

Geopolitical Fragmentation and Friendshoring

Evidence from Project-Level Foreign Investment Data

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Abstract

This paper examines the relationship between geopolitical fragmentation and friendshoring of foreign investments over time, countries, and sectors. The analysis uses comprehensive data on foreign direct investments covering greenfield projects, mergers and acquisitions, and stocks of affiliates, as well as data on four alternative measures of geopolitical distance between countries. The gravity estimations suggest that, first, geopolitical differences have a negative effect on foreign investments and the magnitude

has heightened in the post-pandemic period compared to a decade ago. Second, it is primarily the companies from advanced Western economies whose foreign investment decisions are increasingly shaped by friendshoring forces. Finally, the paper shows that friendshoring is not only confined to strategic industries, implying that allocations of foreign direct investments may not solely reflect national security or resilience considerations.

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Geopolitical Fragmentation and Friendshoring Evidence from Project-Level Foreign Investments Data

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1 Introduction

The past few years have witnessed an increase in geopolitical distances between groups of countries, initially fueled by the US-China trade war and further intensified by Russian Federation’s invasion of Ukraine (Cavallo et al., 2021; Fajgelbaum et al., 2021; Fajgelbaum and Khandelwal, 2022). Studies examining the recent impact of geopolitical differences find evidence of a decline in trade among geopolitically distant countries (Freund et al., 2023; Alfaro and Chor, 2023; Jakubik and Ruta, 2023; Aiyar et al., 2023; Campos et al., 2023). For example, Alfaro and Chor (2023) and Freund et al. (2023) find that in the period 2017-22, direct US imports from China decreased, while import shares from low-wage or near-shore locations such as Viet Nam, India, Canada and Mexico increased. While trade aspects are widely evaluated, the impact of geopolitical differences on foreign direct investment (FDI) is relatively less explored. One recent study by Aiyar et al. (2024) suggests that geopolitical distance, as indicated by UN voting patterns, significantly shapes FDI flows across countries, with this influence becoming more pronounced since 2018, aligning with the friendshoring hypothesis. The study suggests however that geopolitics had the greatest impact in the 2000s, raising questions about whether friendshoring is truly a new phenomenon unique to recent years. In fact, Gopinath et al. (2024) suggest that these effects on globalization flows were sharper during the Cold War Era.

This paper contributes to the small but growing literature on the impact of geopolitical fragmentation on foreign investments (Gopinath et al., 2024; Alfaro and Chor, 2023; Aiyar et al., 2023, 2024) by verifying the robustness of recent findings across three distinct measures of foreign activity using data on foreign direct investments (FDI) covering greenfield projects, mergers & acquisitions, and stocks of affiliates, as well as four alternative indicators of geopolitical distance. We delve into the heterogeneity of friendshoring forces across countries, sectoral attributes, and time periods to deepen recent findings.

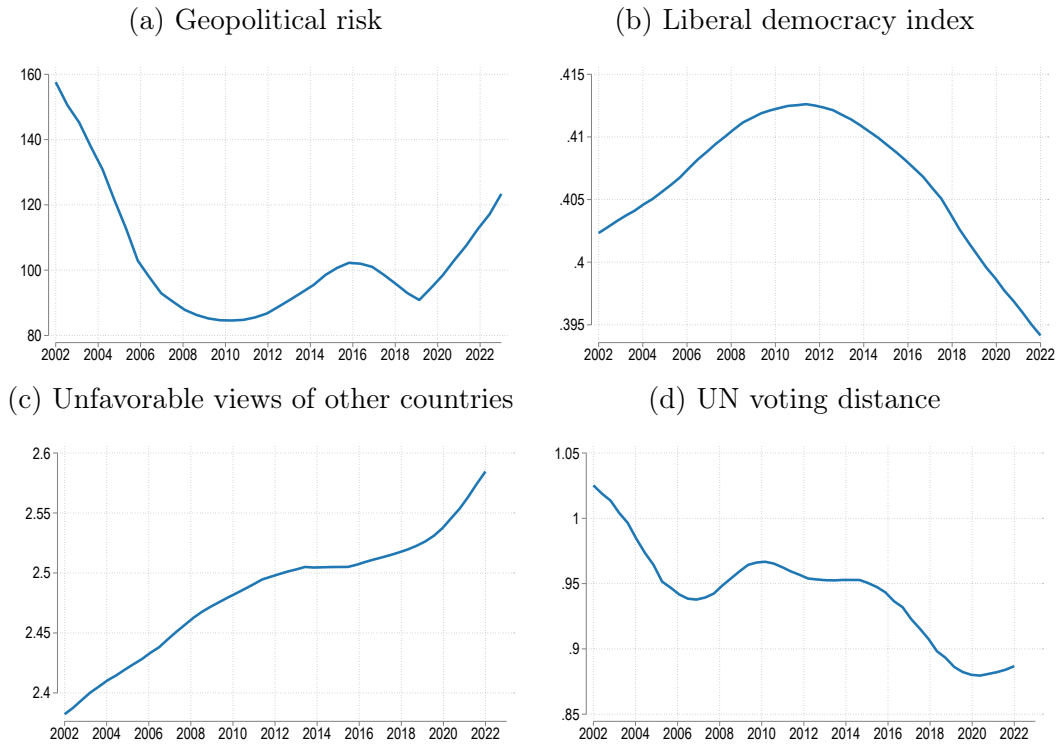
For developing countries, FDI is crucial for job creation and the potential positive spillover it brings through technology transfer and firm upgrading (Bai et al., 2024; Toews and Vezina, 2022; Javorcik, 2004). Also, As multinationals are an integral part of global value chains, such that a significant share of trade in advanced countries occurs within multinationals and their foreign affiliates, it is crucial to understand FDI dynamics to capture the complete picture of the impact of geopolitical changes on economic fragmentation.¹ Thus, understanding the relationship between geopolitics and FDI becomes even more crucial in the current environment where developing countries operate under tighter fiscal space and the investments needed to achieve sustainable development goals require greater participation from the private sector.

Geopolitical differences across countries are pervasive, and not only confined to the US-China tariff war. For example, Brexit showcased a country exiting from a large and deep trade agreement, while Russia’s invasion of Ukraine raised geopolitical tensions, leading countries to rethink their import partners and trade diversification. Such global events have culminated in significant increases in geopolitical risk since 2019, as shown in a new research-based index capturing the frequency of articles discussing adverse geopolitical events in leading newspapers (Caldara and Iacoviello, 2022) (Figure 1, panel a). A recent report by the Centre for the Future of Democracy (Foa et al., 2022) also shows that the world is characterized by distinct spheres of governance regimes after a decade of geopolitical polarization. Other trends include a drop in the liberal democracy index, by VDem, since 2011 (Figure 1, panel b), and a rise in unfavorable views of other countries among the public, according to data from the Pew Research Center (Figure 1, panel c). A widespread measure of geopolitical alignment, the similarity of countries’ voting patterns at the UN General Assembly (Bailey et al., 2017), suggests that countries were becoming more aligned from 2012 but that the trend has changed course from 2019 onward (Figure 1, panel d).

¹Multinationals play an important role in trade across borders. For instance, more than half of all US exports and more than 40% of US imports flow through multinationals, with nearly half of the imports transacted within the boundaries of these firms (of Economic Analysis, 2018; Bernard et al., 2009).

These geopolitical upheavals have also prompted policy responses and de-coupling strategies that affect foreign investments. [Bencivelli et al. \(2023\)](#) show that many developed economies have recently strengthened their foreign investment screening processes, granting domestic authorities the power to limit foreign acquisitions in key industries. [Evenett and Fritz \(2021\)](#) suggest countries' investment policies are becoming less conducive to inward foreign investment. These developments have further disrupted the *direct* flow of globalization.

Figure 1: Signs of geopolitical turmoil



Notes: Local polynomial fits of cross country data. Data from, clockwise from top left, [Varieties of Democracy \(VDem\)](#), [Caldara and Iacoviello \(2022\)](#), [Bailey et al. \(2017\)](#), and [Pew Research Center](#).

Geopolitical disruptions have generated a growing debate about the need for protectionism, near-shoring, or friendshoring, with the latter implying the offshoring of production to geopolitically aligned or "friendlier" countries. A recent survey by Kearney, a consultancy, cited in [IMF \(2023\)](#), suggests that 73% of executives believe that

friendshoring would increase by 2026. A survey by the European Central Bank (ECB) suggests that more than 70% of 65 European multinationals surveyed are either shifting production to nearby or politically friendly countries or diversifying ([Attinasi et al., 2023](#)). Geopolitical risk is found to be the most important factor in moving operations into the EU. Policymakers are increasingly offering stronger incentives for firms to consider friendshoring and reshoring to move production to countries with aligned political preferences. The implementation of the Inflation Reduction Act (IRA) in the United States and the CHIPS Act in both the United States and Europe is a testament to these efforts. These policies aim to reconfigure supply chain networks, marking a shift from traditional offshoring driven by cost differentials to strategic domestic manufacturing. [Javorcik et al. \(2022\)](#) suggest friendshoring could be very costly. A recent VoxEU ebook also cautions against the economic risks from economic fragmentation ([Aiyar et al., 2023](#)).

