruta, 2023; Alfaro and Chor, 2023; Dahlman and Lovely, 2023; Utar, Cebreros Zurita and Torres Ruiz, 2023). Moreover, we combine recent data on trade flows and announced FDI projects to establish a strong positive correlation between countries' gain in U.S. imports market share and their gain in Chinese outward FDI. While establishing the direction of causality is beyond the scope of this paper, this finding adds to the growing anecdotal evidence of Chinese firms investing in countries, through which they can access U.S. markets (Bloomberg, 2023; Lopez and Vázquez, 2023). This finding is in sharp contrast to the experience during the Cold War. Our analysis suggests that the nonaligned economies at the time did not step in to bridge the gap between the Eastern and Western blocs, perhaps reflecting their much lower degree of integration in the global marketplace, higher trade barriers and transport costs, and the different nature of traded goods.

In sum, we find that fragmentation in trade and investment flows is becoming reality. It is hard to speculate whether it will deepen and how longlasting it will be given its recent onset: its evolution will depend on whether geopolitical tensions persist and trade restricting policies continue to mount. But our findings also reveal a conundrum: the more cross-border flows are rerouted via 'connector' countries, the less effective the policies driving fragmentation may be in achieving their stated objectives. Policymakers have motivated measures that restrict trade either directly or indirectly on the grounds of strengthening the resilience of supply chains, de-risking and increasing economic and national security (Bernstein, 2023; Sullivan, 2023; Yellen, 2022).⁶ However, the reshuffling that is taking place seems to be lengthening supply chains (Qiu, Shin and Zhang, 2023), as connector countries are stepping in to bridge the gap between rival blocs. This could potentially bring new fragilities, in addition to raising inefficiencies. Moreover, even if direct links to less politically aligned partners are severed, exposure may not change substantively if imports and FDI from China underpin the exports by more politically aligned trading partners.

Related Literature. This study relates to several fast growing and interrelated strands of literature. First, we contribute to recent studies on geoeconomics, which examine the impact of geopolitics on global real and financial activity. Clayton, Maggiori and Schreger (2023) introduce a theoretical framework for analyzing the interplay between geopolitics and economic competition, while Aiyar, Presbitero and Ruta (2023b) provide an overview of recent empirical and modeling work on the impact of geoeconomic fragmentation on global trade, investment and financial flows. In a closely related analysis, Blanga-Gubbay and Rubínová (2023) find that trade flows have become more sensitive to geopolitical distance since the start of the war in Ukraine. To the best of our knowledge, our study is one of the first to present evidence of emerging geopolitical fault lines globally in *both* trade and investment flows, complementing the existing empirical, theoretical and modeling studies.

⁶ Some measures, including tariffs or export restrictions, directly target trade and investment. Other behind-the-border measures indirectly affect trade flows, such as fiscal and financial support to specific domestic sectors and local content requirements.

Second, we build on studies that examine the realignment of U.S. import sourcing from China towards other countries using product-level (Alfaro and Chor, 2023; Benguria and Saffie, 2023; Fajgelbaum, Pinelopi, Kennedy, Khandelwal and Taglioni, 2024; Freund, Mattoo, Mulabdic and Ruta, 2023; Goldberg and Reed, 2023; Rotunno, Roy, Sakakibara and Vezina, 2023) and firm-level data (Alfaro, Brussevich, Minoiu and Presbitero, 2024; Handley, Kamal and Monarch, 2024; Utar, Cebreros Zurita and Torres Ruiz, 2023). We expand this literature in two ways. First, rather than focusing on the impact of the 2018-2019 U.S.-China trade tensions, we seek broader evidence of fragmentation and supply chain shifts given the surge in trade restrictive measures and elevated geopolitical tensions globally, drawing insights from the Cold War era. Second, we examine recent trends in both trade and investment flows in a comparable manner, contrary to previous studies that have mostly focused on trade (e.g. Freund, Mattoo, Mulabdic and Ruta, 2023; Blanga-Gubbay and Rubínová, 2023). The finding that fragmentation is occurring in both goods and capital flows in an interrelated manner is novel and brings quantitative substance to mounting anecdotal evidence of the role of FDI in circumventing trade restrictions, and the broader literature on multinational production and horizontal versus vertical FDI (Helpman, 1984; Helpman, Melitz and Yeaple, 2004; Antràs and Yeaple, 2014; Ramondo and Rodriguez-Clare, 2013; Tintelnot, 2017). Relatedly, Xue (2023) presents complementary evidence on the connection between U.S. tariffs on Chinese imports, trade and FDI, and develops a multi-country general equilibrium model incorporating both trade and FDI diversion.

Third, our study also relates to the recent literature on the economic costs of geoeconomic fragmentation (see, among others, Attinasi, Boeckelmann and Meunier, 2023; Bolhuis, Chen and Kett, 2023; Cerdeiro, Eugster, Muir and Peiris, 2021; Javorcik, Kitzmueller, Scheiger and Yildirim, 2022; Aiyar, Presbitero and Ruta, 2023b; Goes and Bekkers, 2022; Hakobyan, Meleshchuk and Zymek, 2023). This literature simulates the economic impact of fragmentation assuming a sharp increase in trade/FDI/technology diffusion costs between blocs of countries. In contrast, our study provides estimates of the relative increase in trade/FDI costs between and within blocs, which could guide future modelling work towards more realistic fragmentation counterfactuals.

Finally, our study contributes to the literature evaluating the economic impact of the Cold War (see, for example, Schiller, 1955; Gokmen, 2017; Morrow, Siverson and Tabares, 1998), with a focus on the role of nonaligned economies. We are also the first to compare the incipient signs of fragmentation to the experience during the early years of the Cold War.

2 Data

The analysis relies on annual and monthly data on bilateral trade flows from the Trade Data Monitor (TDM), a private data provider. TDM sources trade data at the Harmonized Tariff Schedule (HS) level from government offices and agencies of over 115 countries, accounting for more than 95 percent of world GDP. A key advantage of TDM over the UN COMTRADE database is its

timeliness, which allow us to track developments in trade flows up until September 2023. We use the Historical Bilateral Trade and Gravity dataset (TRADHIST) prepared by [Fouquin and Hugot \(2016\)](#) to examine the bilateral trade flows during the Cold War period.

FDI data are from [fDi Markets](#), a service from the Financial Times which tracks announced new physical projects and expansions of existing investments that create new jobs and capital investment.⁷ The data are collected primarily from publicly available sources (e.g., media, industry organizations, investment promotion agency newswires) and report investment-level information for over 320,000 FDI instances between January 2003 and December 2023 between 186 countries. The volume of capital investment is often estimated rather than based on directly reported data. For that reason, our analysis is mostly based on count data.⁸

Bilateral geopolitical distance, which we use to assign countries to hypothetical blocs, is based on voting patterns at the United Nations General Assembly (UNGA). We use the *ideal point distance* (IPD), estimated with “constant” UNGA agenda, and provided by [Bailey, Strezhnev and Voeten \(2017\)](#).⁹

3 Findings

3.1 Reallocation

To gauge reallocation across trading and FDI partners, we compute a commonly used measure of structural change—the Lilien (1982) Index—using annual bilateral import data and inward FDI for each country since 2000.¹⁰ Underneath the broadly stable aggregate trends of trade and FDI,

⁷ fDi Markets does not track mergers and acquisitions and other international equity investments, investment projects that do not create new jobs, or companies, which establish a foreign subsidiary without a physical company presence.

⁸ [Toews and Vézina \(2022\)](#) and [Aiyar, Malacrino and Presbitero \(2024\)](#) discuss the reliability of the announcement data by aggregating the volumes at the destination country-year level and contrasting them with gross FDI inflows from balance of payment statistics, published in the IMF’s World Economic Outlook dataset. The two distributions have a large degree of overlap and are positively correlated. In addition, the count and volume of bilateral investment in fDi Markets are also tightly correlated, supporting the choice of analyzing count data.

