International Power

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Abstract

An interconnected world increases economic efficiency while giving certain countries leverage over others. We aim to describe and understand international power stemming from trade. Using an illustrative model of trade with possibilities of bilateral disputes and ex-post hold-ups, we highlight that bilateral asymmetry in import dependence can be a source of power towards one another. We construct the model-implied measure of international power — asymmetric bilateral import dependence, weighted inversely by sectoral trade elasticities — across country pairs over the past 20 years. Combining this measure with comprehensive data on bilateral engagement events and a high-frequency measure of bilateral geopolitical relationships, we examine the consequences and strategic causes of international power. We show two main empirical results. First, increases in international power between countries — which raise the credibility of threats of trade disruptions — induce more bilateral engagement and negotiations. Second, worsened geopolitical relationships — in anticipation of future disputes — prompt countries to build up greater international power through adjusting trade activities.

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1 Introduction

International power is a country's capacity to shape outcomes in the international system by influencing other states' behavior or by structuring the choices available to them.[1] How do countries exert power over one another? International power traditionally arises from military might. During peacetime, however, commerce and trade can provide alternative methods of coercion. Writing toward the end of World War II, Hirschman (1945) argues that trade relations can create relationships of dependence, influence, and even domination. Indeed, every sovereign nation wields this form of power: through control of its borders and authority over its citizens and firms, it can interrupt — or threaten to interrupt — its own exports and imports.

There are many examples of countries wielding power from trade to achieve geopolitical goals. For example, during the 1973 Yom Kippur War, Saudi Arabia and other Arab oil-producing nations imposed an oil embargo in response to Western support for Israel — most notably targeting the United States. At the time, the US relied heavily on oil imports from OPEC member countries, importing nearly 35% of its oil from them. Saudi Arabia and the other Arab oil producers collectively accounted for about 52% of global oil production. More recently, in 2010, amid a territorial dispute over fishing rights, China halted exports of critical minerals to Japan, which are essential for hybrid cars, wind turbines, and guided missiles. Japan relied on China for about 87% of its critical mineral imports, and China's near-monopoly — controlling 97% of global production and exports — left Japan with virtually no viable alternatives, at least in the short run.[2]

In this paper, we aim to describe and understand international power that stems from trade. We develop an illustrative model to highlight that bilateral asymmetry in import dependence can be a source of power towards one another. We construct the model-implied measure of international power across country pairs between 2001 and 2021, and empirically examine the consequences and strategic considerations of international power through trade. We ask: *(i)* does international power lead to more bilateral engagement and negotiations? And *(ii)* do shifts in geopolitical relationships drive trade adjustments aimed at building power?

We begin with an illustrative model that combines trade and geopolitical tensions.

1. In international relations scholarship, this is often described as the leverage states hold over one another; see, for example, Keohane and Nye (1977).

2. Regarding the oil embargo in 1973, see, among others, Corbett (2013); *Rocky Mountain Institute*, source: https://tinyurl.com/mw5srmcs; *Time Magazine*, source: https://tinyurl.com/2wzbbp58. Regarding the critical mineral export ban in 2010, see, among others, *New York Times*, source: https://tinyurl.com/yphpfb9k.

In an *ex-ante* stage, countries make plans for international trade. *Ex-post*, bilateral disputes may arise, during which one country (the coercer) can threaten to disrupt exports to another (the target). Because it is ex-post difficult for the target country to alter import plans made ex-ante and substitute towards other trade partners, the coercer can leverage power stemming from import dependence to extract political rents from the target. The coercer's expected leverage reflects the target's share of imports from the coercer, averaged across sectors and weighted inversely by each sector's trade elasticity. The target can threaten to retaliate, and thus the degree of asymmetric import dependence between the country pair determines the negotiation outcomes.[3] Anticipating the ex-post negotiation and hold-up, a government valuing domestic welfare has incentives to enact industrial and/or trade policies to reduce the ex-ante dependence on countries that may be adversarial. These protectionist incentives are stronger against adversaries with whom trade is more asymmetric, especially in goods with low trade elasticities (i.e., those that are harder to substitute away from). The model, while stylized, captures the two primary sources of power that Hirschman (1945) proposes: asymmetry in dependence and costs of trade disruptions. The model yields a measure of international power based on asymmetric import dependence, and proposes two core predictions: shocks to power would affect bilateral engagement and negotiations, and shocks to geopolitical alignment would affect power build-up.

We next construct an empirical measure of international power guided by the model. The measure aims to capture asymmetric import dependence across country pairs. Specifically, our baseline measure defines one country n's power over another country i in year t as the difference between n's import share from i and i's import share from n in each sector, averaged across sectors and inversely weighted by each sector's trade elasticities. Through the lens of the model, this measure of international power captures the expected surplus country n can extract from country i through the threat of trade disruptions. The measure reflects the asymmetry in economic sizes and total bilateral trade flows between pairs of countries, but is not solely determined by these factors. Rather, it captures the meaningful variation resulting from the sectoral composition of trade flows. For example, Taiwan wields significant power over many countries not primarily due to its total export volume or overall economic size, but because of its dominance in key sectors like semiconductors. Similarly, Brazil's vulnerability to China stems not mainly from their

3. The international power we study captures the threats of sanctions and potential damage from trade disruptions, rather than realized sanctions and their geopolitical impact. Sanctions, while they do occur, are rare: during our sample period, only 668 (5.3%) of the country pairs have ever imposed sanctions on each other. See Bergeijk (2021) for a review of the literature on sanctions; see, for example, Egorov et al. (2025) and Itskhoki and Ribakova (2024) on sanctions in the context of recent Russo-Ukrainian War).

relative economic size difference, but from Brazil's dependence on Chinese raw minerals that are difficult to substitute. We also develop several variants of the power measure and show that they are highly correlated with the baseline measure.

Having established a measurement of international power, we then examine its consequences. Our model predicts that as power differentials increase between countries, their diplomatic engagement and negotiations intensify due to heightened threats and bargaining stakes. We measure bilateral engagement and negotiations across all country pairs between 2001 and 2021 using the Integrated Crisis Early Warning System (ICEWS) dataset. We focus on 19 million bilateral events ranging from countries expressing intent to meet or negotiate, appealing for economic cooperation, expressing intent to accept mediation, and imposing military threats or aggression — most of these engagement events are *not* about disputes or bargaining over trade *per se*. We find that, controlling for country-pair fixed effects and year fixed effects, bilateral engagement and negotiation increase substantially and significantly when the power asymmetry between the pair rises. On average, a one standard deviation increase in power between two countries raises their bilateral engagement and negotiation by 38.4% in the subsequent year (or 18.8% when evaluated at the median). Moreover, we construct a shift-share instrument that isolates power changes based on importers' pre-2000 sectoral import composition and exporters' subsequent global export patterns across sectors (excluding the specific importer). We show that the predicted power increases lead to greater engagement and negotiation, suggesting the relationship is unlikely to be driven by reverse causality, non-trade-related factors affecting engagement, or strategic trade manipulation targeting specific countries. These results are robust to a range of alternative empirical specifications, power measures, and measures of bilateral engagement.

We proceed to examine a key prediction about how international power stimulates bilateral engagement and negotiation. Our model highlights that import dependence in sectors with low trade elasticities — where goods from different origins are less substitutable — creates greater leverage, and, accordingly, the asymmetric dependence in these sectors generates greater power. We estimate the relationships between sector-specific power (i.e., asymmetry in sectoral import dependence) and negotiation, one sector at a time. We find that power stemming from certain sectors — chemical products, optical medical instruments, and machinery electrical equipment, in particular — has a stronger influence on engagement and negotiation. In fact, the impact of sector-specific power between two countries on their engagement and negotiation is substantially higher if the sector exhibits low levels of trade elasticity, if it has high production complexity, or if it contains a high share of goods designated as "critical goods" by the International Trade

Administration. These findings support the idea that the potential costs of trade disruptions significantly influence international power dynamics.

We next investigate the strategic causes of international power. Our model shows that countries have incentives to implement policies and adjust trade activities in order to build up power towards those countries that become more adversarial, in anticipation of an increased arrival rate of potential trade disruptions due to shifts in geopolitical alignment. We measure geopolitical alignment by constructing a spatial model of geopolitical proximity by combining annual Polity scores and Gallup Poll data on sentiments toward other countries. This allows us to capture alignment across all pairs of countries and with high-frequency changes.

To identify how geopolitical alignment changes affect power build-up, we isolate shifts in bilateral alignment between countries A and B following A's domestic electoral turnover in close elections. We examine how B's power over A changes in response to these bilateral alignment shifts. For example, this dynamic was evident in how China-US relations soured while Russia-US relations warmed after the electoral turnover in the US as a result of President Trump's 2016 election victory. This focus on B's power over A resolves two empirical challenges. First, while electoral turnover in A may alter its diplomatic policies and hence trajectories of bilateral relationships, it is arguably independent of B's domestic politics and beyond B's control regarding its policies toward A. Second, because A's electoral turnover shifts its alignment with different countries in opposite directions depending on prior patterns, a systematic response by A requires offsetting and opposite policy changes across many partners; by contrast, B can respond by adjusting targeted bilateral policies toward A alone, which is more explicit and feasible. This eliminates ambiguity in predicting the net change in power following geopolitical alignment shifts. We observe a strong first stage: close electoral turnovers in A sharply reverse pre-election trends in its geopolitical alignment with other countries in the world. Importantly, bilateral economic, political, and social conditions do *not* predict these close electoral outcomes.

We find that in response to bilateral alignment that worsens (improves) as a result of others' domestic electoral turnover, countries increase (decrease) their power towards a partner during the years following the election. On average, a one standard deviation reduction in geopolitical alignment after A's electoral turnover would move B's power over A from median to the 85th percentile. This suggests that trade activities are (at least in part) strategic — countries use trade dependence to maneuver risks and opportunities from changing geopolitical alignments. When decomposing whether these power changes stem from B's exports or imports with A after A's electoral turnover, we find larger adjustments in imports: when bilateral relations become adversarial, B reduces imports from A, thus defensively limiting A's (exporter) power over B. Analysis of enacted bilateral trade policies recorded by the Global Trade Alert shows that while B implements more restrictive import policies against A (consistent with the patterns on changes in power), A has shown minimal policy response toward B (confirming the identification strategy).

Taken together, we show in this paper that international power can indeed arise from asymmetric import dependence: such power affects bilateral negotiations and engagement, and its accumulation is geopolitically strategic. Our findings highlight the trade-offs countries face in their trading relationships. While trade creates economic benefits through exchange, it also carries geopolitical costs, as trade partners can exploit dependencies for political leverage. An interconnected world designed for maximum economic benefit may look very different from one structured around power dynamics between countries. Though trade's economic benefits are positive-sum across countries, the accumulation of power can be negative-sum. As countries weigh economic gains against geopolitical risks from trade dependency, adversarial relationships between countries tend to drive greater power accumulation — often sacrificing economic efficiency both at home and around the world.