Previous research has shown that it is indeed the case that, when countries clash over politics, their business, trade and investment relations sour. During the euro crisis, Greeks bought fewer German cars ([Fouka and Voth, 2023](#)), during Brexit, British consumers spent less on EU goods ([Sequeira and Nardotto, 2021](#)), and the Iraq war lowered the sales of US products in Arab countries ([Clerides et al., 2015](#)). With geopolitical frictions increasing across the board, we examine if friendshoring of foreign investments could be materializing as well. A few studies have previously assessed the impact on foreign investments in the context of geopolitical tensions. For example, [Aiyar et al. \(2023\)](#) finds that an increase in geopolitical distance is associated with a significant decrease in FDI, particularly in low- and middle-income countries. In fact, their work establishes that FDI flows are driven not just by geographical, cultural and institutional proximity between bilateral country pairs, but also shaped by the geopolitical alignment between them. In their research on the consequences of the "great reallocation" through reshuffling of supply chains, [Freund et al. \(2023\)](#) and [Alfaro and Chor \(2023\)](#) find that the US supply chains still rely heavily on China, and that there is no

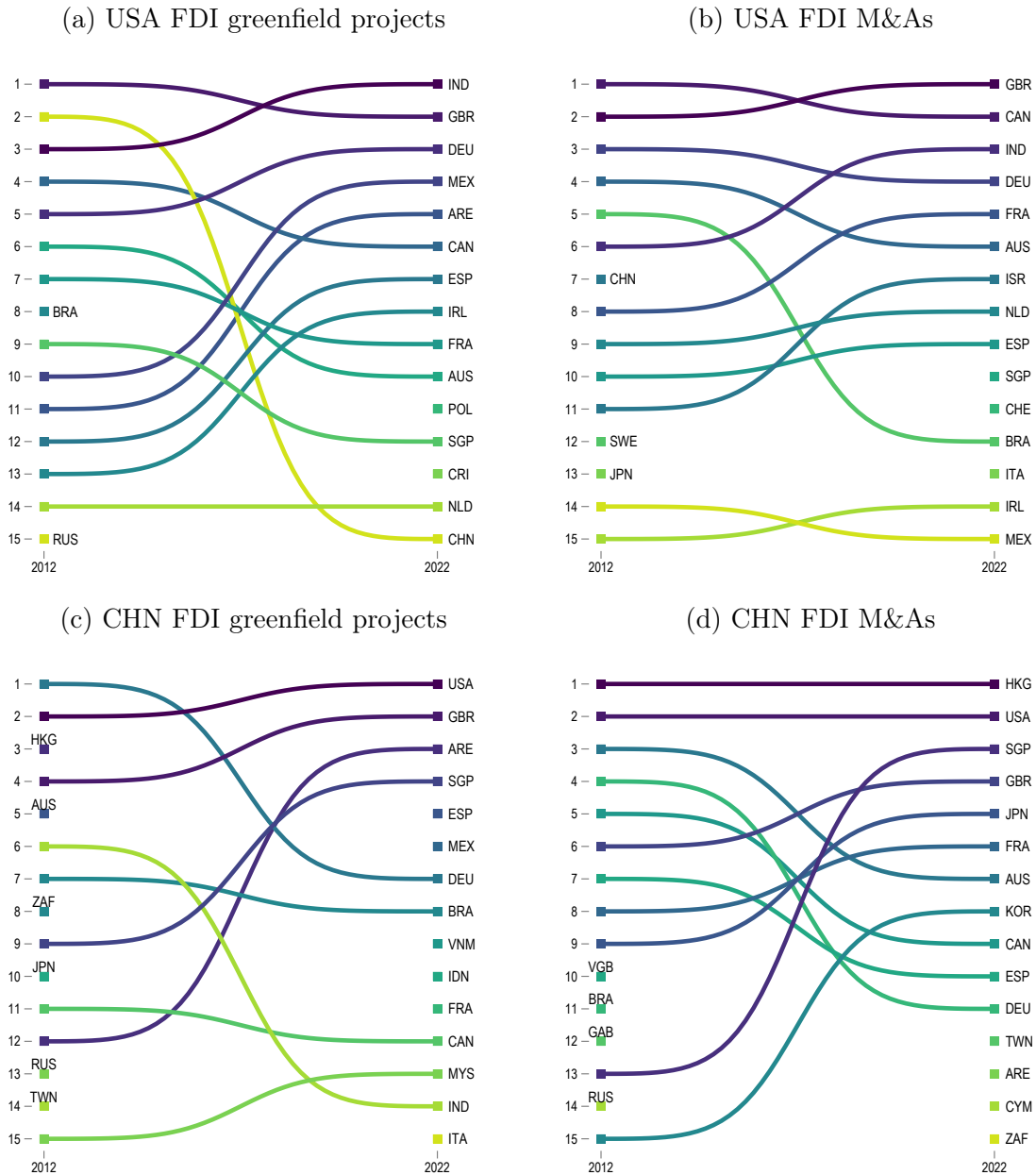
evidence of reshoring. [Alfaro and Chor \(2023\)](#), however, highlight that direct sourcing from China has decreased, and so has the share of FDI from the United States to China.² Nevertheless, [Freund et al. \(2023\)](#), [Alfaro and Chor \(2023\)](#) and [Garred and Yuan \(2023\)](#) show that despite the reallocation of US imports away from China and towards Viet Nam, Mexico and other countries, China’s role continues to be important notably via increased exports of parts and components and FDI to the US’s trade partners.

Using fDi markets data, [Figure 2](#) illustrates that the United States’ top FDI destinations over the last 10 years have changed. China was the second biggest destination for United States greenfield FDI in 2012, but dropped to 15th place in 2022. In addition, both Brazil and Russia dropped out of the top 15, and Costa Rica and Poland climbed to the top 15. China was the 7th destination for United States M&As in 2012, but was no longer in the Top 15 in 2022.

By comparison, outward FDI from companies in China shows no sign of shifting away from the United States due to geopolitical differences between the two countries. The United States was the top FDI destination for companies from China in 2022, having moved up from second place in 2012. The United States is also the second most popular destination for companies from China M&As, a position that has not changed in the last 10 years. Outward FDI from companies in China shows no sign of shifting away from the United States due to geopolitical differences between the two countries ([Figure 2](#)). In addition, countries such as Viet Nam, Mexico and Indonesia which are increasing their market share of exports to the US ([Freund et al., 2023](#)), are now among the top-15 greenfield FDI destinations for companies from China.

²The [Financial Times](#) also warned in October 2023 that China suffered plunging foreign direct investment (FDI) amid geopolitical tensions.

Figure 2: Top destinations of US and China FDI, 2012 vs 2022



Notes: Data from fDiMarkets and Refinitiv Eikon. Based on the number of projects or deals.

This paper documents evidence on the extent of friendshoring in FDI, building on recent research on the topic. The three key contributions and results of this paper can be summarized as:

First, using three measures of foreign activity: FDI greenfield projects, M&As, and number of affiliates over the past 20 years (2003-2022), we document long-term patterns in the role of geopolitical forces for various aspects of foreign investments. Our work uses detailed project-level data from fDi Markets, in addition to the data from Refinitiv Eikon, and [Ahmad et al. \(2023\)](#). We also use four distinct measures of geopolitical alignment or *friendship* across countries, namely a measure of bloc alignments from *Capital Economics*, a dummy for bilateral FDI between high liberal democracy-to-low liberal ones, public favorability from opinion surveys, on top of the more commonly used measure of UN voting differences. Our contribution to the burgeoning literature on the impact of geopolitical fragmentation and global economic flows is to verify the robustness of recent findings across three distinct measures of foreign activity and four alternative measures of geopolitical fragmentation. We also confirm the results over time, year by year; in contrast to existing studies such as [Aiyar et al. \(2023\)](#) that consider the average impact over specific time periods. Our yearly estimates allow us to closely follow the evolution in the importance of geopolitical forces throughout the available sample period.

Our analysis confirms that FDI being affected by geopolitical forces is not a new phenomenon and has indeed been the case throughout the sample period. It also confirms that the effect of geopolitical distance has been steadily increasing since 2011, when its significance was minimal, and it currently holds greater dominance than at any point since 2003. For example, the impact of geopolitical distance on greenfield FDI has doubled over the past decade, with a one standard deviation drop in UN voting similarity decreasing greenfield FDI by 8% in 2011 compared to 16% in 2022. One standard deviation drop in public opinion decreased greenfield FDI by 11% in 2011 compared to an overwhelming decline by 38% in 2022; and being in a different bloc reduced the flow of greenfield projects by around 11% in 2011, and by double that in 2021. While our findings are robust across various measures of FDI and geopolitical fragmentation, they also suggest that the impact of differences in geopolitical alignment

on brownfield investments (M&A) is more pronounced in recent years relative to their effect on greenfield investments. By comparison, the negative effect of geopolitical non-alignment on the stock of affiliate activity has remained relatively stable over the years, especially when geopolitical differences are measured using bloc alignment.

Second, to discern broader patterns in friendshoring forces, we separately consider the impact of geopolitical differences on FDI from top-20 source countries. Our gravity estimations reveal that friendshoring activities in recent years (2020-2022) are largely observed among companies originating from advanced Western economies. There are remarkable differences compared with East Asian countries such as China, Japan, the Republic of Korea and Singapore which are now increasingly investing in geographically distant countries. Not only do Chinese companies invest more in geopolitically distant countries, they are also investing more in countries that are geopolitically closer to the US. This result underscores the challenges associated with decoupling value chains in an interconnected globalized world.

Third, we explore the strength of the relationship between geopolitical differences and FDI for certain sector groups, such as strategic sectors characterized by national security concerns or high-tech intensity; GVC-intensive sectors that are increasingly vulnerable to global trade shocks; and contract-intensive sectors that typically have high relationship-specific investments and are potentially more exposed to trade policy changes. While the motivation behind inward-looking responses to FDI appears to stem from national security concerns and efforts to enhance supply chain resilience against global shocks and environmental risks, our findings indicate that friendshoring is not confined to strategic sectors or those characterized by high participation in GVCs. We observe comparable effects of geopolitical differences on foreign investments across strategic, GVC-intensive, and contract-intensive sectors. These effects align closely with the average impact of geopolitical differences on FDI across all sectors, suggesting that these phenomenon extend beyond national security or strategic considerations.

The paper beyond this point is organized as follows. We describe our data and

empirical methodology in Section 2, and discuss the results in Section 3 before finally concluding the paper with some potential implications and policy options in the last section.

2 Data and Empirical Strategy

2.1 Measuring geopolitical fragmentation

To measure the extent of geopolitical alignment or simply said, *friendship* between bilateral country pairs, or a lack thereof, we consider four distinct measures.