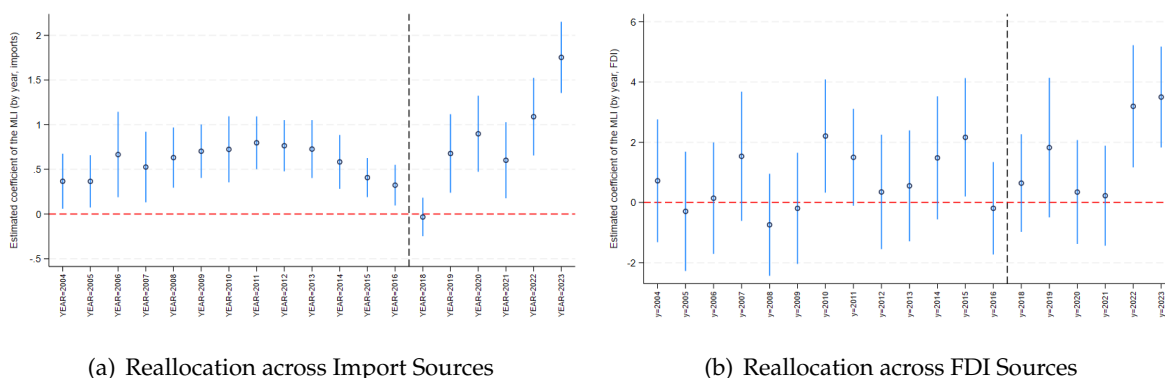
⁹ The measure is built by first estimating an ordered logit over three voting choices (yea, abstain, nay), where the choice depends on the parameters of the model combined with a latent vote-specific preference of each country in a given year. The latent process is estimated by imposing a Bayesian prior on the preferences and employing a Metropolis-Hastings/Gibbs sampler algorithm to infer the parameters of the logit model and then the posterior distribution of the latent preference parameters. The distance between two countries in each year is then computed as the absolute value of the difference between the inferred vote specific preference parameter. More details on the measurement and estimation are provided in [Bailey, Strezhnev and Voeten \(2017\)](#). The IPD data up to 2022 are available at: <https://dataverse.harvard.edu/dataverse/Voeten>.

¹⁰ The Modified Lilien Index (MLI), often used to measure the degree of sectoral shifts in the composition of output, is based on the standard deviation of the sectoral growth rates from time period $t - 1$ to t :

$$MLI_{rt} = \sqrt{\sum S_{irt} \times (\ln(x_{irt}/x_{irt-1}) - \ln(X_{rt}/X_{rt-1}))^2}$$

where $\ln(x_{irt}/x_{irt-1})$ is the growth of imports from trading partner i , in country r , in time period t , $\ln(X_{rt}/X_{rt-1})$ is the growth in overall imports of country r , and $S_{irt} = x_{irt}/X_{rt}$ is the average share of imports from partner i in total imports of country r . The index is equal to 0 if there is no structural change between $t - 1$ and t . The higher the value of the

Figure 2: Reallocation across Import and FDI Sources: Difference Relative to 2017



Notes: The figure plots the estimated coefficients on year indicators along with the 90th percentile confidence intervals from regressing the modified lilien index (MLI) on country and year fixed effects with 2017 the excluded year. Sources: Trade Data Monitor; fDi Markets; and authors’ calculations.

there was a sharp uptick in the extent of reallocation across import and FDI sources. In the case of trade flows, reallocation across import partners accelerated with the intensification of the U.S.-China trade tensions in 2018. For FDI flows, the uptick is most pronounced in the past couple of years (Figure 2). The increase in the Lilien index computed for trade flows is especially pronounced among advanced economies (Table A1). For emerging market and developing economies (EMDEs) where the extent of reallocation is structurally higher, the increase is not as noticeable. Compared to the average observed over 2003-2019, import reallocation has increased by roughly 15 percent post pandemic in the full sample of countries, and by almost 40 percent for the sample of advanced economies. Foreign direct investment exhibits striking similarity, with reallocation across sources of inward FDI increasing significantly more for advanced economies (Table A1, panel B).

3.2 Fragmentation

Uncovering the patterns underneath the increase in reallocation of import and FDI sources will occupy researchers for years to come as new data on global supply chains, world input-output matrices, and bilateral capital flows become available. We take a first stab by examining whether the recent re-configuration of trade and investment flows could be related to geopolitical considerations. We remain agnostic about the causal effects of recently announced policy intentions as well as actual policy measures aimed at “de-risking”, creating/maintaining strategic advantage, and ensuring national or economic security through “onshoring”, “nearshoring” or “friend-shoring.” The purpose of this exercise is to establish whether there are signs in the data of fragmentation of index, the faster is the structural change; in other words, the bigger the reallocation of imports across trading partners.

trade and investment between groups of countries that are potentially more geopolitically distant.

We begin by defining groups of geopolitically aligned countries. We follow recent studies which use the similarity of countries’ voting patterns at the UN General Assembly to capture countries’ bilateral political attitudes towards one another (Aiyar, Malacrino and Presbitero, 2024). Countries are divided into three groups: a U.S. leaning bloc, which includes countries in the top quartile in their political proximity to the U.S., a China leaning bloc, which includes countries in the top quartile in their political proximity to China, and a set of nonaligned countries, comprising the remaining economies. We consider an alternative, narrower definition of blocs, allowing a larger group of nonaligned economies.¹¹

To gauge the extent of fragmentation of trade and investment flows, we estimate the following gravity model, which has become the conventional framework for estimating the determinants of trade and investment flows, and can be derived from a number of theoretical models.¹²

$$Y_{sdt} = \beta_1 \textit{Between Bloc}_{sd} \times \textit{Post}_t + \beta_2 \textit{Nonaligned}_{sd} \times \textit{Post}_t + \delta_{sd} + \tau_{st} + \phi_{dt} + \epsilon_{sdt}, \quad (1)$$

where the dependent variable is either the value of trade between country s and country d (in USD) or the number of announced FDI projects from source country s to destination country d in period t . To measure if flows between or within blocs have changed over time, we include two dummies—a dummy for country pairs in which the two countries belong to different blocs, $\textit{Between Bloc}_{sd}$, and a dummy for country pairs in which at least one country is nonaligned, $\textit{Nonaligned}_{sd}$, leaving country pairs in which the two countries are assigned to the same geopolitical bloc as the omitted category. We interact both of these dummies with an indicator equal to 1 after Russia’s invasion of Ukraine (from 2022:q1 onward), \textit{Post}_t . The coefficients on these interacted dummies, e.g. β_1 , capture whether trade/FDI between countries in the two politically distant blocs in the post-war period differs from trade/FDI between countries in the same geopolitical bloc (the omitted category). The fully-saturated specification, with country-pair, δ_{sd} , and source \times year, τ_{st} , and destination \times year, ϕ_{dt} , fixed effects, accounts for all time-invariant country-pair determinants of trade and investment flows between countries (such as geographical and political distance, contiguity, common language, common colonial past, and the like), and the effect of all source- and destination-specific time-varying factors and shocks, such as GDP growth, change in country risk, implemented and announced policies that may affect all trading partners, and countries’ multilateral resistance terms.

We estimate the gravity model using OLS and Poisson pseudo-maximum likelihood (PPML), as proposed by Silva and Tenreyro (2006) and implemented by Correia, Guimarães and Zylkin (2020), using quarterly data over 2017:q1-2023:q3 for trade, and 2010:q1-2023:q4 for FDI.¹³ Stan-

¹¹ In this case, we define a hypothetical Western bloc including the U.S., Europe, Canada, Australia and New Zealand, and a hypothetical Eastern bloc comprising Belarus, China, Eritrea, Mali, Nicaragua, Russia, and Syria, with the other countries considered nonaligned.

¹² Blanga-Gubbay and Rubínová (2023) estimate a similar specification using monthly data on trade flows from January 2016 to May 2023.

¹³ To account for country pairs with zero trade flows, in the OLS regressions Y_{sdt} is measured by the inverse hyper-

standard errors are clustered at the country-pair level.