This paper relates to several strands of literature. First, it contributes empirical evidence to a primarily theoretical literature in economics on how countries exert power through trade and economic dependence.[4] Hirschman (1945) offers a seminal work on conceptualizing trade not necessarily as maximizing economic gains, but as a source of power across countries. McLaren (1997) demonstrates theoretically how ex-ante irreversible investments can generate bargaining power through ex-post holdup. More recently, Farrell and Newman (2019) describes a framework of weaponized interdependence, examining how trade and economic exchanges create strategic coercion between countries; Herrera, Morelli, and Nunnari (2022) models international power derived from countries' domestic institutional setups (though these institutional features are not microfounded); Clayton, Maggiori, and Schreger (2025) provides a theoretical framework of geoeconomics, analyzing how governments use their countries' economic strength from existing financial and trade relationships to achieve geopolitical and economic goals; Clayton, Maggiori, and Schreger (2024) extends the framework to study the implications of geoeconomic coercion, as well as countries' strategies to withstand power; Becko and O'Connor (2025) studies the optimal industrial and trade policies when countries antic-

4. See Mohr and Trebesch (2024) for an excellent review of the emerging literature on *geoeconomics*, of which trade is one important dimension.

ipate future geopolitical conflicts and the use of trade as leverage; and Becko, Grossman, and Helpman (2025) investigates optimal tariffs to influence geopolitical alignment. Our conceptual framework also closely relates to Thoenig (2023) and Mayer, Mejean, and Thoenig (2025), who integrate a quantitative trade model with geopolitical bargaining under the threat of war to understand trade structure and its implications for security. To the best of our knowledge, we provide the first empirical investigation into the consequences and causes of international power through trade exposure.[5] Our findings — asymmetric trade-based power triggers more negotiation, and such power is strategically built up in anticipation of upcoming diplomatic tensions — enrich the theoretical literature and highlight the value of endogenizing power in future empirical investigations. Beyond economics, our work contributes to the large literature of international relations that examines interdependence across countries.[6] Our paper enhances this literature by offering a precise, quantifiable definition of international power.[7]

Second, we join a small empirical literature in political economy that analyzes international relations. Much of this literature focuses on international influence through military threats (e.g., Gennaioli and Voth 2015, Herrera, Morelli, and Nunnari 2022), coordination around great powers' sphere of influence (Camboni and Porcellacchia 2024), foreign aid (e.g., Kuziemko and Werker 2006, Nunn and Qian 2014), or covert operations (Berger et al. 2013). We add to this literature the first systematic analysis of power derived from trade activities.[8] In so doing, we also contribute to the literature that studies how economic interdependence — particularly through trade — may influence countries' tendencies to enter conflicts (e.g., Martin, Mayer, and Thoenig 2008, Jackson and Nei 2015),[9]

5. This is distinct from, but complements, the *incidental* foreign influence of trade exposure, such as political repercussion of labor market consequences stemming from exposure to manufacturing exports from China (e.g., Autor et al. 2020).

6. While one cannot do justice to the vast literature of international relations due to space constraints, we note a few seminal works: Baldwin (1985) highlights the key principles of power and its analytical structure; Nye (2011) distinguishes between soft and hard power; and Blackwill and Harris (2016) outlines how various economic tools can achieve geopolitical aims.

7. We bridge two major approaches in international relations by connecting asymmetric trade dependence with bilateral engagement and negotiations — approaches that traditionally define power either through resources or behavioral outcomes. While we focus on trade as a source of international power, we acknowledge other important sources of international influence. In fact, our evidence suggests that trade-based power complements other forms of international influence, including military capacity, aid, and sovereign lending. However, the sources of international influence and the strategic interactions among its components merit further research.

8. By showing that diplomatic policies are influenced by trade power exposure, we also connect to the large literature in international relations that analyze factors that shape foreign policies (e.g., the realism vs. liberalism debate).

9. In contrast to these papers that investigate the direct relationship between trade and warfare, we consider trade and its disruption ("warfare" in the trade domain), hence posing a very different conceptual question.

and how conflict may affect trade relationships (e.g., Korovkin, Makarin, and Miyauchi 2024). We examine countries' engagement with each other more broadly — both peaceful and non-peaceful — and show that power derived from trade, above and beyond simple trade linkages and trade flows, substantially influences such engagement.[10]

Third, this paper connects to the literature that examines the interaction between foreign and domestic politics. Grossman and Helpman (1994) studies the role domestic lobbying played in shaping trade policies; Fearon (1994) models the escalation of international conflicts in order to serve domestic political purposes; Antràs and Miquel (2011) studies how foreign influence shapes trade policies.[11] Our work shows how domestic electoral turnover affects geopolitical alignment, which in turn influence other countries' (domestic) policies to adjust trade power. This demonstrates a key channel where domestic politics, diplomatic policies, and domestic policies that may shape international power co-determine and interact.

Finally, we hope the empirical measures that we construct complement existing efforts, and can be broadly applicable to other settings in order to advance the literature that studies international political economy and international relations. *[I.]* The bilateral power measure — complementing the bilateral "friends and enemies" measure of exposure to foreign productivity shocks, à la Kleinman, Liu, and Redding (2022) — provides an infrastructure where more complex factors can be incorporated in order to describe and understand countries' power exposure to one another. *[II.]* The bilateral engagement database that we compile and standardize provides a granular observation on international engagement, in particular extending beyond the tail events such as war and conflicts.[12] *[III.]* The bilateral geopolitical alignment measures that we build provide high-frequency, more nuanced variation than the predominant metrics used in the literature such as the autocracy/democracy alliances (e.g., Morrow, Siverson, and Tabares 1998; see Mansfield, Milner, and Rosendorff 2000 for a recent review) and vote agreement in the United Nations (Bailey, Strezhnev, and Voeten 2017).[13]

10. We are unable to assess the outcomes of bilateral engagement since we do not observe the counterfactual scenario had engagement not occurred. Regarding (geo)political outcomes as a result of trade connection, Tabellini and Magistretti (2024) show that trade integration spread democratic institutions, Beraja et al. (2024) complicate the pattern and document that trade of politically non-neutral technologies, such as surveillance artificial intelligence, could strengthen autocratic institutions around the world.

11. Fearon (1998) surveys the earlier literature, primarily in political science, that examines how diplomatic policies may be shaped by domestic politics.

12. We build on a growing literature in political science that use the ICEWS database to measure bilateral activities; see, among others, Weschle (2018).

13. This geopolitical alignment measure also differs from country-level risk measure (perceived from the US perspective) developed by Caldara and Iacoviello (2022): the bilateral nature of our alignment measure allows analyses at the country-pair level.

The rest of the paper proceeds as follows. Section 2 presents a model of trade under the possibility of bilateral disputes which guides the power measure and lays out predictions on the consequences and causes of power which we empirically test. Section 3 presents the empirical measurement of power and its descriptive patterns. Section 4 studies the consequences of power, investigating whether power induces more bilateral engagement and negotiation. Section 5 studies the strategic origin of such power, examining whether countries build up power facing shifts in bilateral alignment. Section 6 concludes.

2 Illustrative model of trade with bilateral disputes

We construct a simple and illustrative model to show that bilateral asymmetric import dependence may be a source of international power, which can be leveraged by a coercer to extract rents from a target. The model motivates an empirically implementable measure of international power and formalizes testable empirical predictions.

Consider a world with N economies and K sectors. Each country has a representative consumer, competitive producers, and a government that can engage in international negotiations.

Consumer preferences The representative consumer in each country n has quasi-linear utility in the consumption of imports across all sectors k ("good k") in differentiated varieties produced by foreign countries i, and a freely traded outside good. The consumer utility function is:

$$u_n = \sum_k \beta_n^k \ln \left(\sum_i \left(c_{ni}^k \right)^{\frac{\theta^k}{\theta^k+1}} \right)^{\frac{\theta^k+1}{\theta^k}} + c_{n0}, \tag{1}$$

$$\text{with budget constraint:} \quad p_{n0}c_{n0} + \sum_i \sum_k p_{ni}^k c_{ni}^k = w_n \ell_n + T_n.$$

β_n^k is the consumption expenditure share for sector k ($\sum_k \beta^k = 1$), c_{ni}^k is the quantity consumed of sector k variety from country i,[14] and c_{n0} is the consumption of a homogeneous outside good. p_{ni}^k and p_{n0} are the corresponding prices. θ^k is the trade elasticity across varieties of sector k ($\theta^k + 1$ is the elasticity of substitution). ℓ_n is the endowment of labor, and T_n is a lump-sum transfer from the government.

14. Domestic variety is part of the consumption bundle. A domestic variety enters the utility function in exactly the same way as imports from a given country. The key distinction is that imports are subject to trade costs $\tau_{ni}^k > 1$, whereas domestic iceberg trade costs are normalized to $\tau_{nn}^k = 1$, so endogenously the expenditure share on domestic varieties tends to be higher, *ceteris paribus*.

Production Each country i has a competitive firm producing its differentiated variety in sector k, with production function

$$q_i^k = a_i^k \ell_i^k, \tag{2}$$

where a_i^k is the productivity and ℓ_i^k is the labor input.

Differentiated goods are traded across countries subject to iceberg costs τ_{ni}^k. Consuming c_{ni}^k units in country n requires buying $q_{ni}^k = c_{ni}^k \tau_{ni}^k$ units from country i. Market clearing for each good implies:

$$\sum_n q_{ni}^k = q_i^k. \tag{3}$$

The homogeneous outside good is produced one-for-one from labor and freely traded internationally. We assume that the labor endowment in each country is sufficiently large so that the outside good is produced in each country. Given quasi-linear preferences (1), this outside good is used to settle imbalances in the trade of differentiated goods.

Government Bilateral disputes arise stochastically. When a dispute occurs between a pair of countries, the government of either country may choose to engage in costly negotiations with its foreign counterpart. The outcome is determined through Nash bargaining, resulting in economic and political concessions, with the net gains transferred to the domestic consumer via a lump-sum transfer.

Decentralized equilibrium Despite the randomness in whether bilateral disputes arise, the disputes are off-equilibrium threats, and there is no uncertainty in equilibrium quantities and prices. Because the outside good is freely traded and produced one-for-one from labor, wage rates must equalize across countries. We normalize the wage rate to one. The production cost of sector k variety i is a_i^k, and, given iceberg trade costs, the price of consuming this variety by importer i is $p_{ni}^k = a_i^k \tau_{ni}$. Given the set of prices $\{p_{ni}^k\}$ and $p_{n0} = w_n = 1$, the consumer problem (1) can be re-written as

$$\max_{c_{ni}} \sum_k \beta_n^k \ln \left(\sum_i \left(c_{ni}^k \right)^{\frac{\theta^k}{\theta^k+1}} \right)^{\frac{\theta^k+1}{\theta^k}} - \sum_i \sum_k p_{ni}^k c_{ni}^k + \ell_n + T_n \tag{4}$$

The solution features a total expenditure on differentiated goods equal to one, with expenditure β_n^k on good k by the representative consumer in country n. Country n's expenditure share on imports from country i of good k is

$$s_{ni}^k \equiv p_{ni}^k c_{ni}^k = \beta_n^k \frac{\left(p_{ni}^k\right)^{-\theta^k}}{\sum_j \left(p_{nj}^k\right)^{-\theta^k}}. \tag{5}$$

Bilateral disputes and sanctions In the ex-ante stage, import orders (i.e., prices and quantities $p_i^k, p_{ni}^k, q_{ni}^k, c_{ni}^k$) are placed. The game then proceeds to the ex-post stage. In the absence of international disputes, production inputs are hired to fulfill production orders. However, before production takes place, a dispute may arise bilaterally with probability λ_{ni}. We interpret this probability as a measure of geopolitical alignment: a low λ_{ni} indicates countries n and i are allies who rarely face political friction, while a high λ_{ni} characterizes a relationship between geopolitical adversaries.