First, voting patterns at the United Nations (UN) General Assembly provide a well established measure of geopolitical distance between countries (Bailey et al., 2017). Countries that vote similarly at the UN General Assembly trade more with each other (Umana Dajud, 2013), and see more cross-border M&A deals (Damioli and Gregori, 2023). Conversely, Mityakov et al. (2013) show that countries diverging from the US in UN voting patterns exported less to the US during 1962–2000. For example, US consumers stopped buying products that appeared to have originated from France after disagreement at the UN between France and the US over the invasion of Iraq (Michaels and Zhi, 2010; Pandya and Venkatesan, 2016). Jakubik and Ruta (2023) suggest that UN voting matters even more for trade when trade policy uncertainty is high. This measure has also been used in IMF (2023) and Aiyar et al. (2024) to show its effect on FDI.

Second, countries' friendship can be measured using surveys of public opinion. The Pew Research Center survey the general public across countries regarding their views of other countries. A favorable average public opinion does correlate with increased trade (Bao et al., 2020; Chang et al., 2022), and such data has so far not yet been combined with FDI data to infer on FDI flows.

Third, using data from the V-Dem institute, we measure whether a country is a liberal democracy or not using the median of the liberal democracy index (LDI) from [Varieties of Democracy](#) (VDem). This index ranges from 0 to 1 and measures the extent of voting rights, the fairness of elections, freedoms of association and expression, civil liberties, and executive constraints. LDI allows us to infer if a bilateral FDI relationship between high liberal democracies-to-low liberal ones matters more (or less) today in shaping outward FDI flows.

Fourth, we measure the distance between five different geopolitical blocs, defined by [Capital Economics](#) as *US allies*, *leans US*, *unaligned*, *leans China*, and *China allies*. These blocs are based on UN voting, public opinions, as well as other indicators such as participation in the Belt and Road initiative. According to [Wolf \(2023\)](#), writing in the [Financial Times](#) about these different blocs, "America and its allies remain more united and economically powerful than Beijing's group of malcontents". We compute a measure of bloc distance ranging from 0 to 4. The distance between countries in the same bloc is 0, the distance between *US allies* and *China allies* is 4, the distance between *US allies* and *leans US* is 1, etc.

2.2 Measuring foreign activity

We use project-level data on greenfield FDI from fDi Markets, a Financial Times subsidiary that monitors global cross-border investments and allows for a credible measure of cross-border financial flows.³ The database provides information on the announcement date of the project, sector, sub-sector, whether the investment is greenfield (new investment) or brownfield (an expansion of prior efforts), names of investors, source country and city (state), destination country and city, capital investment, and anticipated direct jobs created, among other things. It covers all cross-border *new* greenfield investments globally from 2003 onward, but excludes mergers and acquisitions, it cap-

³Other papers using fDi markets data include [Mensah and Traore \(2024\)](#) and [Ahn et al. \(2024\)](#).

tures only a limited portion of global FDI activity. However, with the high sunk and fixed costs that are incurred when firms undertake FDI, it should in principle, be sensitive to country policies that actively seek to reorient patterns of global production and sourcing. Nevertheless, we complement this measure of foreign activity with additional data on cross-border M&As from Refinitiv Eikon. These sources are also used by IMF (2023) and Aiyar et al. (2024). We also check if our results are robust to using data on the stock of FDI affiliates, rather than the flow, using data from the Multinational Revenue, Employment, and Investment Database (Ahmad et al., 2023). This dataset provides information on multinational enterprises from 2010 to 2021 in a smaller sample of countries.

2.3 Estimation strategy

To estimate the effect of bilateral friendship on foreign investment patterns over time, we use a gravity model – commonly used to examine the geography of international trade flows as well as investment and migration flows. The model is based on the idea that the flows between locations are negatively related to the frictions between them, such as trade costs or geographic distance, and positively affected by affinity measures such as common language.

We estimate a structural gravity model with origin and destination fixed effects for each year from 2003 to 2022, using a pseudo Poisson maximum likelihood estimator (Head and Mayer, 2014; Silva and Tenreyro, 2006; Fally, 2015):

$$(1) \quad FDI_{ij} = \alpha_i + \delta_j + \beta_1 \cdot F_{ij} + \beta_2 \cdot X_{ij} + \varepsilon_{ij}$$

where FDI_{ij} is the FDI flow between locations i and j , measured by the number

of greenfield projects or M&A deals, or the stock of foreign affiliates from i in j .⁴ F_{ij} a measure of (lack of) friendship between locations i and j , X_{ij} captures other factors affecting the flow between i and j such as geographic distance, a common border, a common language, and a common colonial history. α_i and δ_j are origin and destination fixed effects. ε_{ij} is the error term. Data on standard gravity control variables are from CEPII. Summary statistics are in Table A.1 (country-years with zero FDI are dropped from the sample). Our data covers 190 countries when using UN voting as a measure of geopolitics but drop to 142 countries when using blocs, and to 30 countries when using Pew bilateral opinions.

3 Results

3.1 Baseline results

Figure 3 summarizes the results of our gravity estimates from equation (1). In general, we find an increasing role played by geopolitical alignment or friendship between countries in shaping FDI flows in recent years. Panel (a) shows the effect of UN voting differences on three measures of FDI. There is a clear downward trend since 2011, suggesting that UN voting differences have a larger negative effect today than ten years ago, when they mattered least. A one standard deviation drop in UN voting similarity decreased greenfield FDI by 8% in 2011 compared to 16% in 2022. The results in Table A.2 confirm that this difference in effects is statistically significant. Across three measures of FDI, UN voting differences affected FDI significantly more in recent years, especially from 2018 onwards, relative to 2011. The effect is also now larger than it has been since 2003.

⁴We also run our analysis with additional outcome measures such as investment volume, and anticipated job creation, however, given that these measures less precise in the fDiMarkets database, we find the estimation coefficients to be less consistent across years. These additional results are available upon request.

Panel (b) suggests that companies originating from above median liberal democracies have become less likely to start new investment projects in countries with below median liberal democracies, a result that is in line with unfriendly countries becoming less attractive destinations. A bilateral FDI relationship between high liberal democracies to low liberal ones decreased the flow of greenfield FDI projects by 40% in 2011 and by 52% in 2021. Results in Table A.3 confirm that this difference is statistically significant. It is also true to a certain extent for M&As, though the downward trend is less clear here. Countries with below the median democracy score experience a decline in the stock of foreign affiliates from countries with above the median, although this effect appears to have remained negative and constant over 2011-2021.⁵

An unfavorable public opinion also matters more in today's world, compared to a few years back. Panel (c) suggests a sharp increase in its importance for FDI in 2022. The changes in the magnitude of this relationship between public opinion and foreign activity over time are large. Figure 3 suggests that a one standard deviation drop in public opinion about the bilateral partner decreased greenfield FDI by 11% in 2011 compared to an overwhelming decline by 38% in 2022. Results in Table A.4 show that these differences between 2011 and 2022 are statistically significant. The increased effect of public unfavorable opinion is particularly pronounced on M&As. Results using data on affiliates also show a remarkable increase, indicating that public unfavorable opinion might reduce FDI stocks in 2021, while it appeared to increase FDI stocks in previous years.

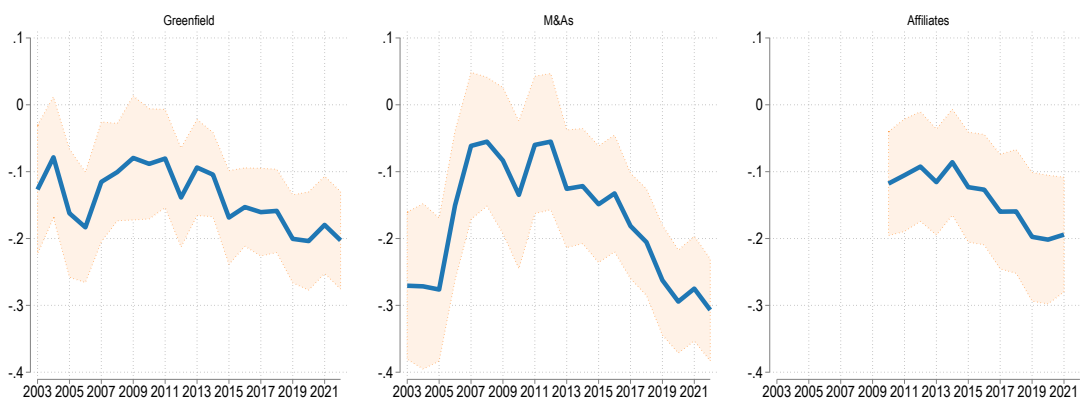
Panel (d) confirms the increasing role of geopolitics, using differences in political alignment as a measure of fragmentation, in shaping FDI flows in recent years. It suggests that an increased distance across geopolitical blocs matters more today than in the early 2010s. The results are in line with our previous result that friendshoring is materializing. Being in a different bloc reduced the flow of greenfield projects by around 11% in 2011, and by double that in 2021. Going from a distance of 0 to 4,

⁵Note that the coverage of FDI destination countries is much smaller in this data sample.

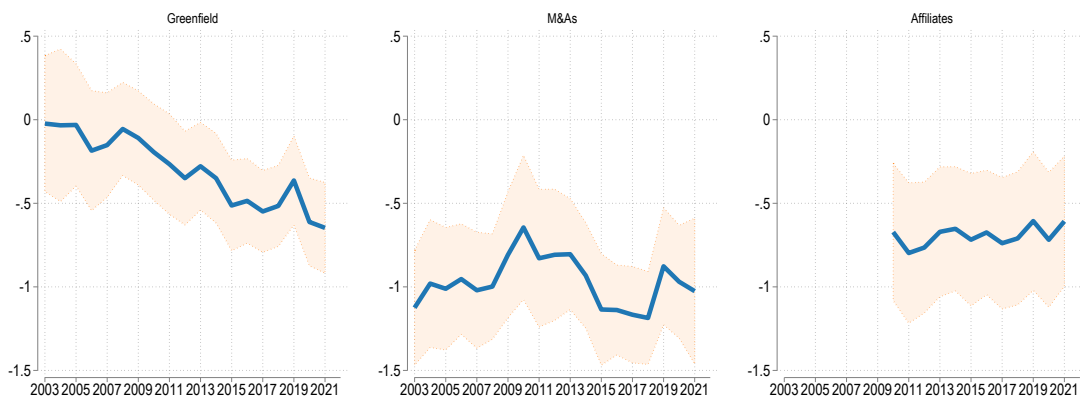
or from within a bloc to between blocs, reduced greenfield projects by around 55% in 2011, and by 70% in 2021. The statistical significance of this difference is shown in Table A.5. The effect on the stock of affiliates is not statistically significant, yet also slightly declining over time.