Table 1 reports the coefficients of interest, β_1 and β_2 , estimated using alternative sets of fixed effects, estimation techniques, and bloc definitions. Across all specifications, there is strong evidence that trade and FDI between blocs has declined relative to trade and FDI within blocs after Russia’s invasion of Ukraine (Panels A and C). If we focus on the PPML estimates using the wider bloc definition (column 4), we can see that, after the Russian invasion of Ukraine, trade and FDI between blocs declined by roughly 12 and 20 percent more than flows within blocs, respectively.¹⁴ These patterns are not driven uniquely by the U.S. or China: the results are robust to excluding these countries from the sample (Table A2). The findings are consistent with recent evidence showing geopolitical alignment to be an important driver of cross-border FDI (Aiyar, Malacrino and Presbitero, 2024) and trade (Hakobyan, Meleshchuk and Zymek, 2023; Jakubik and Ruta, 2023) flows.

To examine the exact timing of trade fragmentation, we estimate equation (1) with a full set of time dummies, interacted with the *Between Bloc*_{sd} and *Nonaligned*_{sd} country-pair indicators, and plot the PPML coefficients along with the 90th percentile confidence interval in Figure A2. The divergence in trade between blocs compared to trade within blocs clearly began after Russia’s invasion in Ukraine (Panel A). In particular, the war acted as a ‘developing agent’ for geoeconomic fragmentation: trade between blocs started falling partly because of the collapse of Russia’s trade with the euro area and (to a lesser extent) with the U.S., while trade within bloc increased as the share of Russia’s trade with China more than doubled since the invasion (Figure A3).

To gauge the magnitude of fragmentation along geopolitical lines, we compare the current trade fragmentation with the Cold War period—arguably the most prominent example of fragmentation in recent history. Using bilateral annual trade data from 1920-1990 and a bloc definition centered on a West-East divide as in Gokmen (2017) and Huntington (1998), we estimate equation (1) focusing on the interaction between the *Between Bloc*_{sd} dummy and an indicator that takes on the value of 1 for the Cold War period (1947–1990). Panel B of Table 1 reveals that trade between the rival Western and Eastern blocs declined by two thirds during the Cold War, relative to trade within these blocs.¹⁵

Figure 3 directly compares the fall in trade between blocs in the current period and during the Cold War. The findings are naturally sensitive to the choice of the onset date—in the figure, we use 2022:q1 and 1947 as the beginning of fragmentation during the current period and the Cold

bolic sine (IHS) of the trade value. The IHS is defined as $Y_{sdt} = \ln(v_{sdt} + \sqrt{1 + v_{sdt}^2})$, where v_{sdt} is the USD value of trade between country s and d at time t . This function is well defined at $v_{sdt} = 0$, but quickly converges to $\ln(2v_{sdt})$ as v_{sdt} grows. The coefficients can thus be interpreted as semi-elasticities when there is trade (Bellemare and Wichman, 2020). A caveat of our gravity analysis is that it does not consider domestic trade flows, which have been shown to be important to estimate the intensive and extensive margins of trade (Yotov, 2022), as these data are not available for our sample periods.

¹⁴ Given the functional form, the decline in trade between blocs relative to trade within blocs after Russia’s invasion of Ukraine can be computed as $(e^\beta - 1) \times 100$. Using the PPML results in column 4: $(e^{-0.1244} - 1) \times 100 = -11.7\%$ for trade and $(e^{-0.2212} - 1) \times 100 = -19.8\%$ for FDI.

¹⁵ Using the PPML results in column 4: $(e^{-1.11} - 1) \times 100 = -67\%$.

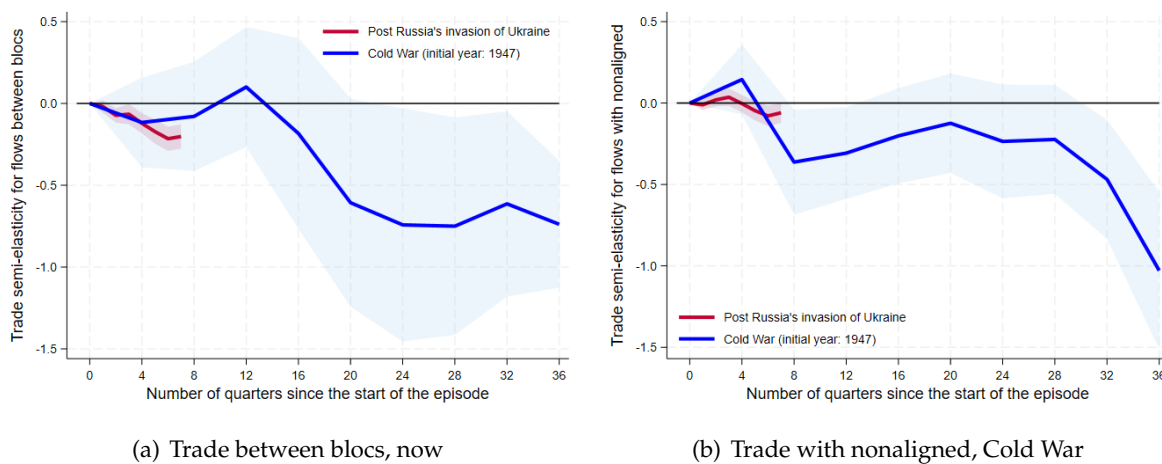
Table 1: Trade and Investment Flows: Between Blocs Relative to Within Bloc

Notes: The table reports the results of a gravity model using ordinary least squares (OLS, columns 1-2 and 5-6) and Poisson pseudo-maximum likelihood (PPML, columns 3-4 and 7-8), where the dependent variable is the bilateral trade in US dollars (panels A and B) or the number of announced FDI projects (panel C). Data are annual in panel B and quarterly in panels A and C. The sample spans the period 2017:q1-2023:q3 (panel A), 1920-1990 (excluding World War II, 1939-1945, panel B) and 2010:q1-2023:q4 (panel C). The Post War variable identifies the period following Russia's invasion of Ukraine and is equal to 1 from 2022:q1 onwards. The Cold War dummy is equal to 1 for the years 1947-1991. The Between Bloc variable equals 1 if the source and destination country do not belong to the same geopolitical bloc, and 0 otherwise. The Nonaligned variable equals 1 if at least one country in the pair is nonaligned. In the current period, blocs are centered around the U.S. and China, with a group of countries remaining nonaligned. The wider bloc definition uses the Ideal Point Distance (a measure based on UN General Assembly voting patterns computed by [Bailey et al. \(2017\)](#)) to assign countries into blocs. The narrower bloc definition is based on a hypothetical Western bloc including the U.S., Europe, Canada, Australia and New Zealand, and a hypothetical Eastern bloc comprising Belarus, China, Eritrea, Mali, Nicaragua, Russia, and Syria, with the other countries considered nonaligned. For the Cold War period, we use the bloc definition based on [Gokmen \(2017\)](#). The Western bloc includes Andorra, Australia, Belgium, Canada, Denmark, France, Germany, Greece, Iceland, Israel, Italy, Japan, Luxembourg, Malta, Monaco, Netherlands, New Zealand, Norway, Philippines, Portugal, San Marino, South Korea, Spain, Taiwan, Thailand, Türkiye, United Kingdom, United States. The Eastern bloc includes Albania, Armenia, Azerbaijan, Belarus, Bulgaria, China, Cuba, Czech Rep., Estonia, Georgia, Hungary, Kazakhstan, Kyrgyzstan, Lao People's Dem. Rep., Latvia, Lithuania, Moldova, Mongolia, North Korea, Poland, Romania, Russia (USSR), Slovakia, Turkmenistan, Ukraine, Uzbekistan, Vietnam. The remaining countries are considered nonaligned. Standard errors in parenthesis are clustered at the source-destination pair level. ***, **, and * denote significance at the 1%, 5%, and 10% levels, respectively.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Wider Bloc Definition				Narrower Bloc Definition			
	OLS		PPML		OLS		PPML	
Panel A. Trade around the Russian invasion of Ukraine								
Between Bloc * Post War	-0.0708*** (0.012)	-0.0525*** (0.013)	-0.0845** (0.038)	-0.1244** (0.054)	-0.3732*** (0.044)	-0.2672*** (0.048)	-0.1281*** (0.049)	-0.1299 (0.082)
Nonaligned * Post War	-0.0059 (0.008)	-0.0171 (0.016)	0.0582** (0.029)	0.0046 (0.049)	-0.0291*** (0.006)	-0.0319** (0.014)	0.0392 (0.031)	0.0578 (0.073)
Observations	240,503	240,449	240,503	240,449	263,606	263,550	263,606	263,550
Panel B. Trade during the Cold War								
Between Bloc * Cold War	-0.5392*** (0.066)	-0.1583* (0.089)	-0.6092*** (0.163)	-1.1076*** (0.110)				
Nonaligned * Cold War	-0.2423*** (0.040)	0.0517 (0.068)	-0.2612** (0.110)	-0.4641** (0.235)				
Observations	823,671	823,267	766,007	687,736				
Panel C. FDI around the Russian invasion of Ukraine								
Between Bloc * Post War	-0.9461*** (0.191)	-0.6027** (0.248)	-0.7285*** (0.097)	-0.2212* (0.125)	-0.3206*** (0.079)	-0.3046*** (0.100)	-0.2846*** (0.059)	-0.0935 (0.062)
Nonaligned * Post War	-0.0041 (0.063)	0.0209 (0.157)	0.0167 (0.038)	0.0764 (0.065)	0.0091 (0.069)	-0.0931 (0.190)	0.0174 (0.045)	-0.0423 (0.077)
Observations	137,760	136,360	137,760	128,200	128,128	126,784	128,128	118,807
Country-pair FE	Y	Y	Y	Y	Y	Y	Y	Y
Time FE	Y	-	Y	-	Y	-	Y	-
Source x Time FE	N	Y	N	Y	N	Y	N	Y
Destination x Time FE	N	Y	N	Y	N	Y	N	Y