When a dispute occurs, either country may initiate negotiations by paying a fixed cost κ. We label as the *coercer* the country that initiates sanction threats in that episode; we label as the *target* its counterpart in the disputing pair. The target may also retaliate with sanctions.

Sanctions generate economic damages by disrupting plans for bilateral trade. In the baseline, the coercer i threatens a comprehensive export stop to the target n (import bans are also feasible but endogenously dominated: as shown below, under competitive production, refusing imports harms the importer without damaging the exporter), so n loses access to all varieties supplied by i across sectors. The trade orders for goods unaffected by sanctions must be fulfilled as they were ex-ante planned. The change in country n's welfare due to losing access to all goods from country i is

$$\delta_{ni}^k \equiv \beta_n^k \frac{\theta^k + 1}{\theta^k} \left[\ln \left(\sum_{j \neq i} \left(c_{nj}^k \right)^{\frac{\theta^k}{\theta^k+1}} \right) - \ln \left(\sum_{j} \left(c_{nj}^k \right)^{\frac{\theta^k}{\theta^k+1}} \right) \right] + p_{ni}^k c_{ni}^k \approx -\frac{1}{\theta^k} s_{ni}^k, \quad (6)$$

The approximation follows from $\ln(1-x) \approx -x$, with an approximation error second-order in country n's expenditure share s_{ni}^k across goods k sourced from country i. The formula (6) implies the welfare loss is greater if country n is more reliant on the coercer's goods and if the trade elasticity is smaller.

In our baseline model, sanctions do not cause economic losses for the exporting country, as sanctions imposed by the importer free up labor inputs in the exporter, which are then redirected to the outside good sector. In Appendix A.1, we expand the model to include irreversible sector-specific investments made prior to the realization of disputes (meaning labor cannot be redirected). In that setting, sanctions can indeed inflict economic losses on the exporting country. However, we demonstrate that these losses remain relatively small: specifically, they are only second-order relative to the share of the exporter's output directed toward the importing country. By contrast, the importing country suffers first-order losses in terms of its expenditure share on goods from the exporter. Thus, the conclusions from our baseline analysis remain robust even when considering irreversible investments on the producer's side.

Nash bargaining Conditional on a bilateral dispute, the two governments bargain over a transfer (or policy concession) to avert a bilateral breakdown of trade. We model this as a reduced-form bilateral Nash bargain that holds fixed the rest of the international environment, including any contemporaneous negotiations with third countries. The threat of sanctions and the associated deadweight losses enables the side that can impose larger marginal damage to extract concessions.

The surplus from reaching an agreement is the avoidance of the mutual welfare losses δ_{ni} (loss to n) and δ_{in} (loss to i). Nash bargaining implies that the two countries split the surplus equally relative to their outside options (the trade war state). The net transfer from target n to coercer i is determined by the asymmetry in their respective damages. The ex-ante expected value of transfers from n to i is

$$\Delta_{ni} \equiv \frac{1}{2}\left(\delta_{ni} - \delta_{in}\right) \approx \frac{1}{2}\sum_{k}\frac{1}{\theta^k}\left(s_{ni}^k - s_{in}^k\right). \tag{7}$$

We refer to Δ_{ni} as *international power*. For expositional convenience, we refer to the two countries as coercer and target based on the order of the subscripts: Δ_{ni} is the power of coercer i over target n, and Δ_{in} is the power of coercer n on target i.

We make a few observations. First, bilateral powers net out to zero: $\Delta_{ni} + \Delta_{in} = 0$. Second, power ($\Delta_{ni}$) is an ex-ante measure: it is defined based on trade flows planned ex-ante, and it captures the expected transfer that country n can extract from country i should a bilateral dispute arise, through the threat of disrupting exports.

To summarize, a coercer i has greater power over target n if the target's import dependence on the coercer exceeds the coercer's import dependence on the target ($s_{ni}^k > s_{in}^k$), especially in sectors with low trade elasticity (low θ^k).

Cost of negotiation When a bilateral dispute occurs between countries n and i, one country can incur a fixed cost κ to start a bilateral negotiation. If neither country pays the fixed cost, the dispute resolves without any transfers. This implies that, when a dispute arises (which, recall, occurs with probability λ_{ni} between countries n and i), country i's government incurs the fixed cost against country n iff $\Delta_{ni} \geq \kappa$. We denote $\Lambda_{ni} \equiv \lambda_{ni} \cdot \mathbf{1}_{|\Delta_{ni}|\geq\kappa}$ as the probability of negotiation between countries n and i.[15] To first-order, the expected payoff to country n due to international disputes is

$$\mathcal{L}_n \equiv -\sum_{i}\Lambda_{ni}\left(\Delta_{ni} + \kappa\mathbf{1}_{\Delta_{in}\geq\kappa}\right). \tag{8}$$

The payoff to country n in Equation (8) can be decomposed into expected gains from

15. Unlike most other bilateral variables which are directional, λ_{ni} and Λ_{ni} are undirected: they capture the likelihood that bilateral disputes and negotiations arise *between* the country-pair n and i.

countries i where n is stronger ($\Delta_{in} > 0$) and expected losses where n is weaker. The opportunity for coercion arises specifically when relations are adversarial (λ_{ni} high) *and* trade asymmetries are sufficient to overcome the negotiation cost ($|\Delta_{ni}| > \kappa$).

Welfare From a government's perspective, the *ex-ante* expected social welfare reflects consumer utility function (4) but substituting the government transfer T_n with the payoffs $\mathcal{L}_n$ arising from disputes. Substituting Δ_{ni} from (7) into (8), we can rewrite the ex-ante welfare as follows:

$$\begin{aligned}\mathcal{W}_n \equiv & \sum_k \beta_n^k \ln \left(\sum_i \left(c_{ni}^k \right)^{\frac{\theta^k}{\theta^k+1}} \right)^{\frac{\theta^k+1}{\theta^k}} - \sum_k \sum_i \left(1 + \frac{\Lambda_{ni}}{2\theta^k} \right) p_i^k c_{ni}^k + \ell_n \\ & + \sum_k \sum_i \frac{\Lambda_{ni}}{2\theta^k} p_n^k q_{in}^k - \sum_i \Lambda_{ni} \left(\kappa \mathbf{1}_{\Delta_{in} \geq \kappa} \right) .\end{aligned} \tag{9}$$

Equation (9) shows that, absent coercion ($\Lambda_{ni} = 0$ for all i), for a price-taking government, the allocations maximizing domestic welfare $\mathcal{W}_n$ coincide with allocations chosen by decentralized agents. However, when coercion arises with positive probability, the welfare function features a wedge $\frac{\Lambda_{ni}}{2\theta^k}$ on the marginal social cost of consuming goods produced by adversaries i and a wedge $\frac{\Lambda_{nm}}{2\theta^k}$ on the marginal social value of export penetration.

The analysis implies that, in anticipation of bilateral disputes, governments may have an ex-ante incentive to accumulate international power Δ_{in} by using trade or industrial policy. Specifically, setting an export subsidy $t_n^k = \frac{\Lambda_{ni}}{2\theta^k}$ aligns the private value of exports with the social value at the margin, and setting an import tariff $\eta_{ni}^k = \frac{\Lambda_{ni}}{2\theta^k}$ aligns the private cost of imports with the social cost. Likewise, in a model extension with irreversible ex-ante, sector-specific investments on the production side, similar predictions can be derived based on industrial policy targeting these sectoral investments. Intuitively, the prospect of disputes gives rise to the strategic importance of international power. Export penetration to foreign economies raises international power and, conversely, import dependence lowers it. When the asymmetry in the international power exceeds the fixed cost of negotiation ($|\Delta_{ni}| \geq \kappa$), the government has an incentive to expand exports and reduce imports, especially those against more adversarial trade partners (high λ_{ni}). Decentralized agents do not take into account international power when making production and consumption decisions; hence, they overvalue imports and undervalue exports against adversarial partners.

The model formalizes two predictions that we test empirically:

1. An increase in power asymmetry ($|\Delta_{ni}|$) due to preference or technological shocks

(e.g., changes in β_n^k or a_i^k) raises the probability $\mathbf{\Lambda}_{ni} \equiv \lambda_{ni} \times \mathbf{1}_{|\Delta_{ni}| \geq \kappa}$ of international engagement and negotiation.

2. Shocks to bilateral relations (λ_{ni}) may prompt policies to build up bilateral power.

In general, the impact of shocks to bilateral alignment on the net power change between the countries is ambiguous, because both countries would respond and adjust power towards the opposite direction. However, if one were to isolate one country's response to alignment shocks while holding fixed the trade adjustment of the other country, then the alignment shocks' impact on directed power between the pair becomes unambiguous: more adversarial alignment would prompt one country to increase power toward the other. This is what we aim to identify empirically in Section 5.

Interpretations We make several remarks on interpreting this illustrative model.

First, we express welfare and transfers using first-order approximations in bilateral expenditure shares s_{ni}^k. Since foreign import penetration is typically modest at the sector level, these approximations preserve the qualitative predictions while keeping the mapping to observables transparent; the neglected terms are second order in s_{ni}^k.

Second, the baseline adopts quasilinear utility with a freely traded outside good. This shuts down general-equilibrium terms-of-trade channels in the power measure: relative wages (and hence prices of delivered goods) do not move in response to sanctions. As detailed in Appendix A.2, we also derive a power measure in a multisector general-equilibrium environment in the spirit of Costinot, Donaldson, and Komunjer (2011), which endogenizes the wage and price responses to trade disruptions. Relative to the baseline power measure which we will introduce in Section 3, these GE adjustments to the power measure are small in magnitude and strongly correlated with the baseline measure (correlation coefficient = 0.96).

Third, in the baseline the representative consumer's total expenditure on differentiated goods is equal to one in each country. When countries differ in size—and hence in levels of tradables expenditure—the appropriate empirical normalization depends on how the marginal cost of concessions scales with economic size. If concession costs scale proportionally with size, share-based measures are appropriate; for example, a large country (such as the US) may face higher costs when conceding to foreign demands (e.g., giving up intellectual properties), implying size-dependent costs. If, instead, the marginal cost is invariant to size—as might be the case when concessions take the form of fixed monetary payments—then level-based measures may be more relevant. Empirically, we implement both share- and level-based measures.