Figure 3: The effect of *lack of geopolitical differences* on FDI

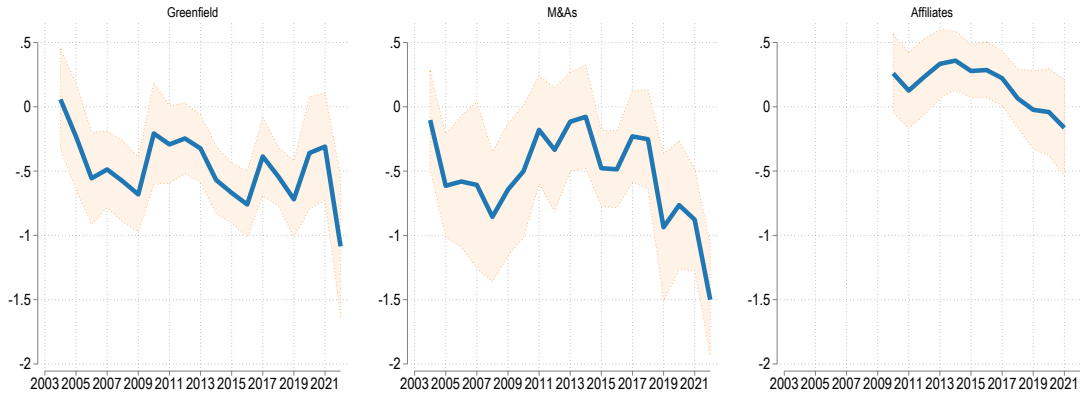
(a) Effect of UN voting differences



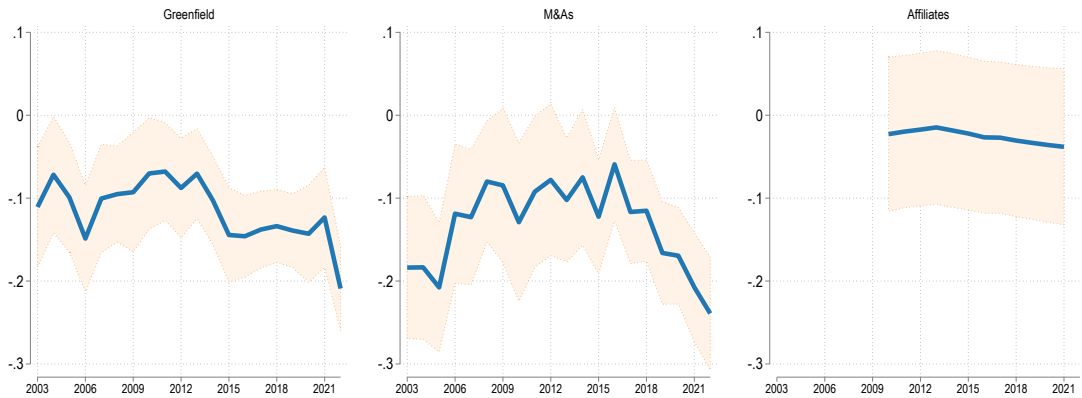
(b) Effect of bilateral differences in liberal democracy index



(c) Effect of unfavorable public opinion



(d) Effect of bloc alignment differences



Notes: The y axes measure the effect of the different measures of geopolitical alignment on FDI, both greenfield (left) and M&As (center), as well as the stock of affiliates (right), over time. These are estimates from a gravity model, controlling for origin and destination fixed effects as well as geographic distance, shared borders, common language, and common colonial empire.

3.2 The heterogeneous effects of geopolitical fragmentation

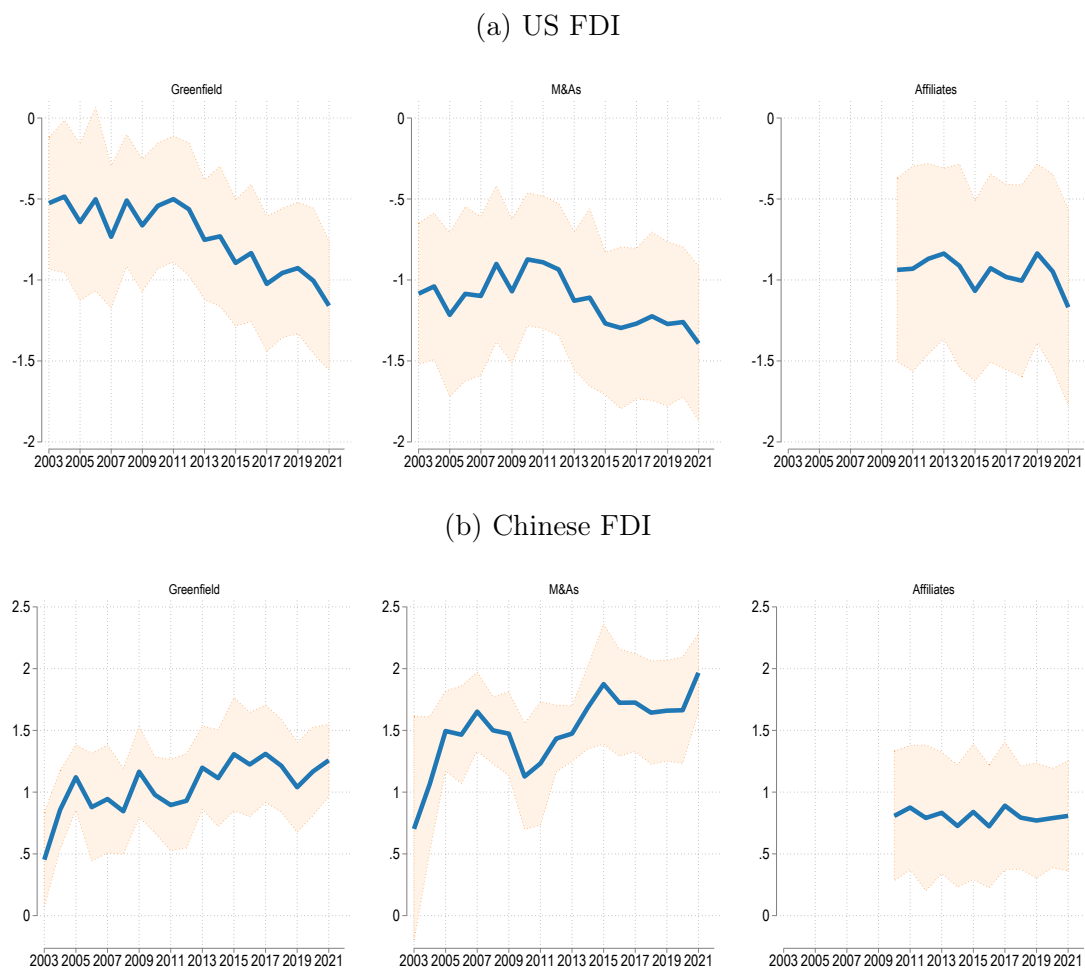
In this subsection, we explore the heterogeneous effects of geopolitical fragmentation by country and sector attributes.

3.2.1 Countries of origin

First, we compare the evolution of friendshoring forces for outward FDI for companies from the United States and China. Figure 4 shows the effect of UN voting differences on three types of FDI measures, with Panel (a) illustrating the effect on FDI originating from the United States, while Panel (b) repeats the same for China. The contrasting effects for the US and China are striking. United States FDI follows the friendshoring patterns identified with global data in Panel (a) of Figure 3. UN voting differences deter US FDI, and this effect has become more important over the last 10 years. By contrast, UN voting differences, a measure of geopolitical distance, has the opposite effect on Chinese FDI. Not only is the effect of geopolitical differences on Chinese FDI positive, it has also increased over the last ten years. Said differently, Chinese companies explore outward FDI opportunities across locations that are not necessarily geopolitically aligned and, on average, defies the standard *friendshoring* forces observed globally.

In fact, as China dropped out of prominence as a preferred destination for foreign activity originating from the United States and some of the other advanced Western economies, Chinese companies have increased outward FDI to countries that are closely aligned with the United States and other advanced Western economies (see Appendix Figure A.2 for the case of geopolitical distance from the United States). Our results, therefore, confirm that the decoupling of value chains may not materialize in a globalized world. The United States could well remain indirectly connected to China through its trade and GVC linkages with third-countries that are geopolitically distant from China but are closer to the United States.

Figure 4: The different effects of UN voting differences on US vs Chinese FDI



Notes: The y axes measure the effect of UN voting differences on FDI, both greenfield (left) and M&As (center), as well as the stock of affiliates (right), over time. These are Poisson Pseudo Maximum Likelihood (PPML) estimates from a gravity model, controlling for destination GDP, geographic distance, shared borders, common language, and common colonial empire.

We next test whether the divergent patterns observed for the United States and China are unique to the two countries or if it could be generalized more broadly. To this end, we next estimate our gravity model for each of the top 20 FDI origin countries to identify the countries for which geopolitical distance mattered more in recent years, during 2020-2022. The results are shown in Figure 5. The United States, Canada and the United Kingdom are among the countries whose companies are most sensitive to UN

voting differences (Panel (a), Figure 5). This is true for the three measures of foreign activity – greenfield projects, M&As, and affiliates. Said differently, friendshoring appears as most important for these countries. By comparison, companies from China, India, Singapore, Japan, and the United Arab Emirates have invested more, not less, in countries that are not geopolitically aligned, or "friends".