War, respectively. The chart suggests that the fragmentation observed thus far is not significantly different from the experience in the initial years of the Cold War. However, compared to the aver-

Figure 3: Trade Fragmentation: The Cold War and Now



Notes: The charts plot the change in global trade between blocs (Panel A) and with nonaligned countries (Panel B) during the Cold War (blue line, with $t_0 = 1947$) and since the Russian invasion of Ukraine (red line, with $t_0 = 2021 : Q4$). For each episode, the chart plot the semi-elasticity of trade for flows (between blocs in panel A and with nonaligned countries in panel B), and the associated 90 percent confidence bands, estimated with PPML and a fully saturated gravity model as in equation 1 in the main text. The missing category is trade within blocs. The Cold War results are obtained using yearly data from 1920 to 1990—excluding the World War II years (1939–1945), and with 1947 as excluded year—and the bloc definition based on Gokmen (2017). The results for the most recent period are based on quarterly trade data from 2017:Q1 to 2023:Q3 (with 2021:Q4 as excluded quarter), with the wider bloc definition based on the Ideal Point Distance (a measure based on voting pattern in the United Nation General Assembly computed by Bailey *et al.* (2017)).

Sources: Trade Data Monitor; Historical Bilateral Trade and Gravity dataset (TRADHIST) prepared by Fouquin and Hugot (2016); and IMF staff calculations.

age “between-bloc trade shortfall” during the Cold War (Table 1, Panels A and B), fragmentation so far is an order of magnitude smaller.

This should not foster complacency as trade fragmentation could worsen over time if geopolitical tensions persists and restrictive trade policies continue to mount. During the Cold War, trade between blocs did not collapse overnight. It took at least five years for trade between blocs to significantly decline compared to flows within blocs, and over a decade to reach a nadir relative to within-bloc trade (Figures 3 and A2). Moreover, the size of the “treatment” today vs the Cold War is very different. While the ideological and economic rivalry between the U.S. and China is reminiscent of the one between the U.S. and the Soviet Union in the second half of the 20th century and policymakers are emphatic about the need to “de-risk” and “friendshore,” (Bernstein, 2023; Sullivan, 2023; Yellen, 2022), we are (and will hopefully remain) very far from the “Iron Curtain” that descended across Europe in 1946 (Churchill, 1946). U.S. trade policy towards communist countries intensified over time and consisted of a combination of i) high tariffs, which were brought back to the pre-GATT 1930 level (excluding for some raw materials), ii) export controls, especially directed at military and strategic products, and iii) specific sanctions, including total embargo to

North Korea and China ([Cooper, 2010](#)). Viewed through that lens, the geopolitical cracks that are emerging in trade and investment data—while still shallow—are a source of concern.

On the other hand, the stage on which fragmentation is taking place is fundamentally different ([Gopinath, 2024](#)). The economic interdependence between countries is much higher today as effective trade costs have declined substantially, both due to reductions in policy trade barriers, such as gradually dismantled tariffs, as well as improvements in shipping, information and communication technology. As a result, trade, including in services, has become a much bigger part of economic activity and production is shared through much more complex global value chains now than seventy years ago. In the beginning of the Cold War (1947-1952), global goods trade was only 12 percent of GDP, while in the last 5 years (2019-2023), the global goods trade-to-GDP ratio averaged roughly 44 percent. Including services, trade exceeded 60 percent of global GDP in 2022. Moreover, while trade in primary goods accounted for more than 40 percent of total trade during 1947-1952, it was only 14 percent of cross-country goods flows during 2019-2023, reflecting the rise in trade in intermediates and final goods. In other words, despite the extreme levels of fragmentation of trade between blocs during the Cold War, trade within blocs flourished reflecting policies and technological advances that effectively reduced trade costs between countries in the same geopolitical bloc.

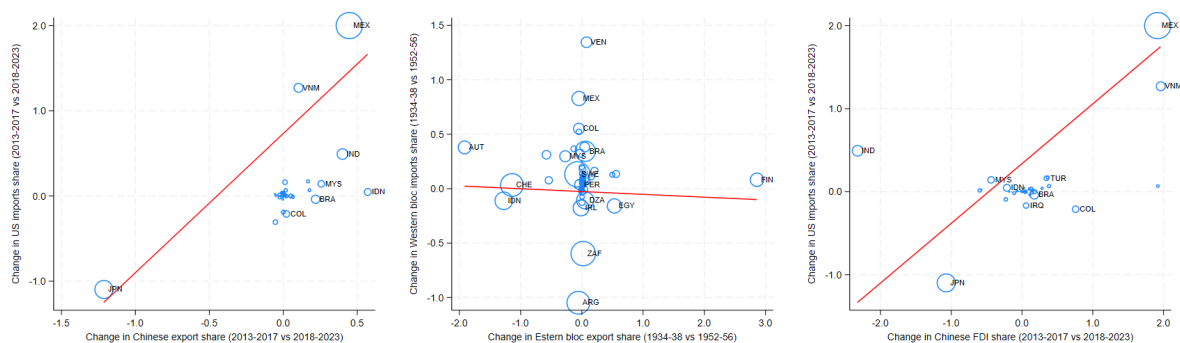
3.3 Connectors

The role of nonaligned countries may also be fundamentally different today compared to the Cold War. The gravity equations already suggest interesting differences. As can be seen in [Table 1](#), Panel B, during the Cold War, trade with nonaligned economies also remained significantly lower (-37 percent) than trade within the two blocs. In the current period, trade with nonaligned economies has kept up with within-bloc trade (panel A, as shown by the PPML estimates in columns 4 and 8). [Figure 3](#), panel B, visually represents these patterns.

The role of nonaligned economies in the U.S.-China trade tensions is a case in point. The surge in trade frictions between the U.S. and China and the restrictions imposed since 2018 have significantly hit trade between the two countries. China is no longer the largest trading partner to the U.S.: according to the U.S. Census Bureau data, its share of U.S. goods imports has fallen by roughly 8 percentage points in 6 years: from 22 percent in 2017 to 14 percent in 2023. As documented by numerous studies, the hike in U.S. tariffs of Chinese imports in 2018 effectively curbed Chinese imports (see [Fajgelbaum and Khandelwal \(2022\)](#) for a survey of the evidence). China is also no longer a prominent destination for outward U.S. FDI, losing rank to emerging markets such as India, Mexico, and UAE in the number of announced FDI projects.