Fourth, we assumed for simplicity that the coercer threatens to withhold exports to the target across all sectors. One can alternatively allow the coercer to select a single sector k to maximize damage, potentially subject to sector-specific political shocks. Under the assumption that the political shocks are drawn from type-I extreme value, the ex-ante expected maximum damage from targeted sanctions yields a power expression that is isomorphic to (7) up to a scaling constant. For parsimony, we retain the all-sectors formulation.

Fifth, we assume that trade plans (prices and quantities) are chosen ex ante, and that if a dispute escalates the planned bilateral flows with the sanctioning partner are disrupted without ex-ante adjustment in trade flows with other countries. For welfare accounting, this ex-ante formulation is equivalent, to first order, to a formulation in which the target reallocates expenditure across suppliers after sanctions: the difference between the two timing assumptions affects welfare only through second-order terms in bilateral import shares. We adopt the ex-ante formulation because it facilitates the discussion of governments' incentives to accumulate (or reduce) bilateral dependence, i.e., to shift the ex-ante exposure that determines the ex-post bargaining leverage in disputes.

Finally, the baseline model emphasizes coercion via export-withholding threats rather than import bans. Under competitive production and the outside-good margin, an import ban imposes a first-order welfare loss on the banning country by raising its import-side price indices, while leaving the sanctioned exporter's welfare unchanged in the baseline. Likewise, in the baseline an export stop imposes zero welfare loss on the exporter: foregone export production is costlessly reallocated to the outside good. Appendix A.1 introduces ex-ante irreversible, sector-specific investments; in that extension, exporter-side losses become positive but remain second order in bilateral exposure, whereas importer-side losses remain first order in the importer's expenditure shares. This conclusion can change in settings with market power and markups, where import restrictions can reduce foreign producer surplus; accordingly, we also construct export-dependence–based measures as robustness checks in the empirical work.

3 Measuring international power

We build the model-implied empirical measure of international power in Section 3.1. We describe the data source in Section 3.2, and present a set of descriptive patterns of the measured international power in Section 3.3.

3.1 Towards a measurement

Our measure of international power captures the asymmetric import dependence between country pairs, averaged across sectors and inversely weighted by each sector's trade elasticity. Specifically, importer n's dependence on exporter i in year t is defined as:

$$\bar{s}_{nit} = \sum_{k \in \mathbb{K}} \frac{1}{\theta_k} \frac{V_{nikt}}{\sum_{i'} \sum_{k'} V_{ni'k't}}, \tag{10}$$

where V_{nikt} denotes the trade volume from i to n in k at year t, and K denotes a set of sectors considered to measure power. The import dependence is scaled by the inverse of sector-level trade elasticity, $\frac{1}{\theta_k}$. The denominator $\sum_{i'} \sum_{k'} V_{ni'k't}$ denotes country n's total import across sectors and exporters in year t. Note that in the model we have assumed that countries can threaten to exclude trade in any sector against one another; accordingly, in the baseline measure of $\bar{s}_{nit}$, we let $\mathbb{K}$ be all HS-section level sectors traded across countries.

As in Equation (7), we scale the import dependence by the inverse of sector-level trade elasticity, $\frac{1}{\theta_k}$. This ensures that the measure appropriately accounts for the degree of substitutability across varieties in each sector. Specifically, sectors with lower trade elasticities contribute more to import dependence, as trade disruption would have a higher welfare impact, *ceteris paribus*. Conversely, sectors with higher trade elasticities contribute less to the measure, as their goods are more easily replaceable from alternative sources.

Following the definition in Equation (7), we denote power (Δ_{nit}) as the difference between n's dependence on i and i's dependence on n:

$$Power_{i \to n,t} = \bar{s}_{nit} - \bar{s}_{int}. \tag{11}$$

This captures the net impact of an export disruption threat that i can impose on n, anticipating the potential retaliation.

Notably different from Equation (7), we use n's total imports in the denominator when calculating dependence share instead of total expenditure as specified in the model. This would not yield large differences at the country-pair level, since variation in imported vs. domestically produced goods in consumption may not differ that much across countries. Using total imports could differ from total expenditure at the country-pair-sector level; however, expenditure data at this level is scarce.[16]

In addition to the baseline measure of power described above, we construct several alternative configurations and assess the robustness of empirical results involving power

16. We introduce an alternative specification where we bring a secondary data source to (imperfectly) measure domestic expenditure, and we show that this does not alter the baseline power measure in economically meaningful ways.

throughout the analyses. First, one may prefer a measure of international power that is based as closely on directly observable data as possible. In an alternative configuration, we omit trade elasticities θ^k in the measure (thus weighing sectors equally).[17] Second, while the baseline power measure allows countries to choose trade disruption threats on any sectors, there may be practical constraints over the subset of sectors for which threats are feasible. In an alternative configuration, we allow countries to disrupt trade in one specific sector: countries choose sector $\mathbb{K}$ that maximizes elasticity-weighted import level $\frac{V_{nikt}}{\theta_k}$. This corresponds to export embargo threats (definitively) on one sector that would induce the largest disruption to total trade volume. Third, instead of defining and measuring power at the HS-section level, we alternatively carry out the power measurement at the HS-2 sector level. Fourth, the baseline definition of power is based on the *shares* of trade expenditures, derived from the model specification where all countries have the same total expenditure on tradeables. In an alternative specification of power, we use *levels* of trade expenditure to consider the implications of countries with different sizes and if the marginal cost of concessions does not scale with size.

3.2 Data sources

Bilateral trade flow is the primary data needed in order to operationalize the international power measures described above. We use the BACI international trade database, which improves on the UN Comtrade database and provides data on bilateral trade flows for 200 countries at the product level.[18] The BACI database corrects for reporting inconsistencies between importers and exporters, and classifies products at the 6-digit HS code level. Our baseline analyses focus on HS-section level aggregation.[19] The data covers the period from 1995 to 2021, though we focus on data from 2000 onwards as the trade volume coverage is left-censored prior to 2000.

Trade elasticities are drawn from the Harmonized Tariff Schedule (HTS) level elasticity

17. A key exercise in this paper is to relate pairwise power to bilateral engagement. As a validation exercise, we also conduct this analysis with empirical measures of power derived from each sector (HS-section) separately. Given that we omit the trade elasticities in our empirical definition, the model implies that our estimated coefficients (which relate engagement to power) should be larger for sectors with lower trade elasticities, which is indeed what we find (see Section 4.7).

18. See Gaulier and Zignago (2014) for details of the BACI database.

19. The HS-section, defined by the Harmonized Commodity Description and Coding System (HS), represents the broadest classification of goods, encompassing distinct, non-overlapping HS-2 sectors. We adjust the "minerals" and "base metals" sections, as "minerals" mainly consist of petroleum products, and "base metals" of metals and minerals. Specifically, we transferred sectors 25 (Salt, sulphur, lime, cement) and 26 (Ores, slag, ash) from "minerals" to "base metals." For the HS-section of "arms and ammunition," we supplement the BACI data with the time series compiled by Stockholm International Peace Research Institute (SIPRI), as the latter is much more comprehensive in its coverage. We also construct alternative measures at the HS-2 and HS-4 sectors level.

of substitution estimated by Broda and Weinstein (2006). To obtain sector-level elasticities, we first aggregate up to HS 6-digit codes by averaging across the goods within the category, and then sum up to the HS-section level weighted by the global trade volume of the 6-digit categories from 2001 to 2021.

Our analyses throughout the paper draw a number of auxiliary data sources. For example, we use country-level yearly GDP in current US dollars from the World Bank to control for GDP differences within country pairs. We will introduce the data sources and the corresponding measures as we describe the empirical analyses.

3.3 Descriptive patterns

Before we delve into testing the consequences and strategic causes of international power, we first present several descriptive patterns of the measured international power.

International power varies across countries and over time The international power measure captures rich variation across countries and over time. Take the United States as an example. Figure 1, Panel A(a), plots the average power that the US exerts toward other countries during the 2000 to 2021 period. One observes that the US holds disproportionately larger power over countries in the North and South America relative to countries in other continents such as Europe and Africa. The US's power toward countries in the Asian Pacific region is unevenly distributed: its power towards allies such as Japan and Australia is large, while it holds limited power towards China despite the extraordinarily high trade volumes between the two countries. In Appendix Figure A.1, Panel A, we plot the power distribution residualizing the GDP differences between the US and the corresponding countries, and residualizing the total bilateral trade volumes; we continue to observe large variation in the US power across the world, indicating that the power measure does not simply reflect the difference in (economic) size across countries.

We present the equivalent plots for China in Panel B(a). China exhibits power that is geographically distributed in very different ways than the US does (Appendix Figure A.1, Panel B, shows China's power distribution residualizing the GDP differences and total bilateral trade). For instance, China holds substantial power over many of its neighboring countries such as India and Vietnam, as well as countries in East Africa and South America. Interestingly, the global distribution of power exposed to China is negatively associated with that of the US; in other words, countries that are more dependent on imports from China tend to depend less on import from the US. Regressing China's power over country i on the USA's power over the same country i yields a coefficient of roughly -0.14 (p-value < 0.001). There exist, however, regions in the world such as South

America where China and the US have overlapping power over. It is worth noting that relative to the power distribution around the world, the US does not hold much power over China, and China in return exhibits only moderate power towards the US (reflecting the trade asymmetry between the two countries), and this is likely a result of the sheer size of the two countries and relative difficulty in exerting influence with each other.

Moving to dynamics, Figure 1, Panel A(b) plots the changes in US power over the rest of the world over time. US's power over Japan, Australia and Taiwan mildly fluctuates but remains largely stable during the two decades since 2000. However, its power noticeably declined toward China, and the decline was especially overt during 2000 to 2005. In contrast with the US, we observe, in Panel B(b), China's power rising against most countries between 2000 and 2021, presumably a result of China's trade expansion by joining the WTO and its domestic economic growth. In Appendix B.1, we explore the plausible connection between China's rising power and its trade expansion; in Appendix B.2, we investigate whether China's industrial policies, in particular, the Five Year Plans, may play a role in fostering its power rise.

Power resulting from asymmetric import dependence is robustly measured We begin by examining the correlation of the baseline international power measure with its alternative specifications. Table 1, Panel A, focuses on the following alternative specifications: *(i)* weigh sectors equally; *(ii)* isolate the sector that induces the largest disruption to total trade volume; *(iii)* isolate the sector that induces the largest disruption to total trade volume, taking into account the corresponding trade elasticities; *(iv)* re-define sectors at the HS 2-digit level; *(v)* re-define import dependence based on levels of trade instead of share of trade; *(vi)* incorporate domestic expenditure to calculate dependence share as expenditure share instead (see Appendix C.1 for details), and *(vii)* include trade in service (non-goods) sectors in addition to sectors reported in the BACI trade data (see Appendix C.2 for details). We present the correlation coefficients unconditionally in column 1, controlling for year fixed effects in column 2, and controlling for both year and country pair fixed effects in column 3. One observes that the baseline measure of international power is strongly correlated with these alternative formulations of the similar measure; as a result, the analyses throughout the rest of the paper are robust to different choices of the international power measure.