Exploring other measures of geopolitical fragmentation, we note the effect of below the median liberal democracy index on FDI from companies in countries with above median LDI in Panel (b) of Figure 5. Several of the top 20 origin countries are negatively affected by such differences in governance in recent years, but the countries most affected by all three measures of foreign activity include Spain and Sweden (Panel b). The companies from Japan and the Republic of Korea, on the other hand, consistently do not appear to be deterred in their foreign investment decisions to countries with below the median LDI.

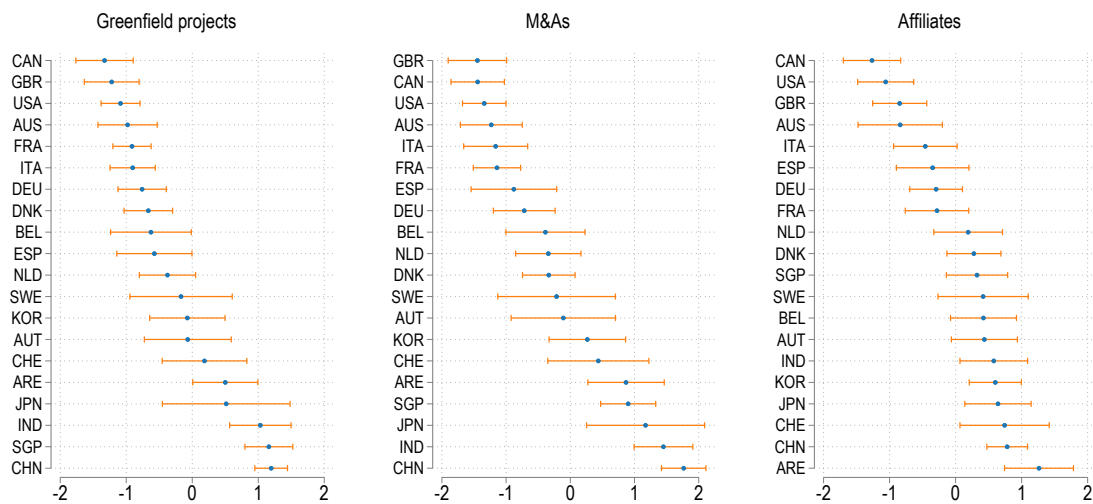
Geopolitical distance, measured as unfavorable public opinion, seems to affect FDI flows from firms in the United Kingdom, Denmark, Netherlands, and India, while companies in Australia and the Republic of Korea are not affected (Panel (c), Figure 5). Interestingly, foreign affiliate activity of US multinationals is also not deterred by this measure of geopolitical fragmentation, suggesting that public opinion in the United States may not play a decisive role in shaping firms' investment decisions abroad.

The effect of differences in bloc alignments matters for greenfield FDI for several of the top 20 origin countries, but most importantly for the United States, Australia and Sweden companies (Panel (d), Figure 5). Most strikingly, companies from China are found to invest more, not less, in countries outside their geopolitical bloc. This is true for greenfield, brownfield and the stock of affiliates. When using alignment with blocs as a measure of geopolitical difference, FDI from companies in the United Arab Emirates are also not affected. Overall, our results suggest that friendshoring might be happening in certain countries, but these forces are not affecting the destination of outward FDI from several countries in East Asia. These results are consistent across

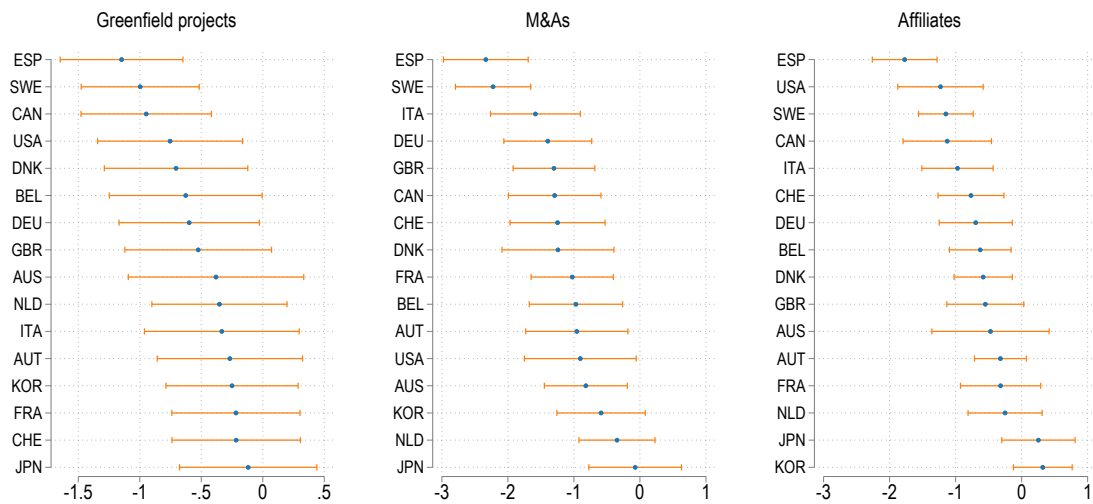
the three types of FDI data, and the alternative measures of geopolitical distance.

Figure 5: The effect of geopolitics on FDI, Top 20 FDI origins

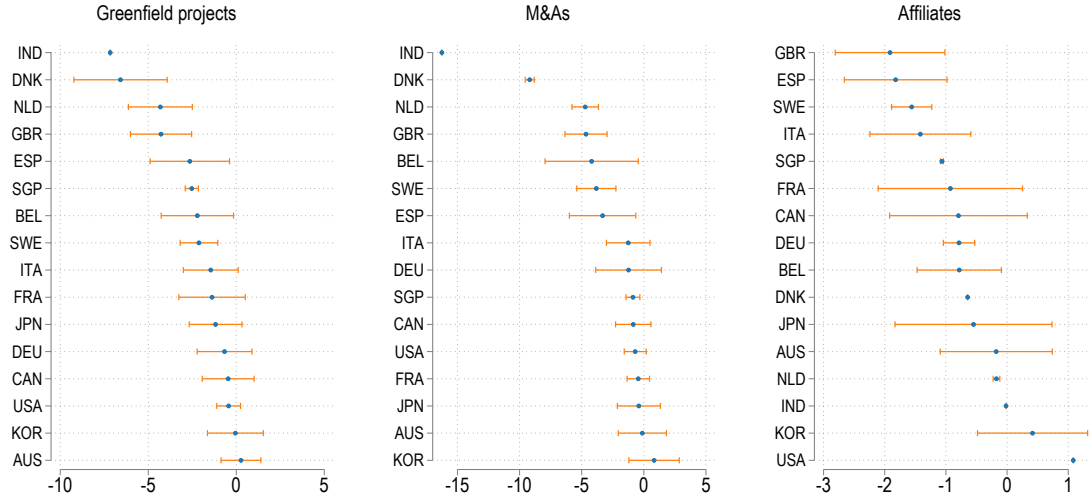
(a) Similarity in UN voting



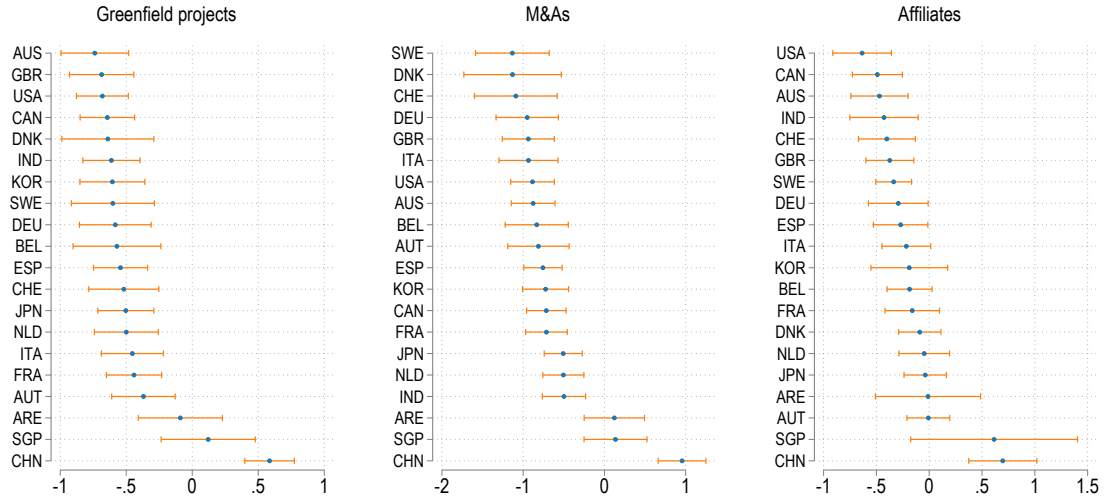
(b) Differences in bilateral liberal democracy index



(c) Effect of unfavorable public opinion



(d) Effect of bloc alignment differences



Notes: The coefficients (dots) measure the effect of the different geopolitical alignment measures on different countries' outward FDI, whether greenfield (left), M&As (center), or affiliates (left). Capped bars are 95% confidence intervals. These are estimates from gravity models, controlling for geographic distance, shared borders, common language, common colonial empire, and destination GDP.

3.2.2 Sector attributes

Several factors have contributed to the changing perspectives on the consequences of offshoring. These include – trade frictions arising from strategic competition between major trade partners and the concerns about the resilience of supply chain in the face of global shocks after the COVID-19 pandemic and the Russian invasion of Ukraine. To guard against these changes, countries have argued for adopting inward-looking responses in the form of trade and FDI barriers in ‘strategic’ sectors as well as restrictions on inward and outward FDI in sensitive areas (Aiyar et al., 2023). For example, The United States and the European Union have sought to diversify their supply chains with critical and strategic raw materials, aiming to reduce reliance on China through strategic partnerships (EU) or domestic production incentives (US Inflation Reduction Act of 2022) (House, 2021; Commission, 2023). More broadly, this is evidenced in the significant increase in the number of times "national security" concerns are mentioned in country reports (Aiyar et al., 2023).