But there is mounting evidence that direct links between the U.S. and China are simply being replaced by indirect links. As China lost market shares in U.S. imports, other countries, specifically Mexico, Canada, a number of Asian economies, most notably Vietnam, have gained prominence ([Dahlman and Lovely, 2023](#)). Countries that have gained the most in U.S. import shares—such

Figure 4: The Emergence of Connector Countries: Now vs the Cold War



(a) Change in U.S. import shares vs Chinese export shares (b) Change in Western bloc import shares vs Eastern bloc export shares (c) Change in U.S. import shares vs FDI from China

Notes: All panels include only nonaligned countries. Panel A plots the change in U.S. import shares between the period 2018-23 and the period 2013-17 against the change in Chinese export shares over the same period. A weighted regressions (with the U.S. imports in the pre-period as weights) with robust standard errors gives a slope equal to 1.634 (p-value = 0.000); n = 57. Panel B plots the change of the Western bloc import shares between the period 1952-56 and the period 1934-38 against the change of the Eastern bloc export shares over the same period. A weighted regressions (with the Western bloc imports in the pre-period as weights) with robust standard errors gives a slope equal to -0.026 (p-value = 0.628); n = 81. Panel C plots the change in U.S. import shares between the period 2018-23 and the period 2013-17 against the change in Chinese outward FDI over the same period. A weighted regressions (with the U.S. imports in the pre-period as weights) with robust standard errors gives a slope equal to 0.719 (p-value = 0.003); n = 44. In all cases, results are robust to: i) using the Chinese exports (panel A) or FDI (panel B) as weights; ii) using the weights computed in the 2018-23 period; and iii) excluding outliers. For panels A and C results are robust to controlling for the average real GDP growth in period 2018-2023.

Sources: Trade Data Monitor; fDi Markets; and IMF staff calculations.

as Mexico and Vietnam—have also gained more in China’s export shares (Alfaro and Chor, 2023; Dang and Zhao, 2023; Freund, Mattoo, Mulabdic and Ruta, 2023). The same countries are also larger recipients of Chinese FDI. While most of this evidence is anecdotal or based on specific case studies, Figure 4 shows that there is a robust and economically sizable association between the increase of Chinese presence in a country—measured either through exports (panel A) or announced greenfield investment (panel C)—and the increase in trade outward linkages of that country with the United States. The results shown in panel 1 suggest that a 1 percent increase in the US import share between 2013-17 and 2018-23 is associated with a 1.6 percent higher share of Chinese exports over the same period. When looking at FDI the same 1 percent share in import shares is associated with a 0.7 percent increase in the share of FDI from China.

In contrast, there is no evidence that nonaligned economies served as connectors between rival blocs during the Cold War. If they did, we would expect to see a similar correlation between the extent to which nonaligned economies gained share in Western markets’ imports and the extent to which they increased their imports from the Eastern bloc of countries. As shown in Figure 4, Panel B, the two series are completely orthogonal. The severance of direct links between the Western and Eastern bloc during the Cold War likely led to a severance of economic exposure, unlike what

may be happening today.

Why did nonaligned economies not step in as connectors in the 1950s but are doing so now? Rigorously disentangling the drivers of the response of nonaligned economies is beyond the scope of this paper, however, some relevant differences stand out. To begin with, the nonaligned countries at the time of the Cold War had a much smaller economic footprint. In 1950, the Western and Eastern blocs together accounted for roughly 85 percent of global GDP and more than half of the world's population. The nonaligned countries were mostly developing economies, which received foreign aid, technical assistance and military equipment motivated by geopolitical considerations (Cooper, 2010). Depending on whether countries choose to associate themselves with a particular bloc, the group of nonaligned economies today could have much greater economic heft, in terms of market share, and population. Today's nonaligned economies are also much more integrated into the world marketplace: for the median nonaligned economy, the trade-to-GDP ratio was 80 percent in 2019; compared to 40 percent of GDP in 1960 for the median nonaligned economy. The average most favored nation import tariff of the median nonaligned country was 12 percent in 2019 vs 40 percent in 1960, and the median nonaligned economy in 2015 had free trade agreements with partners equivalent to one fifth of global GDP, compared to 0 percent in 1960.

4 Conclusion

This paper establishes a number of relevant stylized facts about the extent to which geoeconomic fragmentation is reshaping global linkages and draws lessons from the historical experience of the Cold War. We find that, like during the Cold War, trade and investment between blocs is decreasing, compared to trade and investment within blocs. While the decoupling remains small compared to that earlier episode, it is also in its early stages and could worsen significantly if geopolitical tensions persists and restrictive trade policies continue to mount.

We also find that increasing geoeconomic fragmentation did not give rise to deglobalization, then or now. But the reason is fundamentally different. During the Cold War, active efforts to foster trade integration (within blocs) and technological improvements paved the way for a surge in trade. This process became turbocharged once the countries of the former Eastern bloc joined the global economy. Now, global trade and investment have been resilient mostly because flows have been re-routed via connector countries. These nonaligned countries could benefit from rising geoeconomic fragmentation. But this finding highlights a fundamental conundrum: the global economy is more resilient in part because it is increasingly substituting away from tariffed or sanctioned trade. But this substitution does not necessarily increase diversification, resilience, or lessen strategic dependence.

The path forward will hinge largely on whether policymakers decide to preserve the gains from an integrated global economy, perhaps turning a blind eye to the re-routed flows, or opt instead for more severe forms of decoupling.

References

- AIYAR, S., CHEN, J., EBEKE, C., GARCIA-SALTOS, R., GUDMUNDSSON, T., ILYINA, A., KANGUR, A., KUNARATSKUL, T., RODRIGUEZ, S., RUTA, M., SCHULZE, T., SODERBERG, G. and TREVINO, J. P. (2023a). Geoeconomic Fragmentation and the Future of Multilateralism. *IMF Staff Discussion Note*, **2023/001**.
- , MALACRINO, D. and PRESBITERO, A. F. (2024). Investing in Friends: The Role of Geopolitical Alignment in FDI Flows. *European Journal of Political Economy*, **forthcoming**, 102508.
- , PRESBITERO, A. and RUTA, M. (2023b). *Geoeconomic Fragmentation: The Economic Risks from a Fractured World Economy*. London and Paris: CEPR Press.
- ALFARO, L., BRUSSEVICH, M., MINOIU, C. and PRESBITERO, A. F. (2024). Bank Financing of Global Supply Chains. unpublished.
- and CHOR, D. (2023). *Global Supply Chains: The Looming “Great Reallocation”*. NBER Working Paper 31661, National Bureau of Economic Research.
- ANTRÀS, P. (2020). *De-Globalisation? Global Value Chains in the Post-COVID-19 Age*. NBER Working Paper 28115, National Bureau of Economic Research.
- ANTRÀS, P. and YEAPLE, S. R. (2014). Multinational Firms and the Structure of International Trade. In G. Gopinath, E. Helpman and K. Rogoff (eds.), *Handbook of International Economics*, vol. 4, 2, Elsevier, pp. 55–130.
- ATTINASI, M.-G., BOECKELMANN, L. and MEUNIER, B. (2023). *The Economic Cost of Supply Chain Decoupling*. Working Paper 2023/2839, ECB.
- BAILEY, M. A., STREZHNEV, A. and VOETEN, E. (2017). Estimating Dynamic State Preferences from United Nations Voting Data. *Journal of Conflict Resolution*, **61** (2), 430–456.
- BELLEMARE, M. F. and WICHMAN, C. J. (2020). Elasticities and the Inverse Hyperbolic Sine Transformation. *Oxford Bulletin of Economics and Statistics*, **82** (1), 50–61.
- BENGURIA, F. and SAFFIE, F. (2023). Escaping the Trade War: Finance and Relational Supply Chains in the Adjustment to Trade Policy Shocks. unpublished.
- BERNSTEIN, J. (2023). Remarks by Chair Jared Bernstein at the Economic Policy Institute. *Address delivered to the Atlantic Council, September*.
- BLANGA-GUBBAY, M. and RUBÍNOVÁ, S. (2023). *Is the Global Economy Fragmenting?* Staff Working Paper 2023-10, World Trade Organization.
- BLOOMBERG (2023). These Five Countries Are Key Economic ‘Connectors’ in a Fragmenting World. Available at: <https://www.bloomberg.com/news/articles/2023-11-02/vietnam-poland-mexico-morocco-benefit-from-us-china-tensions>, November 2.
- BOLHUIS, M., CHEN, J. and KETT, B. (2023). *Fragmentation in global trade: Accounting for commodities*. Working Paper 2023-073, IMF.
- BOWN, C. P. (2021). The US–China trade war and Phase One agreement. *Journal of Policy Modeling*, **43** (4), 805–843.
- CALDARA, D. and IACOVIELLO, M. (2022). Measuring geopolitical risk. *American Economic Review*,