We present summary statistics in columns 4 and 5. Note that given these measures are constructed at the directed country pairs level, the overall mean is always zero. To gauge the distribution of the measure, we present mean and standard deviation among the positive subset of the directed pairs in columns 6 and 7.

Power resulting from asymmetric import dependence correlates with but is distinct from other dimensions of international influence Next, we turn to the correlation between power stemming from trade and international influence that may arise from other domains that are proposed or studied in the literature on international interdependence. We hereby refer to international power that stems from trade as *power*, and from non-trade dimensions as *international influence*. In particular, we consider international influence arising from countries' overall size, military capacity, aid dependence, and sovereign debt exposure (Blackwill and Harris 2016).

Specifically, we examine the correlation between power and the country pairs' *(i)* overall difference in economic size, as measured by total GDP; *(ii)* difference in levels of development, as measured by GDP per capita; *(iii)* difference in military capacity, as measured by yearly military expenditure using the SIPRI (Stockholm International Peace Research Institute) database; *(iv)* bilateral foreign aid allocation, using official developmental assistance (ODA) data provided by the OECD; and *(v)* bilateral holdings of sovereign debts, using all bilateral debt disbursements from International Debt Statistics (IDS).

Table 1, Panel B, displays the correlation coefficients. The measure of international power derived from trade shows positive, though often weak, associations with non-trade domains of international influence. While our international power measure is based solely on trade activities, it captures broad bilateral dependence as conceptualized in international relations scholarship.

The correlation between our power measure and the Formal Bilateral Influence Capacity (FBIC) index — a bilateral measure on country's overall influence on one another and a common metric in international relations literature[20] — decreases significantly when controlling for country-pair fixed effects (see Panel C). This decline occurs because our international power measure captures more detailed temporal variation (in addition to cross-sectional variation reflected in the FBIC index), whereas FBIC measures influence manifestations such as diplomatic representation that evolve more slowly over time.

International power versus total bilateral trade flows To illustrate the relationship between measured power and trade imbalance, we plot, in Appendix Figure A.2, the power exerted by a subset of countries against other countries (y-axis) and the corresponding trade imbalance (x-axis). We focus on the US, China, Japan, Germany and Russia as co-

20. We focus on the components of the FBIC index that is not directly a measure of bilateral trade exposure: *political bandwidth*, measured by the level of diplomatic representation between two countries (e.g., dedicated ambassador vs. interest desk serving multiple countries) as well as the number of intergovernmental organizations in which both countries are members. See https://korbel.du.edu/fbic for details of the index.

ercers, and they are plotted separately for each column; we zoom in to 2001, 2011, and 2021 in each row.

These figures show that while trade-based power correlates with trade imbalance, our measure of international power differs significantly from trade imbalance alone. Most coercer-target-years show low trade imbalances, with data points clustering near zero on the x-axis. However, trade-based power exhibits substantial variation both geographically and temporally.

International power versus asymmetry in GDP International power stemming from trade shows a positive but weak association with the asymmetry in total economic sizes between country pairs (as shown in Table 1, Panel B, and plotted as the dotted global trend line throughout Appendix Figure A.3). Which countries exceed or fall short of expectations in their power over others, given their relative economic sizes?

In Appendix Figure A.3, we track selected countries' (as coercers) power over others between 2000 and 2020 (y-axis) relative to the evolution of their GDP asymmetry during this period (x-axis). Dots that fall above the trend line indicate cases where a coercer exerts greater power over a target country than their GDP asymmetry would suggest, while points below show the opposite. We illustrate the US, China, Japan, Germany, and Russia as coercers, highlighting the four largest economies in each continent as targets, along with the rest of the countries in the continent combined in the final column.

China wields substantially more power over most countries than its GDP asymmetry would suggest. This outsized influence has grown even stronger as China's economy expanded from sixth-largest in 2001 to second-largest since 2010. This pattern was particularly pronounced during the 2000s, when China's trade expanded rapidly and GDP growth accelerated, despite its total GDP size remaining relatively modest. China's overperforming power is most evident in its relations with Asian and South American countries, while its influence over European nations more closely follows the power-to-GDP-asymmetry trend line. Notably, there are two exceptional cases where power dynamics reversed: China managed to exert positive trade power over both the US (during 2001–2020) and Japan (during 2001–2010), despite having a smaller GDP during these periods.

The US presents a striking contrast. Its trade-based power falls below the trend line against almost all countries. As the largest economy in the world, one would expect the US to exert positive power over all other countries in the world; however, the actual power that the US is able to exert is often considerably smaller than the underlying asymmetry in total GDP sizes. In other words, at least in the domain of (bilateral) trade, the US is punching below its economic weight.

4 Does power induce more bilateral engagement?

As we describe in Section 2, shocks to international power would affect diplomatic engagement. In this section, we investigate whether this is indeed the case. We begin by introducing the measure for bilateral engagement and negotiation in Section 4.1, and present descriptive patterns between engagement and power in Section 4.2. We use two empirical strategies to estimate the relationship between power and bilateral engagement, first using a fixed effect model in Section 4.3, and then using an instrument variable approach in Section 4.4. Section 4.5 assesses the robustness of these results. Section 4.6 asks whether power's ability to stimulate engagement differs across country pairs; Section 4.7 asks whether power differs across sectors; Section 4.8 asks whether exporter power differs from importer power; and finally, Section 4.9 asks how power arising from import dependence interacts with other sources of international influence.

4.1 Measuring bilateral engagement and negotiations

In order to examine the consequence of international power on diplomatic engagement and negotiations, we first need to measure bilateral engagement and negotiation events.

Power changes between countries would unambiguously change the *frequency* of engagement and negotiations. However, changes in the *outcomes* of the engagement and negotiations can be ambiguous since one does not observe outcomes in the status quo and the counterfactual had the engagement not occurred. As Schelling (1980) pointed out, "The difference between a threat and a promise, between coercion and compensation, sometimes depends on where the baseline is located."

We use the Integrated Crisis Early Warning System (ICEWS) dataset to build such measure. The ICEWS dataset is constructed by automatically scanning newspaper articles around the world and categorizing stories into different event types.[21] We focus on bilateral events, where each event records the date of occurrence, the country-pairs involved, event category, and the associated intensity score between -10 and 10 where the magnitude indicates extremity.

21. We treat each event entry as a distinct event in the baseline measurement. One may be concerned that the same event may be recorded multiple times due to duplicated news coverage (though this could capture event "intensity"), we construct an alternative measure de-duplicate the events at the country-pairs$\times$event-types$\times$day level, and our baseline findings remain unchanged qualitatively and quantitatively.

Most bilateral engagement events are *not* about disputes or bargaining over trade *per se*. The recorded events include various diplomatic activities: for example, appeals for economic cooperation, willingness to accept mediation, high-level ministerial negotiations, and requests for meetings to resolve disputes.

To illustrate the bilateral engagement events recorded by the ICEWS, Appendix Figure A.4 shows engagement events from 2000 to 2020 between Japan and Thailand (Panel A) and Italy and Russia (Panel B). Several key observations emerge. First, bilateral engagement rises substantially around major geopolitical milestones between these country pairs (labeled in the figures), indicating that changes in event frequencies reflect shifts in bilateral relationships. Second, engagement spans both trade negotiations (as seen when Japan and Thailand increased contact in early 2002 and late 2003 during bilateral free trade agreement talks) and non-trade issues (such as when engagement spiked in August 2011 as Prime Minister Yingluck Shinawatra sought a visa from Japan for her exiled brother, former Prime Minister Thaksin Shinawatra). Third, engagement can be positive (e.g., Italy issued support for Russia's gas supply cutoff to Ukraine in June 2006) or negative (e.g., President Putin visited Rome in June 2015 to discourage Italian support for EU sanctions against Russia). However, determining how events might have unfolded without these recorded engagements remains challenging, making it difficult to assess how power affects the outcomes of engagements.

Overall, we observe $6,733,036$ bilateral events across $23,516$ country pairs around the world, from 2001 to 2021. On average, about 14 bilateral engagement events occur every year between a specific country pair. While many do not engage with one another (42.96%) at all, country pairs in the top decile engage on average 145 times annually.[22]

We outline three steps taken to prepare the bilateral events for analysis. First, although these events are bilateral in nature, it is often difficult to identify the initiator and distinguish the "direction." For example, when two countries meet to negotiate, this reflects their mutual agreement to enter negotiations, regardless of which country was recorded as meeting with the other. Therefore, we treat all bilateral events as unordered in our baseline analyses.

Second, in the baseline analyses, we focus on engagement events that are non-violent and do not involve military forces — those within the intensity range of $[-7, 8)$. These non-violent engagement events represent 92% of all bilateral engagement, and we will separately examine countries who have engaged with each other violently.[23] We provide

22. Appendix Figure A.5 plots a histogram on the average annual engagement events across country pairs with engagement levels that fall in the top decile.

23. Out of 13,244 unique pairs, 4,321 pairs have at least one violent engagement event. The median number of violent events is 4 for countries that have at least one violent event.

a full list of bilateral event categories, ranked by intensity, in Appendix Table A.1.

Third, we aggregate all events in a specific category between country pairs in a given year. To address potential observation biases in the ICEWS data due to differential access to media resources (e.g., country pairs with more media resources would record higher level of events occurrence of any type), we standardize the event count for each event category at the country pair level. We then use pairwise z-scores — summing the standardized event counts across all categories for a given country pair — as the primary outcome of interest.

4.2 Descriptive patterns

Before examining the relationship between international power and bilateral engagement and negotiation more formally, we first provide a few descriptive examples to demonstrate the underlying pattern.

We first return to the country pair of Japan and Thailand. In Appendix Figure A.6, Panel A, we plot the absolute value of their bilateral power (in red) and bilateral engagement (in blue), where both variables are standardized at the country pair level and residualized against year fixed effects. One notices the co-movement between the two series of power and bilateral engagement: as the power asymmetry between Japan and Thailand rises, their bilateral diplomatic engagement increases as well. For instance, Thailand's plea for Japan to issue a visa to its exiled former Prime Minister in 2011 was preceded by an increase in power between the two countries.

Panel B presents the example of Italy and Russia. Again, one observes a co-movement between their power and bilateral engagement. Their bilateral engagement peaks — such as discussions about Russia's gas cutoff to Ukraine in 2006 and EU sanctions in 2015 — coincided with periods of relatively high power asymmetry. This correlation is particularly notable because the total trade volume between the two countries (shown in grey) follows almost the opposite pattern.

4.3 Empirical strategy #1: over-time changes within country pairs

Following these examples, we now examine how differences in international power between pairs of countries affect their bilateral engagement and negotiations.