Descriptive evidence in Alfaro and Chor (2023) shows that outbound manufacturing FDI from the United States has dropped in specific sectors such as automobiles, semiconductors, and electronics. To understand if the impact of geopolitical differences were uniquely observed in specific sectors, we present results from gravity estimations in three sector groups: (i) strategic sectors (e.g. aerospace, biotechnology, semiconductors);⁶ (ii) sectors with high intensity of participation in GVCs, that is, those with relatively higher two-way trade in parts and components and hence are more vulnerable to global shocks such as the pandemic or regional/global conflicts;⁷ and (iii) sectors

⁶Specifically, we follow Aiyar et al. (2024) and Freund et al. (2023) to define strategic sectors as: Aerospace, Automotive OEM and components, Biotechnology, Business machines & equipment, Chemicals, Communications, Medical devices, Pharmaceuticals, Semiconductors, Software & IT services, Space & defence.

⁷Sectors with strong backward and forward international linkages in the 4th quantile of the distribution these linkages are quantified respectively, as the share of imported inputs in the sector’s global exports and the share of value added produced and exported by a country and embodied in the exports of the direct importer, aggregated for all countries. Both indicators are obtained from the Bank (2020) World Development Report and based on the OECD TIVA. See Constantinescu et al. (2022) for further definition and sector details.

that are contract-intensive, that is, those with above the median share of differentiated inputs and, therefore, require a relatively larger relationship-specific investment (See [Nunn \(2007\)](#) for details on the definition and sources). These sectors are also more vulnerable to trade policy shocks as some of the investments are sunk and withdrawing them can lead to large losses. The results on these sectors are compared relative to the reference sector, and the average effect in all sectors.

Gravity estimations for these three sector groups along with aggregate estimates are presented in Appendix Figure [A.3](#). Contrary to the popular narrative that "geoeconomic fragmentation"⁸ is motivated by national security or 'strategic' concerns, our analysis suggests that friendshoring forces are not significantly stronger for strategic sectors, relative to GVC-intensive or contract-intensive sectors. In fact, the impacts of geopolitical differences in these three groups of sectors are comparable, on average, to all sectors. Our finding provides evidence for the hypothesis in [Aiyar et al. \(2023\)](#) that although geoeconomic fragmentation is advocated for enhancing resilience in techno-strategic industries, inward-looking policy changes may not solely reflect strategic considerations.

4 Conclusions

Using three datasets on global FDI, covering greenfield projects, brownfield FDI, that is, M&As, and number of affiliates, and four measures of countries' geopolitical alignment or *friendship*, we find an increasing role for political alignment or differences in shaping companies' location decisions. Geopolitical differences, measured by UN voting, bloc alignment, the liberal democracy index, and unfavorable public opinion, have a larger negative impact on foreign investments today than they did 10 years ago. The effects were accentuated in 2020-2022. We also find that the recent friendshoring trends primarily involve companies from advanced Western economies, while those in

⁸A term coined by [Aiyar et al. \(2023\)](#).

East Asian countries show a contrasting trend of increasing investments in geographically distant nations. Lastly, our findings suggest that friendshoring is not limited to strategic sectors or those heavily involved in GVCs. The impacts of geopolitical differences on foreign investments observed in strategic, GVC-intensive, and contract-intensive sectors are comparable to the overall average effect, suggesting that economic fragmentation may not solely reflect national security or strategic concerns.

As companies engage in friendshoring activities, primarily investing in countries with similar geopolitical alignments could potentially lead to the formation of economic blocs. This extension of fragmentation can hinder global economic integration and cooperation, potentially exacerbating geopolitical tensions. Importantly, geo-economic fragmentation may also trigger countries to adopt industrial policies, as observed in a recent surge in protectionist measures, and add to the rising fragmentation of global value chains. This would reduce efficiency and increase costs for firms operating across borders. Navigating the current geopolitical forces may, therefore, require careful consideration of the trade-offs between protecting domestic industries and maintaining open and interconnected global markets.

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A Appendix

Table A.1. Summary Statistics

	Obs.	Mean	Std. Dev.	Min.	25%	75%	Max.
Projects	401998	0.76	6.95	0	0	0	538
M&As	401998	0.49	5.82	0	0	0	679
Affiliates	46811	70.8	420.2	0	1	25	26713
UN voting differences	361999	1.01	0.78	0	0.32	1.56	4.82
Pew unfavorable opinion	5823	2.47	0.46	1.13	2.14	2.77	3.94
Bloc alignment distance	252815	1.72	1.34	0	1	3	4
Above-to-below median LDI	401998	0.25	0.43	0	0	0	1
Distance (ln)	396441	8.66	0.82	2.08	8.26	9.24	9.90
Common border	396441	0.020	0.14	0	0	0	1
Common language	386113	0.12	0.32	0	0	0	1
Common colonizer	386113	0.081	0.27	0	0	0	1

Table A.2. The effect of UN Voting differences on FDI

	(1)	(2)	(3)
	Greenfield	M&As	Affiliates
Geopolitical distance × 2003	-0.064 (0.043)	-0.211*** (0.058)	
Geopolitical distance × 2004	-0.031 (0.039)	-0.203*** (0.054)	
Geopolitical distance × 2005	-0.094** (0.038)	-0.206*** (0.055)	
Geopolitical distance × 2006	-0.130*** (0.033)	-0.106** (0.048)	
Geopolitical distance × 2007	-0.020 (0.039)	-0.032 (0.044)	
Geopolitical distance × 2008	-0.027 (0.030)	-0.008 (0.037)	
Geopolitical distance × 2009	-0.006 (0.032)	-0.032 (0.034)	
Geopolitical distance × 2010	-0.013 (0.025)	-0.079** (0.033)	-0.008 (0.011)
Geopolitical distance × 2011	-	-	-
Geopolitical distance × 2012	-0.056*** (0.021)	-0.011 (0.028)	0.009 (0.009)
Geopolitical distance × 2013	-0.012 (0.023)	-0.048 (0.030)	-0.007 (0.009)
Geopolitical distance × 2014	0.001 (0.025)	-0.022 (0.033)	0.017 (0.013)
Geopolitical distance × 2015	-0.057** (0.028)	-0.078** (0.037)	-0.013 (0.014)
Geopolitical distance × 2016	-0.041 (0.026)	-0.060 (0.038)	-0.015 (0.016)
Geopolitical distance × 2017	-0.035 (0.028)	-0.102*** (0.039)	-0.041** (0.018)
Geopolitical distance × 2018	-0.054* (0.029)	-0.129*** (0.039)	-0.042** (0.019)
Geopolitical distance × 2019	-0.084*** (0.029)	-0.167*** (0.042)	-0.072*** (0.020)
Geopolitical distance × 2020	-0.108*** (0.030)	-0.209*** (0.045)	-0.081*** (0.022)
Geopolitical distance × 2021	-0.062* (0.033)	-0.186*** (0.050)	-0.068*** (0.020)
Geopolitical distance × 2022	-0.067* (0.039)	-0.208*** (0.048)	
Distance (ln(km))	-0.464*** (0.029)	-0.654*** (0.034)	-0.512*** (0.035)
1 = Origin and destination share a border	0.070 (0.077)	0.086 (0.101)	0.346*** (0.102)
1 = Common official or primary language	0.808*** (0.057)	0.868*** (0.072)	0.660*** (0.095)
1 = Common colonizer post 1945	0.661*** (0.123)	0.403** (0.179)	0.523*** (0.196)
N	348620	304713	43742

Notes: Estimates from a gravity model, controlling for origin and destination fixed effects. Standard errors clustered by country pairs in parenthesis.

Table A.3. The effect of bilateral differences in LDI on FDI

	(1)	(2)	(3)
	Greenfield	M&As	Affiliates
Below median LDI × 2003	0.228** (0.105)	-0.364* (0.192)	
Below median LDI × 2004	0.223* (0.123)	-0.173 (0.210)	
Below median LDI × 2005	0.175** (0.084)	-0.244 (0.202)	
Below median LDI × 2006	0.046 (0.082)	-0.153 (0.189)	
Below median LDI × 2007	0.057 (0.065)	-0.249 (0.195)	
Below median LDI × 2008	0.186*** (0.071)	-0.158 (0.167)	
Below median LDI × 2009	0.150** (0.070)	0.029 (0.095)	
Below median LDI × 2010	0.059 (0.059)	0.183** (0.072)	0.124 (0.082)
Below median LDI × 2011	- -	- -	- -
Below median LDI × 2012	-0.096* (0.051)	-0.013 (0.068)	0.015 (0.055)
Below median LDI × 2013	-0.023 (0.065)	0.010 (0.104)	0.118 (0.086)
Below median LDI × 2014	-0.106 (0.072)	-0.116 (0.105)	0.154* (0.086)
Below median LDI × 2015	-0.287*** (0.078)	-0.334*** (0.103)	0.063 (0.087)
Below median LDI × 2016	-0.260*** (0.081)	-0.339*** (0.130)	0.114 (0.094)
Below median LDI × 2017	-0.315*** (0.081)	-0.382*** (0.135)	0.081 (0.086)
Below median LDI × 2018	-0.292*** (0.080)	-0.427*** (0.165)	0.100 (0.085)
Below median LDI × 2019	-0.145 (0.125)	-0.121 (0.225)	0.211* (0.119)
Below median LDI × 2020	-0.426*** (0.136)	-0.188 (0.220)	0.111 (0.125)
Below median LDI × 2021	-0.452*** (0.145)	-0.310 (0.256)	0.179 (0.118)
Distance (ln(km))	-0.476*** (0.066)	-0.686*** (0.065)	-0.566*** (0.078)
1 = Origin and destination share a border	0.922*** (0.213)	1.168*** (0.202)	0.475 (0.354)
1 = Common official or primary language	0.251 (0.204)	0.427** (0.200)	0.458 (0.389)
1 = Common colonizer post 1945	-0.176 (0.273)	-0.511 (0.395)	-0.138 (0.346)
Destination GDP (ln)	0.306*** (0.025)	0.340*** (0.035)	0.249*** (0.020)
N	323054	318389	34476

Notes: Estimates from a gravity model, controlling for origin fixed effects. Standard errors clustered by country pairs in parenthesis.