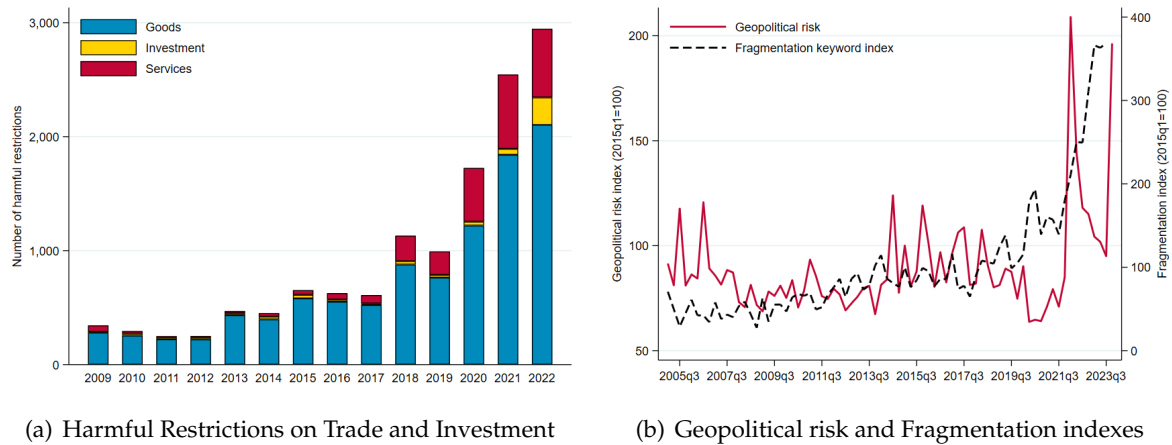
- 112 (4), 1194–1225.
- CALIENDO, L. and PARRO, F. (2023). Lessons from US–China Trade Relations. *Annual Review of Economics*, **15**, 513–547.
- CERDEIRO, D., EUGSTER, J., MUIR, D. and PEIRIS, S. (2021). *Sizing Up the Effects of Technological Decoupling*. Working Paper 2021/069, IMF.
- CHURCHILL, W. (1946). Sinews of Peace (The Iron Curtain Speech). *Address delivered at Westminster College, Fulton, Missouri, March 5*.
- CLAYTON, C., MAGGIORI, M. and SCHREGER, J. (2023). A framework for geoeconomics. *NBER Working Paper No. 31852*.
- COOPER, R. (2010). Economic aspects of the cold war, 1962–1975. In M. P. Leffler and O. A. Westad (eds.), *The Cambridge History of the Cold War*, The Cambridge History of the Cold War, Cambridge University Press, p. 44–64.
- CORREIA, S., GUIMARÃES, P. and ZYLKIN, T. (2020). Fast Poisson estimation with high-dimensional fixed effects. *The Stata Journal: Promoting communications on statistics and Stata*, **20** (1), 95–115.
- DAHLMAN, A. and LOVELY, M. E. (2023). *US-led effort to diversify Indo-Pacific supply chains away from China runs counter to trends*. Blog September 23, 2023, Peterson Institute of International Economics.
- DANG, K. K., ALICIA and ZHAO, Y. (2023). Winners and Losers from the U.S.-China Trade War. *NBER Working Paper No. 31922*.
- FAJGELBAUM, P., PINELOPI, G., KENNEDY, P., KHANDELWAL, A. K. and TAGLIONI, D. (2024). The U.S.-China Trade War and Global Reallocations. *American Economic Review: Insights*, **forthcoming**.
- FAJGELBAUM, P. D. and KHANDELWAL, A. K. (2022). The economic impacts of the U.S.–China trade war. *Annual Review of Economics*, **14**, 205–228.
- FOUQUIN, M. and HUGOT, J. (2016). *Back to the Future: International Trade Costs and the Two Globalizations*. Working Paper 2016-13, CEPPII.
- FREUND, C., MATTOO, A., MULABDIC, A. and RUTA, M. (2023). *Is US Trade Policy Reshaping Global Supply Chains?* Policy Research Working Paper 10593, World Bank.
- GOES, C. and BEKKERS, E. (2022). *The Impact of Geopolitical Conflicts on Trade, Growth and Innovation*. Staff Working Paper ERSD-2022-09, WTO.
- GOKMEN, G. (2017). Clash of civilizations and the impact of cultural differences on trade. *Journal of Development Economics*, **127**, 449–458.
- GOLDBERG, P. K. and REED, T. (2023). Is the Global Economy Deglobalizing? And if so, why? And what is next? *NBER Working Paper No. 31115*.
- GOPINATH, G. (2024). How Policymakers Should Handle a Fragmenting World. *Foreign Policy*, February 6.
- HAKOBYAN, S., MELESHCHUK, S. and ZYMEK, R. (2023). *Divided We Fall: Differential Exposure to*

- Geopolitical Fragmentation in Trade*. IMF Working paper 2023-270, International Monetary Fund.
- HANDLEY, K., KAMAL, F. and MONARCH, R. (2024). Rising Import Tariffs, falling export growth: When modern supply chains meet old-style protectionism. *American Economic Journal: Applied Economics*, **forthcoming**.
- HELPMAN, E. (1984). A Simple Theory of International Trade with Multinational Corporations. *Journal of Political Economy*, **92(3)**, 451–471.
- , MELITZ, M. and YEAPLE, S. (2004). Exports Versus FDI with Heterogeneous Firms. *American Economic Review*, **94(1)**, 300–316.
- HUNTINGTON, S. P. (1998). *The Clash of Civilizations and the Remaking of the World Order*. Simon & Schuster.
- INTERNATIONAL MONETARY FUND (2023). *Global Financial Stability Report, April 2023: A Rocky Recovery, Chapter 3*. Washington, DC: International Monetary Fund.
- JAKUBIK, A. and RUTA, M. (2023). Trading with Friends in Uncertain Times. *Journal of Policy Modeling*, **45 (4)**, 768–780.
- JAVORCIK, B., KITZMUELLER, L., SCHEIGER, H. and YILDRIM, M. (2022). *Economic Costs of Friend-Shoring*. Working Paper 274, EBRD.
- JUHÁSZ, R., LANE, N. J. and RODRIK, D. (2023). *The New Economics of Industrial Policy*. Working Paper 31538, National Bureau of Economic Research.
- KEMPE, E., LUO, M., SCHÄFER, L. and TSOUTSOURA, M. (2021). *Political Ideology and International Capital Allocation*. NBER Working Paper 29280, National Bureau of Economic Research.
- LEFFLER, M. P. (1984). The american conception of national security and the beginnings of the cold war, 1945-48. *The American Historical Review*, **89 (2)**, 346–381.
- LILIE, D. M. (1982). Sectoral Shifts and Cyclical Unemployment. *Journal of Political Economy*, **90**, 777–793.
- LOPEZ, C. S., DIEGO and VÁZQUEZ, S. (2023). *Nearshoring Outlook: Foreign investment, Mexico's Industrial Parks Association survey*. Tech. rep., BBVA Research.
- LOVELY, M. E. (2023). Manufacturing Resilience: The US Drive to Reorder Global Supply Chains. In M. S. Kearney, J. Schardin and L. Pardue (eds.), *Building a More Resilient US Economy*, Aspen Institute.
- MORROW, J., SIVERSON, R. and TABARES, T. (1998). The Political Determinants of International Trade: The Major Powers, 1907–1990. *The American Political Science Review*, **92(3)**, 649–661.
- QIU, H., SHIN, H. S. and ZHANG, L. S. Y. (2023). *Mapping the realignment of global value chains*. Bulletin 73, BIS.
- RAMONDO, N. and RODRIGUEZ-CLARE, A. (2013). Trade, Multinational Production, and the Gains from Openness. *Journal of Political Economy*, **121(1)**, 273–322.
- ROTUNNO, L., ROY, S., SAKAKIBARA, A. and VEZINA, P.-L. (2023). Trade Policy and Jobs in Vietnam: The Unintended Consequences of Trump's Trade War. Unpublished, osf.io/preprints/socarxiv/9rdne.