Because the measure of bilateral engagement is unordered, for the analyses throughout Section 4, we take absolute value of the power measure between the pair to capture (unordered) power asymmetry, which we denote as $Power_{\{in\}}$ to distinguish from the ordered measures $Power_{i \to n}$. We keep both directions of each country pair in our regressions and cluster standard errors at the unordered country-pair level.[24]

In the first empirical strategy, we use a two-way fixed effects model to isolate changes in power within country pairs, and examine the influence on their subsequent engagement and negotiations. Specifically, we estimate the following specification:

$$\begin{aligned} \text{Engagement}_{\{in\},t} =& \beta_1 \text{Power}_{\{in\},t-1} + \beta_2 \text{GDP difference}_{\{in\},t-1} + \beta_3 \text{Total trade}_{\{in\},t-1} + \\ & \gamma_t + \alpha_{\{in\}} + \epsilon_{\{in\},t}, \end{aligned} \tag{12}$$

where the subscripts $\{in\}$ indicate that these variables are undirected and correspond to the pair containing countries i and n. We transform the (directed) baseline *power* measurement as described in Section 3.1 to an undirected measure.[25] *GDP difference* measures the absolute difference between the two countries' values, and *total trade* records the volume of bilateral trade during a corresponding year. We standardize all covariates and *engagement* at the pair level, allowing us to compare deviations from the mean of power within pair over time to the evolution of bilateral engagement also within pair and over time. We control for country pair fixed effects in order to account for time-invariant differences in engagement levels between specific pairs of countries; and year fixed effects to account for global shocks or trends in engagement. Standard errors are clustered at the country pair level.

Table 2, columns 1-3, presents the results. One observes that an increased power asymmetry between the two countries is associated with a substantial and statistically significant increase in their bilateral engagement and negotiation incidences. Importantly, this relationship stands as we control for bilateral trade flows and in addition GDP size differences, suggesting that it is not a mere reflection of the overall aggregate economic activities and asymmetric sizes between the two countries. Taking the estimates from column 3, on average, a one standard deviation increase in power asymmetry between a pair of countries stimulates a 0.236 standard deviation increase — by 38.4% in the subsequent year, or 18.8% when evaluated at the median — in bilateral engagement and negotiations.

The increased engagement is *not* driven by sanctions. We observe raised engagement in both economic (unrelated to sanctions) and non-economic domains (see Appendix Table A.2). Moreover, such an increase in engagement is not driven by a particular type of event; rather, we observe increased engagement following power rises between countries

24. This results in duplicated observations, but it allows us to flexibly include coercer and target fixed effects (or coercer-by-year and target-by-year fixed effects) in robustness analyses. Alternatively, one can run the baseline specification using one unordered observation per country-pair and include country-pair and year fixed effects. Clustering standard errors at the unordered pair level ensures that both sampling approaches yield equivalent regression results.

25. Among 13,244 country pairs in the sample, directed power between 6,670 pairs has at least one sign flip during the sample period.

across nearly the entire spectrum of event categories (see Appendix Table A.3).

We plot, in Figure 2, the relationship between power asymmetry (on x-axis) and bilateral engagement (on y-axis), controlling for pair and year fixed effects. The pattern exhibits a high degree of linearity.[26] Note that the left tail of the power distribution deviates from such linear relationship. This may be driven by countries with close alliance ties (thus with frequent engagement) who trade in disproportionately and asymmetrically large quantity (e.g., between the US and Canada).

4.4 Empirical strategy #2: instrumental variable on sector-specific trade exposure

To further establish the causal relationship between power asymmetry and bilateral engagement, we develop an instrumental variable approach. This approach builds on our descriptive findings in Appendix B.1, which show that countries' power toward one another could be a result of the combination of their export expansion and differential sector-level exposure of such expansion among the importing countries.

We re-write the import dependence measure we describe in Section 3.1 as a weighted sum of sectors k:

$$\bar{s}_{nit} = \sum_k \frac{1}{\theta_k} \frac{V_{nikt}}{\sum_{i' \in \text{World}} V_{ni'kt}} \times \frac{\sum_{i' \in \text{World}} V_{ni'kt}}{\sum_{i' \in \text{World}} V_{ni't}} = \sum_k \frac{1}{\theta_k} \hat{s}_{nikt} \times w_{nkt}, \tag{13}$$

where $\hat{s}_{nikt}$ is n's within-sector import share from i in sector k, w_{nkt} is the share of k in n's aggregate import, and θ_k is the trade elasticity for sector k.

This expression of import dependence yields a shift-share instrument for $b_{nit} = \sum_k \hat{s}_{ikt} \times \frac{w_{nk\tau}}{\theta_k}$. The "shift" component arises from decomposition of $\hat{s}_{nikt}$ into $\hat{s}_{nikt} = \hat{s}_{ikt} + \widetilde{s}_{nikt}$. Thus, $\hat{s}_{ikt} = \frac{V_{ikt}}{\sum_{i' \in World} V_{i'kt}}$, representing country i's global market share of sector k; $\widetilde{s}_{nikt}$ is the idiosyncratic differences for each importer n. The "share" component $\frac{w_{nk\tau}}{\theta_k}$ pools pre-period import share from 1995 to 1999, weighted by their corresponding trade elasticities.[27]

This instrumental variable approach, akin to Goldsmith-Pinkham, Sorkin, and Swift (2020), combines common shifts (based on global market share) affecting all trading partners with pre-existing factors that may shape countries' differential exposure to such com-

26. We in addition plot the relationship using non-standardized power and engagement measures, in Appendix Figure A.7; one observes patterns of moderate concavity in the non-standardized measures. This could be a result of the HS-section aggregation — the very high degree of concentration in specific sectors rarely emerge at HS-section level, but could be present at HS-4 or HS-6 level and thus may enter the non-linear range of the relationship between power and engagement.

27. We rebalance the weights $w^{\theta}_{nk} = \frac{w_{nk}/\theta_k}{\sum_{k'} w_{nk'}/\theta_k}$, so that the total shares in the instruments sum up to 1.

mon shifts. It thus could mitigate endogeneity concerns arising from a country's strategic manipulation of trade power against specific trading partners for geopolitical purposes in a given year.

The identification hinges on the assumption of exogeneity in countries' varying exposure to others' trade expansion or contraction (based on pre-existing import composition). Appendix Figure A.8 illustrates Germany's export expansion across sectors from 2001 to 2021 (x-axis) compared to importing countries' corresponding import shares from 1995–1999 (y-axis). This demonstrates the rich variation we exploit in the shift-share instrument. For instance, while Germany's global market share decreased similarly in stone, glass, and ceramics (0.513%) and textiles (0.436%), China's exposure to these sectors differs by 11.6 percentage points based on its 1995–1999 import share.

In instrumenting for $Power_{\{in\},t} = |\bar{s}_{nit} - \bar{s}_{int}|$, we use $|b_{nit} - b_{int}|$ as the instrument, applying absolute value to the instrument. We thus estimate the following two-stage-least square specification:

$$\begin{aligned} \text{Power}_{\{in\},t} =& \beta_1 |b_{nit} - b_{int}| + \beta_2 \text{GDP difference}_{\{in\},t} + \beta_3 \text{Total trade}_{\{in\},t} \\ & + \gamma_t + \alpha_{\{in\}} + e_{\{in\},t}, \end{aligned} \tag{14}$$

$$\begin{aligned} \text{Engagement}_{\{in\},t} =& \beta_1 \widehat{\text{Power}}_{\{in\},t-1} + \beta_2 \text{GDP difference}_{\{in\},t-1} + \beta_3 \text{Total trade}_{\{in\},t-1} \\ & + \gamma_t + \alpha_{\{in\}} + \epsilon_{\{in\},t}. \end{aligned} \tag{15}$$

1st stage results Appendix Table A.4, Panel A, presents the 1st stage estimates. Column 1 shows the specification without GDP difference and total trade as controls, column 2 controls for GDP difference, and column 3 controls for both. The first-stage estimates are positive as expected and statistically strong.

IV estimates Table 2, columns 4-6, present the 2nd stage estimates. Across specifications, we find a consistent pattern: increases in power (resulting from sector-specific exposure to exporting countries' trade expansion or contraction) stimulate subsequent bilateral engagement and negotiation. In other words, to the extent that our identification assumption is satisfied, power asymmetry between countries indeed influences their likelihood of entering negotiations and pursuing diplomatic engagement.

Balance tests and sectors with large Rotemberg weights One may be concerned that countries with high trade exposure to specific sectors (in the pre-period) may be correlated with socioeconomic and geopolitical conditions with the exporting countries who experience large trade expansion/contraction (during the subsequent period), thus violating the identification assumption. Following Goldsmith-Pinkham, Sorkin, and Swift

(2020), we proceed with a set of balance tests to check whether the importer n's industry shares in terms of trade exposure in prominent sectors are associated with observable changes in socioeconomic conditions.

To implement the balance test, for each socioeconomic variable X measured in country n, we estimate $w_{nk\tau} = \beta_0 + \beta_1 \Delta X + \epsilon_{nk}$ for each sector k where ΔX is defined as the difference between the mean of 1995 to 1999 and the mean of 2017 to 2021 of the within-country standardized values of X. We examine the correlation between trade exposure and the bilateral differences in domestic economic conditions (e.g., GDP size), international economic activities (e.g., foreign direct investment), military conditions (e.g., armed forces personnel), and domestic political conditions (e.g., number of anti-government demonstrations).[28] In order to focus on the sectors that have the largest contribution to empirical identification, we compute the Rotemberg weight of each HS-section (see Appendix Table A.6 for the estimated Rotemberg weights). Appendix Table A.7 presents the balance tests according to the sectors' Rotemberg weights.

We observe moderate degree of associations (though often in opposite directions depending on the variables) in the top 5 sectors according to their Rotemberg weights, and more muted association for other sectors. As a robustness exercise, we re-estimate Equation (15) excluding the top 5 sectors in terms of Rotemberg weights. Appendix Tables A.4 and A.5, Panel B, present the 1st and 2nd stage results, respectively. Statistical power decreases by construction, but only slightly so. The baseline results that we observe are unaffected.

Leave-one-out shifter Another concern is that global export expansion and contraction may be driven by imports from specific countries, particularly those where we are examining power changes and diplomatic engagements. To address this concern, we follow Autor, Dorn, and Hanson (2013) and use a leave-one-out shifter to re-estimate the baseline specification. Rather than using country i's global market share as the shifter, we use country i's market share excluding the target country n in the corresponding country-pair ni; specifically, $b'_{nit} = \sum_{k \in \mathcal{K}} \hat{s}_{(-n)ikt} \times w_{nik\tau}$. Appendix Tables A.4 and A.5, Panel C, present the 1st and 2nd stage results, respectively. The results remain qualitatively and quantitatively unchanged.