Table A.4. The effect of unfavaroble public opnion on FDI

	(1)	(2)	(3)
	Greenfield	M&As	Affiliates
Unfavorability × 2003	0.839*** (0.210)	-0.059 (0.376)	
Unfavorability × 2004	0.544*** (0.206)	-0.107 (0.289)	
Unfavorability × 2005	0.177 (0.216)	-0.194 (0.306)	
Unfavorability × 2006	-0.100 (0.212)	-0.312 (0.280)	
Unfavorability × 2007	-0.078 (0.189)	-0.197 (0.328)	
Unfavorability × 2008	-0.183 (0.167)	-0.521* (0.294)	
Unfavorability × 2009	-0.248 (0.155)	-0.553* (0.308)	
Unfavorability × 2010	-0.084 (0.159)	-0.405 (0.260)	-0.035 (0.089)
Unfavorability × 2011	-	-	-
Unfavorability × 2012	0.086 (0.127)	0.011 (0.233)	0.371** (0.160)
Unfavorability × 2013	-0.031 (0.156)	-0.055 (0.274)	0.389** (0.172)
Unfavorability × 2014	-0.223 (0.138)	0.061 (0.256)	0.404** (0.171)
Unfavorability × 2015	-0.338** (0.158)	-0.310 (0.258)	0.307* (0.165)
Unfavorability × 2016	-0.448** (0.188)	-0.332 (0.239)	0.308* (0.176)
Unfavorability × 2017	-0.149 (0.195)	-0.135 (0.258)	0.133 (0.155)
Unfavorability × 2018	-0.225 (0.165)	-0.052 (0.253)	-0.008 (0.151)
Unfavorability × 2019	-0.390** (0.188)	-0.593 (0.367)	-0.021 (0.202)
Unfavorability × 2020	-0.105 (0.213)	-0.416 (0.331)	0.058 (0.216)
Unfavorability × 2021	-0.035 (0.248)	-0.656** (0.296)	-0.083 (0.239)
Unfavorability × 2022	-0.756** (0.327)	-1.185*** (0.323)	
Distance (ln(km))	-0.306*** (0.022)	-0.516*** (0.035)	-0.516*** (0.036)
1 = Origin and destination share a border	0.087 (0.081)	-0.092 (0.148)	0.124* (0.072)
1 = Common official or primary language	0.602*** (0.058)	0.798*** (0.079)	0.885*** (0.082)
1 = Common colonizer post 1945	0.795*** (0.190)	0.969*** (0.259)	0.872*** (0.243)
N	4900	4253	2091

Notes: Estimates from a gravity model, controlling for origin and destination fixed effects. Standard errors clustered by country pairs in parenthesis.

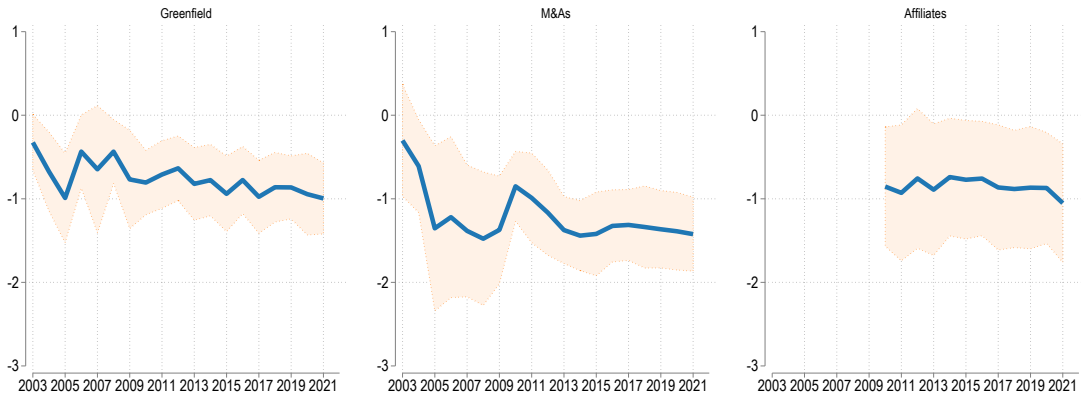
Table A.5. The effect of bloc alignment on FDI

	(1)	(2)	(3)
	Greenfield	M&As	Affiliates
Alignment distance × 2003	-0.005 (0.040)	-0.087 (0.072)	
Alignment distance × 2004	-0.012 (0.036)	-0.057 (0.070)	
Alignment distance × 2005	-0.052 (0.035)	-0.109 (0.072)	
Alignment distance × 2006	-0.101*** (0.029)	-0.017 (0.062)	
Alignment distance × 2007	-0.038 (0.031)	-0.030 (0.061)	
Alignment distance × 2008	-0.036 (0.029)	0.032 (0.054)	
Alignment distance × 2009	-0.035 (0.035)	0.003 (0.032)	
Alignment distance × 2010	-0.032 (0.028)	-0.059* (0.031)	-0.013*** (0.004)
Alignment distance × 2011	-	-	-
Alignment distance × 2012	-0.035 (0.024)	-0.022 (0.031)	0.005* (0.003)
Alignment distance × 2013	-0.007 (0.027)	-0.037 (0.033)	0.010* (0.005)
Alignment distance × 2014	-0.039 (0.029)	0.001 (0.033)	0.014* (0.008)
Alignment distance × 2015	-0.074** (0.030)	-0.084** (0.038)	0.015* (0.009)
Alignment distance × 2016	-0.066** (0.029)	-0.066 (0.041)	0.011 (0.010)
Alignment distance × 2017	-0.062** (0.028)	-0.123*** (0.042)	0.005 (0.011)
Alignment distance × 2018	-0.061** (0.027)	-0.063 (0.054)	0.002 (0.012)
Alignment distance × 2019	-0.038 (0.029)	-0.107* (0.057)	0.000 (0.013)
Alignment distance × 2020	-0.073** (0.031)	-0.121* (0.062)	-0.002 (0.014)
Alignment distance × 2021	-0.073** (0.032)	-0.148** (0.059)	-0.006 (0.014)
Alignment distance × 2022	-0.056 (0.035)	-0.140** (0.064)	
Distance (ln(km))	-0.495*** (0.035)	-0.620*** (0.039)	-0.505*** (0.046)
1 = Origin and destination share a border	-0.001 (0.084)	0.107 (0.108)	0.349*** (0.113)
1 = Common official or primary language	0.880*** (0.058)	0.940*** (0.076)	0.725*** (0.109)
1 = Common colonizer post 1945	0.684*** (0.136)	0.256 (0.239)	0.723* (0.401)
N	232776	198708	34410

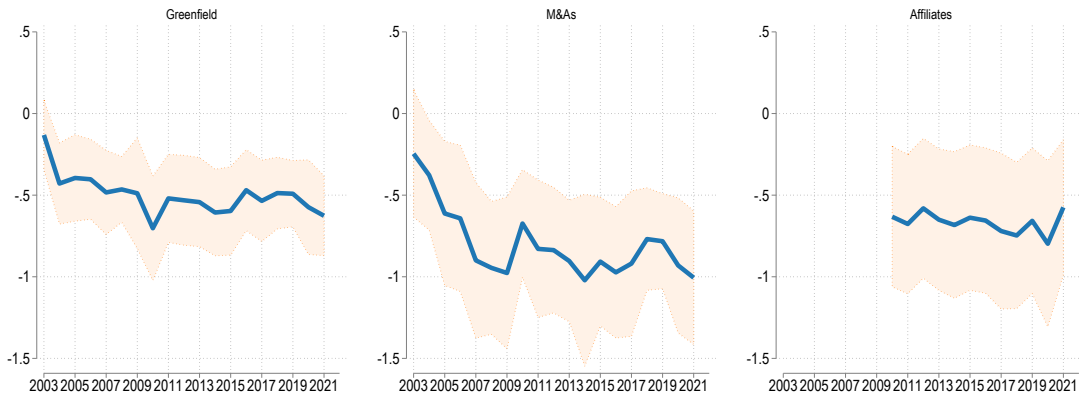
Notes: Estimates from a gravity model, controlling for origin and destination fixed effects. Standard errors clustered by country pairs in parentheses.

Figure A.1: The effects of geopolitical distance to the US on Chinese outward FDI

(a) Effect of UN voting differences with the US



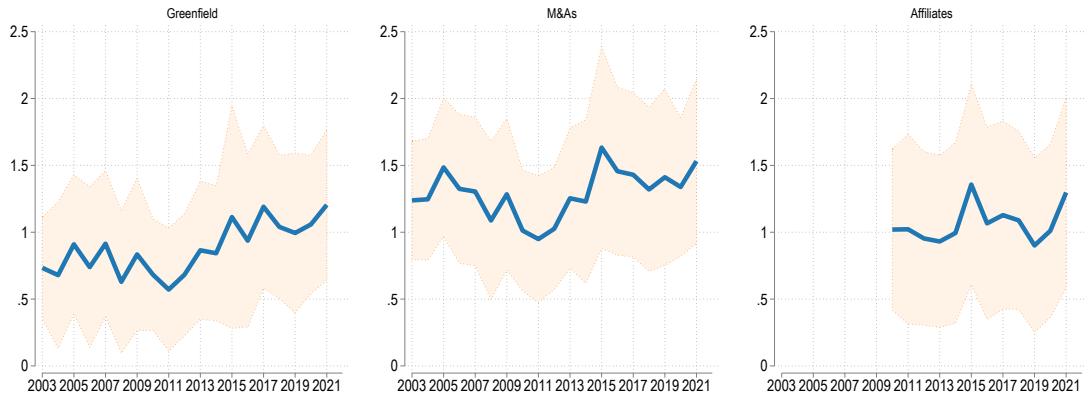
(b) Effect of bloc alignment differences with the US