- SCHILLER, H. (1955). Effects of the Cold War on United States Foreign Trade. *The Review of Economics and Statistics*, **37**(4), 428–430.
- SILVA, J. M. C. S. and TENREYRO, S. (2006). The Log of Gravity. *The Review of Economics and Statistics*, **88** (4), 641–658.
- SULLIVAN, J. (2023). The sources of American Power. *Foreign Affairs*.
- TINTELOT, F. (2017). Global Production with Export Platforms. *The Quarterly Journal of Economics*, **132**(1), 157–209.
- TOEWS, G. and VÉZINA, P.-L. (2022). Resource Discoveries, FDI Bonanzas, and Local Multipliers: Evidence from Mozambique. *The Review of Economics and Statistics*, **104** (5), 1046–1058.
- UTAR, H., CEBREROS ZURITA, A. and TORRES RUIZ, L. B. (2023). *The US-China Trade War and the Relocation of Global Value Chains to Mexico*. CESifo Working Paper 10638, CESifo.
- WORLD TRADE ORGANIZATION (2023). *World Trade Report 2023 — Re-globalization for a Secure, Inclusive and Sustainable Future*. Geneva: World Trade Organization.
- XUE, S. (2023). *Trade Wars with FDI Diversion*. Unpublished manuscript, Princeton University.
- YELLEN, J. (2022). US Treasury Secretary Janet Yellen on the Next Steps for Russia Sanctions and ‘Friend-Shoring’ Supply Chains. *Address delivered to the Atlantic Council*.
- YOTOV, Y. V. (2022). On the role of domestic trade flows for estimating the gravity model of trade. *Contemporary Economic Policy*, **40** (3), 526–540.

Appendix: Additional Figures and Tables

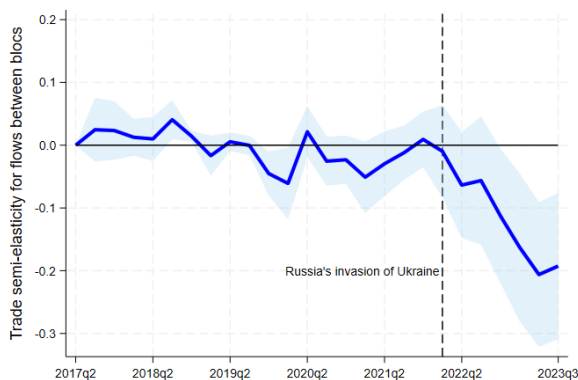
Figure A1: Rising Fragmentation Pressures



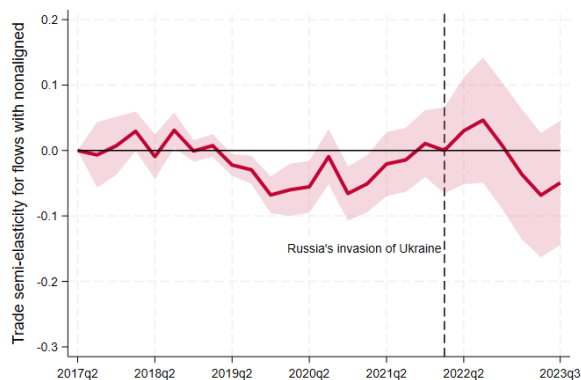
Notes: Panel A plots the number of harmful restrictions on trade and investment per year. Panel B plots the geopolitical risk developed by [Caldara and Iacoviello \(2022\)](#) (Data downloaded from <https://www.matteoiacoviello.com/gpr.htm> on December 2023) and the fragmentation risk index, which measures the average number of sentences, per thousand earnings calls, that mention at least one of the following keywords: deglobalization, reshoring, onshoring, nearshoring, friend-shoring, localization, regionalization.

Sources: [Caldara and Iacoviello \(2022\)](#); Global Trade Alert; NL Analytics; and authors' calculations.

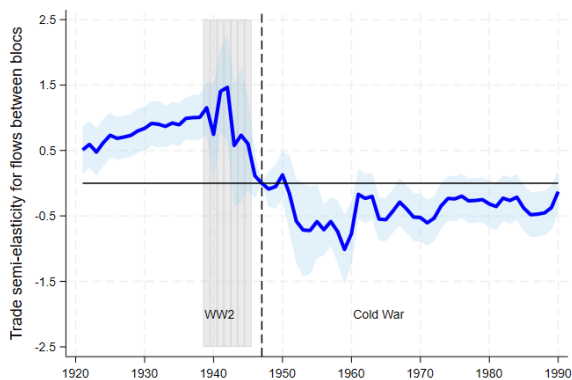
Figure A2: Timing of Trade Fragmentation: The Cold War and Now



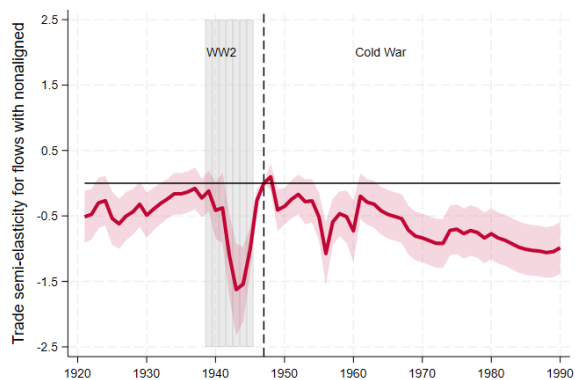
(a) Trade between blocs, now



(b) Trade with nonaligned, now



(c) Trade between blocs, Cold War

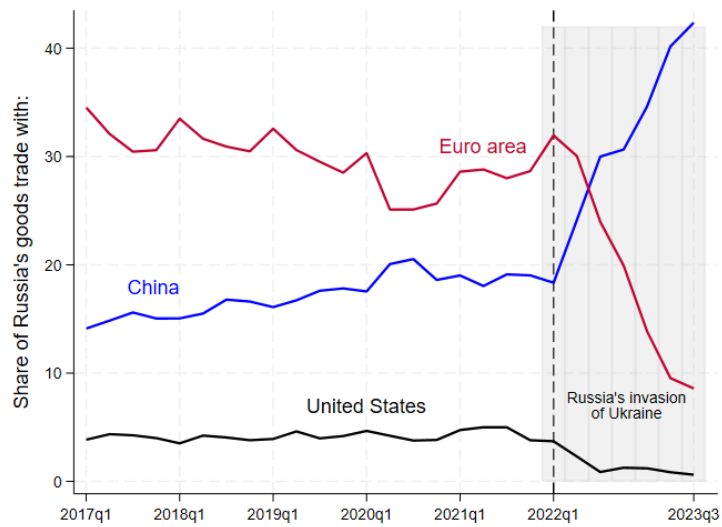


(d) Trade with nonaligned, Cold War

Notes: The charts plot global trade between blocs (panels A and C) and with nonaligned (panels B and D) around the Russian invasion of Ukraine (panels A and B) and the Cold War (dated as starting in 1947). For each episode, the chart plot the semi-elasticity of trade for flows between blocs and with nonaligned, and the associated 90 percent confidence bands, estimated with PPML and a fully saturated gravity model as in equation 1 in the main text. The missing category is trade within blocs. The Cold War results are obtained using yearly data from 1920 to 1990—with 1947 as excluded year—and the bloc definition based on [Gokmen \(2017\)](#). The results for the most recent period are based on quarterly trade data from 2017:Q1 to 2023:Q3 (with 2021:Q4 as excluded quarter), with the wider bloc definition based on the Ideal Point Distance (a measure based on voting pattern in the United Nation General Assembly computed by [Bailey et al. \(2017\)](#)).