Alternative estimators and over-identification test Finally, we investigate whether each component that makes up the shift-share instrument (for all 21 HS-section level sec-

28. We use various country-level socioeconomic indicators from the World Bank's World Development Indicators (WDI) and Databank International's Cross-National Time-Series Data (CNTS).

tors) has a homogeneous effect. Divergent estimates across the 21 instruments may indicate that one or more instruments are correlated with unobserved factors, potentially violating the identification assumption. We implement four alternative estimators: *(i)* the over-identified two-stage least squares (TSLS) estimator, which explicitly uses the 21 separate instruments in the two-stage estimation; *(ii)* modified bias-corrected two-stage least squares (MBTSLS); *(iii)* limited information maximum likelihood (LIML); and *(iv)* heteroskedasticity-robust Fuller (HFUL) estimators. Appendix Table A.8 presents the estimated betas across these methods, along with the baseline specification. The divergence falls in a relatively narrow range between 431 and 492.

Despite the similarity of estimates across estimators, the over-identification tests (e.g., Anderson-Rubin Chi-square test, and Chao-Hausman-Newey-Swanson-Woutersen test) reject the null hypothesis of homogeneous instruments. In Appendix Figure A.9, we plot the coefficients of the just-identified estimate of each IV separately. One observes that the estimates vary widely across sectors, suggesting the heterogeneous effects identified by the different instruments. However, we note that the heterogeneous effects are likely driven by sectors that do not meaningfully contribute to the identification: sectors with large Rotemberg weights or high F-statistics are all clustered around the baseline estimate of 431.

4.5 Robustness

We demonstrate in Appendix Table A.9 that the aforementioned results using both empirical strategies are robust to a variety of changes to the specification and sample. In Panel A, we replicate the baseline estimates using both empirical strategies, corresponding to Table 2, columns 3 and 6.

Alternative sample First, one may be concerned that the relationship of power derived from trade and geopolitical interaction that we identify only applies to hegemon and great power competition, such as that between the US and China. We re-estimate baseline specifications but exclude all country pairs that involve China, USA, or Russia. In Panel B.1 we demonstrate that the coefficients are quantitatively very similar to those in the full-sample result. Second, we restrict our baseline analyses to trade and engagement data from the years 2001-2021 because of changes in trade data procedures in the BACI dataset that occurred in 2000.[29] We show in Panel B.2 that including the years 1995-2000 decreases

29. Specifically, the threshold of trade between two countries in a given sector for which BACI records a positive trade flow was lowered in 2000, leading to a large jump in trade and power for many countries that is not representative of true changes, but rather procedural evolution within BACI.

the size of the coefficients on *Power* but they remain statistically significant at the 1% level. This change is unsurprising, given that the explanatory power of trade asymmetry for bilateral engagement would naturally decrease if there is an apparent change in power that is completely unrelated to engagement, resulting from the procedural shift in trade data. Third, our main results feature undirected pairs, and treat power asymmetry as a measure of the gap in relative power, without assigning a more or less powerful country within the pair. Doing so may violate the directional consistency since an observation where $\bar{s}_{nit} - \bar{s}_{int}$ is positive may have negative $b_{nit} - b_{int}$. To mitigate this concern, we also estimate the regression while restricting to a sample for which each country within every pair is always the more/less powerful country in that pair in order to maintain directional consistency. We find slightly larger coefficients in Panel B.3.

Alternative controls and clustering Our main specification features country pair and year fixed effects, so as to isolate within-pair over-time variation in the relationship of trade asymmetry to engagement. We consider two alternative specifications on fixed effects. First, we control for coercer-year and target-year fixed effects to account for time-varying coercer or target country specific factors that may shape bilateral engagement. As shown in Panel C.1, the pattern we document between power and engagement remains statistically robust. Second, it is possible that the relevant unit for fixed effects should be countries, rather than country pairs. We implement fixed effects on the country, rather than country-pair, level, and find in Panel C.2 virtually no difference in comparison to our main results. In addition, we assess alternative choices for standard error clustering. Panel C.3 demonstrates the results of employing two-way clustering of standard errors on pair and year (rather than just pair, as in our main results) and we find little difference with our main result. In Panel C.4, we implement shift–share–robust inference following Adao, Kolesár, and Morales (2019), clustering at the sector level. This approach allows for arbitrary correlation in sectoral shifters across targets, across coercers, and over time, providing an adjustment for the spatial and temporal dependence inherent in the shift–share instrument.[30] The estimate remains statistically significant with this alternative clustering choice.

30. To implement this specification, we use a directed sample in which the power measure is nonnegative over the sample period and an instrument that relies solely on the coercer's global market share and the target's pre-period exposure shares, with all variables kept in levels. This ensures that the power measure and the instrument are aligned in both magnitude and direction. Panel F.2 presents the baseline specification using this alternative sample and variable definition, with standard error clustered at the country-pair level.

Alternative measurements of bilateral engagement Whereas our main result features a pair-level z-score of each category of events within the ICEWS database, we also vary this definition for robustness in several ways. First, instead of using a z-score that sums standard deviations of each unit event interval within a pair-year, we instead standardize the sum of events across all categories within a pair. This ensures the engagement events are standardized to be mean zero and the standard deviation equal to one for all country pairs. Using this alternative standardization, Panel D.1 shows that we again find coefficients statistically significant at the 1% level. Second, our main specification features events in the intensity interval $[-7, 8)$, which includes events that are reasonably close to the notion of peaceful diplomatic engagement. However, it is possible that power could be related to more intense events, such as providing military aid or signing a formal military agreement. Thus, we demonstrate the results of our regression when we do not restrict to the aforementioned interval of events and instead include all events in the pairwise z-score. In Panel D.2, the results of this modification demonstrate a small increase in coefficient size and no change in significance. Third, in the baseline measurement, we treat each event entry as a distinct event. One may be concerned that the same event may be recorded multiple times due to duplicated news coverage (though this could reflect intensity of the event). We construct an alternative measure de-duplicate the events at the country-pairs$\times$event-types$\times$day level, and re-estimate the baseline specification (following the baseline standardization procedure). As shown in Panel D.3, the finding of power increases engagement remains unchanged qualitatively and quantitatively.

Alternative measurements of power Next, we turn to the measurement of power itself. First, for specific country pairs, they may not be engaging in trade activities in all sectors. We alternatively define all sectors K as those actually traded between country pairs of in and re-construct the power measure accordingly. We find that this does not affect the estimates of the relationship between power and bilateral engagement, as shown in Panel E.1. Second, instead of all sectors, we choose $\mathbb{K}$ to maximize elasticity-weighted import level $\frac{V_{nikt}}{\theta_k}$ annually, corresponding to export embargo threats (definitively) on one sector that would induce the largest disruption to total trade volume; we weigh these sectors by their corresponding trade elasticities. This alternative power measure again does not alter the results, as shown in Panel E.2 (note that this modification does not apply to the IV specification). Third, instead of weighing sectors by their trade elasticities, we re-construct the power measure weighing sectors equally, thus without incorporating the estimated trade elasticities which contain significant noise and potential sources of endogeneity. This again does not alter the results qualitatively, as shown in Panel E.3. Fourth, we combine the modifications in Panels E.2 and E.3 where we measure power focusing on the sector that induces the largest disruption to total trade volume, and equally weigh these sectors. As shown in Panel E.4, our main effects are qualitatively unaffected (again this modification does not apply to the IV specification). Fifth, instead of carrying out the measurement at the HS-section level, we define and measure power at the HS-2 sector level. This does not alter the main findings qualitatively, as shown in Panel E.5. Sixth, the baseline definition of power is based on the shares of trade expenditures, derived from the model specification where all countries have the same total expenditure on tradeables. In an alternative specification of power, we use levels of trade expenditure to consider the implications of countries with different sizes and if the marginal cost of concessions does not scale with size. Panel E.6 presents the results and we again observe a positive relationship between bilateral power and subsequent bilateral engagement. Seventh, the baseline measurement of power, using BACI trade data, does not allow us to consider domestic expenditure in the corresponding sector in order to measure expenditure share instead of import share when calculating the dependence share. In an alternative construction of the power measure, we incorporate data from the Eora Global Supply Chain Database to measure domestic expenditure and calculate the dependence share as expenditure share. As shown in Panel E.7, the results are qualitatively unchanged. Finally, to the extent that service sectors are important domains through which countries may exercise trade power, our baseline measure does not capture that due to the lack of service sector data in BACI trade data. In an alternative specification of the power measure, we incorporate trade in services using the Eora Global Supply Chain Database. As shown in Panel E.8, the results are again robust to this modification.

Alternative configuration of the instrument In Panel F.1, we re-estimate the specification where all regressors, including the instruments, are not standardized within the country pairs. In Panel F.2, we again do not standardize the regressors and use only one side of b_{nit} instead of taking a difference between the two directions to instrument power.[31] This is a slightly weaker IV since we only exploit the variation from the more powerful country, but the results remain robust to this alternative specification.

31. This specification is used to compute the Rotemberg weight as recommended by Goldsmith-Pinkham, Sorkin, and Swift (2020), because finite sample decomposition of the linear over-identified GMM estimator requires the instrument to be written as a linear combination of the shift ($\hat{s}_{ik}$) and the share (w_{nk}).

4.6 Does power's ability to stimulate engagement differ across country pairs?

Countries within the European Union We first examine whether power asymmetry affects diplomatic engagement among members of the European Union (EU). The EU combines features of sovereign states with strong norms and restrictions on inter-member interactions, which may differ from how members engage with non-member states.

Specifically, we repeat the empirical specifications in Equations (12) and (15) restricting the sample to the 15 EU members who joined before the sampling period began in 2000. The results, presented in Appendix Table A.10, show a much weaker relationship between bilateral power and engagement within the union — one that is statistically indistinguishable from zero.

We further compare the coefficient estimate of power-engagement relationships among EU members with those among country pairs consisting of EU members and randomly selected non-EU members. We repeat this random draw 500 times, and plot the distribution of estimated coefficients in Appendix Figure A.10. A red vertical line marks the estimate for EU member pairs. The relationship between power and engagement proves substantially stronger when EU members interact with countries outside the union.

These findings suggest that international organizations such as the EU could alter the relationship between power and bilateral engagement as they alter the nature of and impose rules on bilateral engagement. Moreover, the results on EU members indicate that our measure of bilateral power asymmetry indeed captures international rather than intranational forces, specifically shaping countries' outward projection toward one another.

Countries with violent engagement or trade sanctions Next, we examine the opposite end of the spectrum — cases in which countries engage in overt conflict rather than relying solely on latent threats backed by military capacity, or impose trade sanctions rather than merely threatening trade disruption. Such behaviors typically reflect deviations from the equilibrium path (for example, bargaining failure under asymmetric information).

We repeat our baseline analyses in Equations (12) and (15), separating the country pairs that *(i)* have at least one violent or military engagement with each other during the sample period (shown in Appendix Table A.11, Panel A.1), and those who do not (Panel A.2); and *(ii)* have imposed at least one trade sanction on each other during the sample period (Panel B.1-2). The results show that power arising from trade is differentially more likely to induce non-violent engagement among pairs with a history of violent conflict or mutual sanctions over the past two decades.