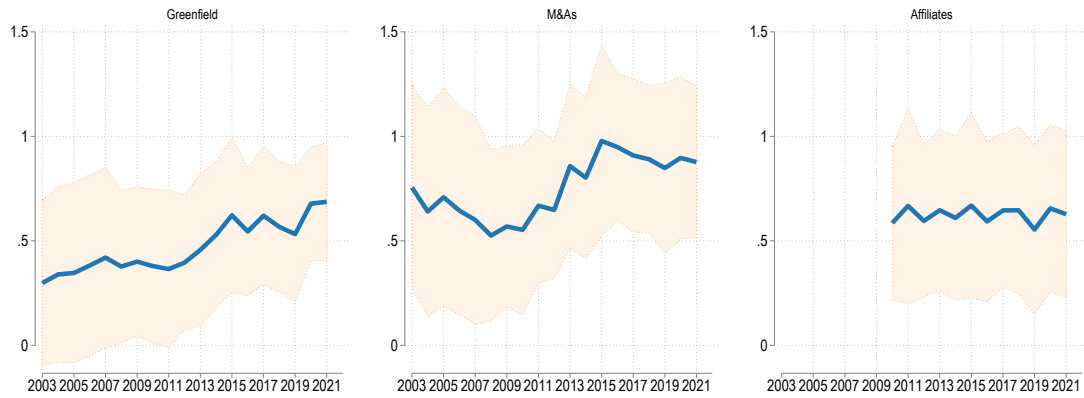
Notes: The y axes measure the effect of UN voting differences (or geopolitical group distance) on FDI, both greenfield (left) and M&As (center), as well as the stock of affiliates (right), over time. These are PPML estimates from a gravity model, controlling for destination GDP, geographic distance, shared borders, common language, and common colonial empire.

Figure A.2: The effects of geopolitical distance to China on US outward FDI

(a) Effect of UN voting differences with China



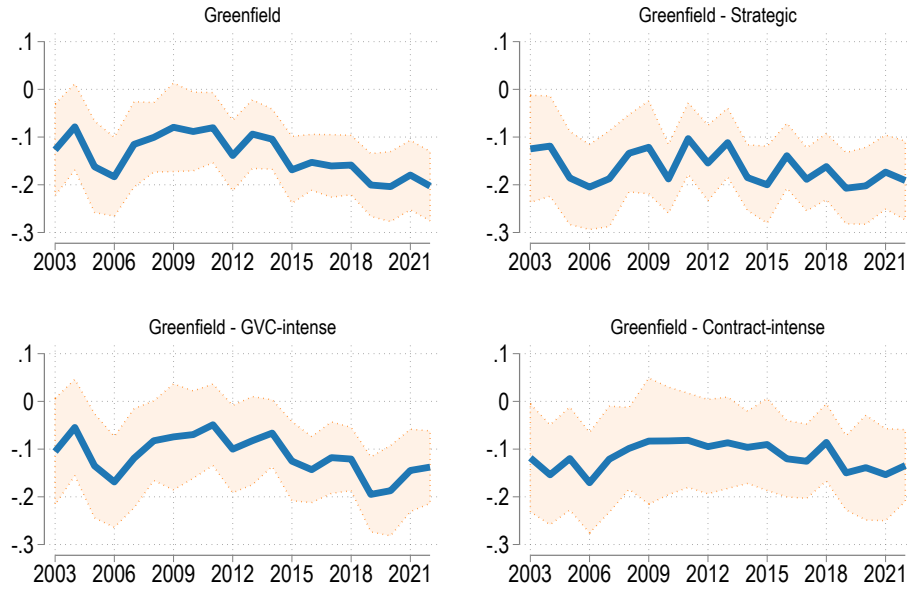
(b) Effect of bloc alignment differences with China



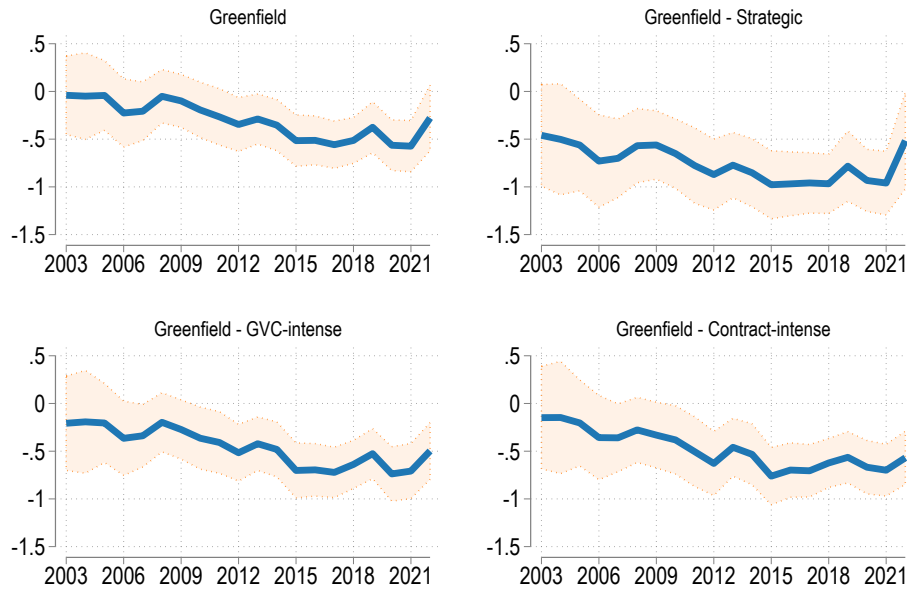
Notes: The y axes measure the effect of UN voting differences (or geopolitical group distance) on FDI, both greenfield (left) and M&As (center), as well as the stock of affiliates (right), over time. These are PPML estimates from a gravity model, controlling for destination GDP, geographic distance, shared borders, common language, and common colonial empire.

Figure A.3: The effect of *lack of geopolitical alignment* on FDI

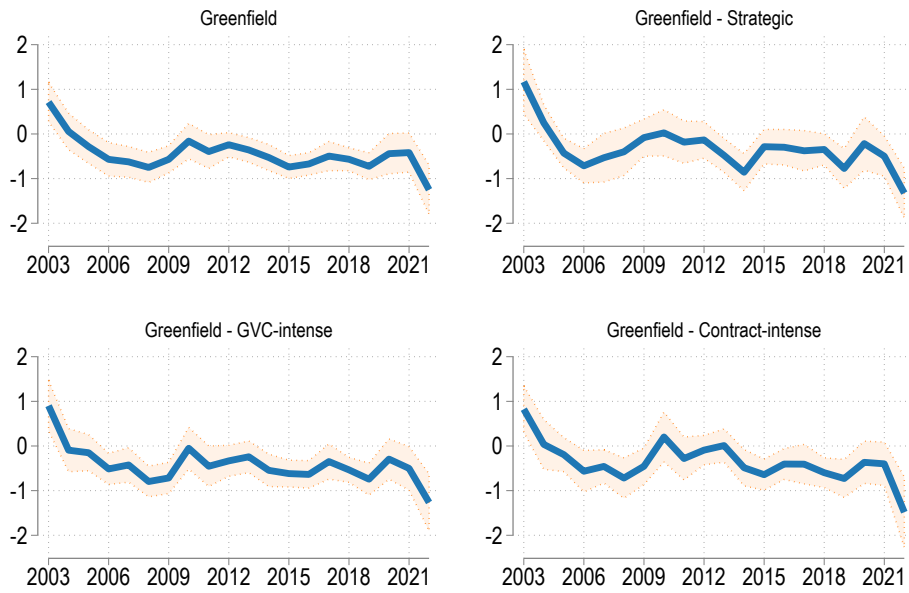
(a) Effect of UN voting distance



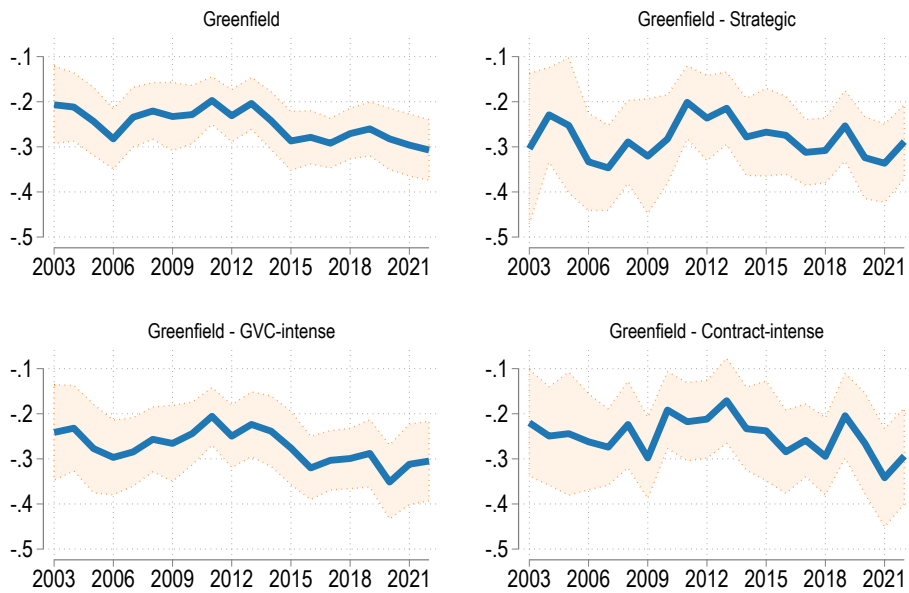
(b) Effect of bilateral differences in liberal democracy index



(c) Effect of unfavorable public opinion



(d) Effect of bloc alignment differences



Notes: The y axes measure the effect of the different measures of geopolitical alignment on greenfield FDI in different sectors, over time. These are estimates from a gravity model, controlling for origin and destination fixed effects as well as geographic distance, shared borders, common language, and common colonial empire.