Sources: Trade Data Monitor; Historical Bilateral Trade and Gravity dataset (TRADHIST) prepared by [Fouquin and Hugot \(2016\)](#); and IMF staff calculations.

Figure A3: Change in Russia's Trade Flows



Notes: The chart plots the share of Russia's good trade with China, the United States and the Euro area, before and after the Russia's invasion of Ukraine.

Sources: Trade Data Monitor; and authors' calculations.

Table A1: Reallocation across Import and FDI Sources: Evolution over Time Periods

Notes: The table reports the coefficients from regressing the Lilien Index computed on the value of imports (panel A) and FDI (panel B) on indicators for different time periods, with 2003-2007 being the excluded period. Column (1) includes all countries in the sample, column (2) only advanced economies, while column (3) includes only emerging markets and developing economies. In column (4) the regression is based on the sample of countries hypothetically aligned with the U.S./EUR, while the remaining countries are in column (5). Standard errors in parenthesis are clustered at the country level. ***, **, and * denote significance at the 1%, 5%, and 10% levels, respectively.

	(1) All	(2) AEs	(3) EMDEs	(4) U.S. bloc	(5) Others
Panel A. Trade flows					
2008-2012	0.340* (0.139)	0.430** (0.126)	0.274 (0.195)	0.397** (0.123)	0.286 (0.206)
2013-2020	0.059 (0.113)	0.470** (0.168)	-0.147 (0.143)	0.275 (0.168)	-0.085 (0.151)
2021-2023	0.706** (0.215)	1.118*** (0.219)	0.486 (0.300)	1.157*** (0.216)	0.431 (0.315)
Observations	2,639	785	1,854	893	1,746
R ²	0.488	0.432	0.453	0.375	0.463
Panel B. FDI flows					
2008-2012	0.0608 (0.602)	-1.1604 (0.766)	1.0551 (0.867)	-0.6673 (0.774)	0.7149 (0.893)
2013-2020	0.3120 (0.624)	-0.4877 (0.855)	0.9983 (0.886)	-0.3820 (0.804)	0.9438 (0.932)
2021-2023	1.8130** (0.779)	2.8929** (1.311)	1.0364 (0.913)	2.2989** (1.114)	1.4429 (1.088)
Observations	1,660	712	948	740	920
R ²	0.278	0.228	0.301	0.251	0.293
Country FE	Y	Y	Y	Y	Y

Table A2: Trade and investment flows between blocs: Excluding the U.S. and China

Notes: The table reports the results of the estimation of a gravity model using ordinary least squares (OLS, columns 1-2 and 5-6) and Poisson pseudo-maximum likelihood (PPML, columns 3-5 and 8-10), where the dependent variable is the bilateral trade in US dollars (panels A and B) or the number of FDI projects (panel C). Data are annual in panel B and quarterly in panels A and C. The sample excludes the U.S. and China, and spans the period 2017:q1-2023:q4 (panel A), 1920-1990 (excluding World War II, 1939-1945, panel B) and 2010:q1-2023:q4 (panel C). The Post War variable identifies the period following Russia's invasion of Ukraine and is equal to 1 from 2022:q1 onwards. The Cold War dummy is equal to 1 for the years 1947-1991. The Between Bloc variable equals 1 if the source and destination country do not belong to the same bloc, and 0 otherwise. The Nonaligned variable equals 1 if at least one country in the pair is nonaligned. In the current period, blocs are centered around the U.S. and China, with a group of countries remaining nonaligned. The wider bloc definition uses the Ideal Point Distance (a measure based on voting pattern in the United Nation General Assembly computed by [Bailey et al. \(2017\)](#)) to classify countries as aligned to the U.S., to China, or nonaligned. The narrower bloc definition is based on a hypothetical Western bloc including the U.S., Europe, Canada, Australia and New Zealand, and a hypothetical Eastern bloc comprising Belarus, China, Eritrea, Mali, Nicaragua, Russia, and Syria, with the other countries considered nonaligned. For the Cold War period, we use the bloc definition based on [Gokmen \(2017\)](#). The Western bloc includes Andorra, Australia, Belgium, Canada, Denmark, France, Germany, Greece, Iceland, Israel, Italy, Japan, Luxembourg, Malta, Monaco, Netherlands, New Zealand, Norway, Philippines, Portugal, San Marino, South Korea, Spain, Taiwan, Thailand, Türkiye, United Kingdom, United States. The Eastern bloc includes Albania, Armenia, Azerbaijan, Belarus, Bulgaria, China, Cuba, Czech Rep., Estonia, Georgia, Hungary, Kazakhstan, Kyrgyzstan, Lao People's Dem. Rep., Latvia, Lithuania, Moldova, Mongolia, North Korea, Poland, Romania, Russia (USSR), Slovakia, Turkmenistan, Ukraine, Uzbekistan, Vietnam. The remaining countries are considered nonaligned. Standard errors in parenthesis are clustered at the source-destination pair level. ***, **, and * denote significance at the 1%, 5%, and 10% levels, respectively.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Wider Bloc Definition				Narrower Bloc Definition			
	OLS		PPML		OLS		PPML	
Panel A. Trade around the Russian invasion of Ukraine								
Between Bloc * Post War	-0.0676*** (0.012)	-0.0483*** (0.014)	-0.0876 (0.058)	-0.0959** (0.043)	-0.4535*** (0.052)	-0.2902*** (0.063)	-0.6162*** (0.176)	-0.6852*** (0.150)
Nonaligned * Post War	0.0005 (0.008)	-0.0124 (0.016)	0.1237*** (0.029)	0.0624* (0.038)	-0.0282*** (0.006)	-0.0293** (0.014)	0.1071*** (0.028)	0.1601*** (0.034)
Observations	230,935	230,817	230,935	230,817	253,544	253,428	253,544	253,428
Panel B. Trade during the Cold War								
Between Bloc * Cold War	-0.4258*** (0.061)	-0.0189 (0.093)	-0.5033*** (0.166)	-1.0146*** (0.119)				
Nonaligned * Cold War	-0.2463*** (0.044)	0.0500 (0.071)	-0.2621** (0.116)	-0.5736*** (0.222)				
Observations	795,793	795,385	738,340	661,277				
Panel C. FDI around the Russian invasion of Ukraine								
Between Bloc * Post War	-0.7472*** (0.143)	-0.5259*** (0.151)	-2.7213*** (0.317)	-1.7384*** (0.317)	-0.1991*** (0.055)	-0.2265*** (0.077)	-0.2158*** (0.076)	-0.0806 (0.069)
Nonaligned * Post War	-0.0455 (0.050)	-0.2111* (0.115)	0.0056 (0.034)	-0.0277 (0.061)	-0.0309 (0.057)	-0.2152 (0.186)	0.0004 (0.039)	-0.1218* (0.069)
Observations	119,616	118,272	119,616	109,864	110,768	109,480	110,768	101,260
Country-pair FE	Y	Y	Y	Y	Y	Y	Y	Y
Time FE	Y	-	Y	-	Y	-	Y	-
Source x Time FE	N	Y	N	Y	N	Y	N	Y
Destination x Time FE	N	Y	N	Y	N	Y	N	Y