While only suggestive, this pattern is consistent with an interpretation in which trade power — operating through threats — is complementary to off-path behavior. Under asymmetric information or uncertainty, realized violence or sanctions may discipline beliefs and thereby strengthen the credibility of threats.

4.7 Does power differ across sectors?

Until now, we have focused on countries' power over one another as a whole — either through all trade activities (weighted by trade elasticities) in the baseline power measure or by allowing countries to threaten trade disruptions in sectors that maximize bilateral trade flow changes in alternative measures. In this section, we explicitly examine whether trade in certain sectors yields power that could stimulate particularly more bilateral engagement.

To gauge the contribution of each sector to a country's international power, we take each HS-4 sector as the universe of trade activities and recalculate the baseline power sector-by-sector, without weights. We re-estimate the baseline specification described in Equation (12), replacing overall power with sector-specific measures.

Appendix Figure A.11 presents the distribution of estimated coefficients, where larger coefficient estimates indicate higher sector contribution to international power (all regressors are standardized for comparable magnitudes). Notably, traditionally strategic sectors — such as uranium ore, electronic transformers, optical fibers, and semiconductors — show relatively strong relationships between their power and stimulation of bilateral engagement.[32]

What explains the pattern of heterogeneous sector-specific power's stimulation of bilateral engagement? We start with sector's trade elasticity, corresponding to θ_k in the model and reflecting how sectors with larger adjustment costs would impose more credible threats to countries facing potential disruption (Hirschman 1945).

We follow Broda and Weinstein (2006) to obtain such estimates of trade elasticities at the Harmonized Tariff Schedule (HTS) level, and we match them to the corresponding sectors defined and grouped according to Caliendo and Parro (2015).[33] Figure 3, Panel A,

32. At the HS-section level, the top 3 sectors associated with largest power stimulation of bilateral engagement are: chemical products, optical medical instruments, and machinery electrical equipment. Appendix Figure A.12 presents the coefficient estimates at HS-section level, ranking the sectors in descending order of the estimated coefficients.

33. Specifically, we convert HTS level estimates to HS-section level by taking weighted average using 2015 global trade volume. We keep the main analyses at the Caliendo and Parro (2015) re-grouped sector level because the model assumes Cobb-Douglas utility across sectors and constant elasticity of substitution

presents the estimates of the sector-specific power's impact on stimulating bilateral engagement (y-axis) and the sectors' trade elasticities (x-axis). Consistent with the role that adjustment cost plays in international power, it indeed appears to be the case that the impact of sector-specific power between two countries on their negotiating and engagement is strongly, negatively associated with the underlying trade elasticities of the sector. Such negative relationship can be consistently observed using several alternative measures of trade elasticities (Caliendo and Parro 2015 and Fontagné, Guimbard, and Orefice 2019); these results are reported in Appendix Table A.12.

Multiple factors can influence trade elasticities across sectors. We examine two aspects particularly relevant to the geopolitical context. First, we analyze product complexity, which measures the diversity and sophistication of knowledge required for manufacturing. Using the Product Complexity Index (PCI) from Hidalgo and Hausmann (2009) at the HS-4 level, Figure 3, Panel B, shows the relationship between sector-specific power's impact on bilateral engagement (y-axis) and sectors' PCI (x-axis). Both calculations use HS-4 level data (Appendix Table A.13, Panel A, presents regression results at various sectoral aggregation levels). Power in highly sophisticated sectors generates greater bilateral engagement, consistent with complex products facing higher adjustment costs due to their sophisticated manufacturing processes.

Second, we examine sectors' share of critical goods designated by the International Trade Administration (ITA). We link ITA's categorization to sectors defined at the HS-4 level. In 2015, critical goods comprised 35% of global trade, with 14% of HS-4 sectors containing at least one good classified as critical.[34] Figure 3, Panel C, presents the estimates of the sector-specific power's impact on stimulating bilateral engagement (y-axis), separately for sectors with at least one critical good (left) versus none (right). Appendix Table A.13, Panel B, presents the results in regression form, at various levels of sectoral aggregation. Again, consistent with the adjustment cost interpretation, sectors that have critical goods' presence exhibit greater effective power (in stimulating engagement), as these goods typically prove harder to substitute with alternative products or suppliers.

4.8 Does exporter power differ from importer power?

Our baseline model in Section 2 predicts the following asymmetry: ex-post trade disruptions impose economic damages to the importer — as consumers cannot ex-post adjust

across countries. The Cobb-Douglas assumption is equivalent to assuming an elasticity of substitution equal to one across sectors. This assumption is reasonable across aggregate sectors, and is rejected in the data if the sector definition is too disaggregated.

34. Appendix Figure A.13 plots the share of critical goods in each HS-section. See Appendix D for details of the procedure to distinguish critical vs. non-critical goods and sectors.

their import orders from other trade partners — but not to the exporter, as production labor can be reallocated ex-post. Thus, our baseline measure of power stems from asymmetric import dependence instead of export dependence.

In Appendix A.1, we expand the model to include irreversible investments (i.e., labor that must be committed ex-ante) made before trade occurs. We show that in that setting, trade disruptions can indeed inflict economic losses on the exporting country, but these losses remain relatively small: specifically, they are only second-order relative to the share of the exporter's output directed toward the importing country. By contrast, the importing country suffers first-order losses, proportional to its expenditure share on goods from the exporter.

These predictions imply that, to the extent that bilateral engagement and negotiations are responding to the underlying threats arising from power between two countries, power arising from asymmetric import dependence — *exporter power* (our baseline measure of power) — should generate a bigger impact than that arising from asymmetric export dependence — *importer power*.

We empirically test this prediction by augmenting our baseline regressions (Equations 12 and 15) to include both exporter and importer power measures.[35] Specifically, to capture importer power, we reconstruct our baseline exporter power asymmetry measure (as in Section 3.1) by replacing import dependence with export dependence. Thus, country i's importer power towards another country n in year t is the difference between n's export dependence on i and i's export dependence on n:

$$Power^{\text{importer}}_{i\to n,t} = \sum_{k\in\mathbb{K}} \frac{1}{\theta_k}\left(\frac{V_{inkt}}{\sum_{k'}\sum_j V_{jnk't}} - \frac{V_{nikt}}{\sum_{k'}\sum_j V_{jik't}}\right). \tag{16}$$

The results presented in Appendix Table A.14 are consistent with our model predictions. Across the regression specifications with various combinations of bilateral economic size and trade flow controls and across both empirical strategies, we observe a positive relationship — but only sometimes statistically significant and when so, with significantly smaller magnitude (approximately half the size as compared to exporter power) — between importer power and the corresponding bilateral engagement and negotiations.[36]

35. While exporter power and importer power between specific pairs of countries are positively correlated, they by no means perfectly align (see Appendix Figure A.14 for a scatter plot of average pairwise exporter power and importer power against the 45-degree line).

36. Positive association of importer power and bilateral engagement could result from a range of factors. First, threats on trade disruption may not be marginal in terms of quantity, but can be inframarginal. Second, indirect influence and complex supply chain, which we abstract away from in this study, imply that one country's import is another country's export either through the influence network or supply chain. Both of these mechanisms could generate positive coefficients of importer power on bilateral engagement, although the magnitude should always be smaller than that of exporter power.

4.9 How does power arising from import dependence interact with other sources of international influence?

Finally, we explore the relationship between international power arising from asymmetric import dependence and other sources of international influence such as military capacity, aid dependence, and sovereign debt exposure. In particular, we investigate whether these other sources of influence strengthen or weaken trade power's ability to drive bilateral negotiations and engagement.

We re-estimate the baseline specification in Equations (12), and now additionally control for the country pairs' differences in military capacity, aid dependence relationships, and sovereign debt exposure with one another. These are several key dimensions of international influence suggested to affect international relations. The estimated coefficients are presented in Appendix Table A.15, columns 1, 4, and 7. One observes that while military capacity, aid dependence, and sovereign debt exposure are associated with more bilateral engagement and negotiations themselves, the relationship we identify between trade power and bilateral engagement remains quantitatively unaffected when these sources of international influence are controlled for.

Next, we re-estimate the specification in Equations (12), splitting the sample based on country pairs who exhibit low versus high level of international influence in dimensions other than trade. In particular, columns 2 and 3 show coefficient estimates on country pairs with below and above median level of asymmetry in military capacity, respectively. Columns 5 and 6 show coefficient estimates on country pairs with no aid dependence relationship (74.3% of the country pairs) and with positive (in vast majority of the cases, one-sided) aid dependence (25.7% of the country pairs), respectively. Columns 8 and 9 show coefficient estimates on country pairs without and with sovereign debt exposure, respectively. We observe that the relationship between trade power and bilateral engagements grows stronger when other dimensions of international influence (in particular, military capacity and sovereign debt) are present between countries.

While it is beyond the scope of this paper to identify the interaction between trade power and international influence stemming from military capacity, aid reliance and sovereign debt, the pattern observed here suggests that different sources of power and influence are complementary in achieving geopolitical deterrence and threats, aligned with forces underlying the formation of hegemony (e.g., Clayton, Maggiori, and Schreger 2025).

5 Do adversarial relationships affect power build-up?

In the previous section, we showed that power asymmetry can affect diplomatic engagement and negotiation. A key question emerges: do countries strategically adjust their trade-based power in anticipation of changes in bilateral relationships and negotiation frequencies? We examine this question in this section.

As outlined in the model in Section 2, a central prediction is that shocks to geopolitical alignment — such as rising bilateral tension — would prompt policy changes and affect power build-up. This is what we aim to identify empirically.

We begin by developing a measurement of geopolitical alignment in Section 5.1. We then describe our empirical strategy, which uses domestic electoral turnovers as unanticipated shocks to geopolitical alignment, in Section 5.2. Finally, in Section 5.3, we present our results.

5.1 Measuring geopolitical alignment

An important building block of the empirical investigation of strategic power build-up is to develop a measure of bilateral geopolitical alignment that changes over time.

Creating this time-varying alignment measure presents three main challenges. First, while the metric must capture both cross-sectional and over-time variations, existing measures often capture only one. Second, the measure should encompass many country pairs worldwide, but current metrics often focus on just a few major geopolitical players. Third, since we aim to study how policy and bilateral power respond to geopolitical alignment shifts, the measure must not directly incorporate trade relations and policy alignment.[37]

We address these challenges by combining two distinct sources of data: the Gallup World Poll's disapproval polling of world leaders and the Polity Project's world regime ratings. The Gallup World Poll surveys roughly 1,000 people in each of 164 countries annually, measuring disapproval ratings of US, Russian, and Chinese leadership. Our second source, the Polity ratings, evaluates how democratic or autocratic a country's domestic institution is. These sources complement each other: Gallup reveals year-to-year changes in how populations view global powers, while Polity shows deeper, more stable institutional alignments. Since neither measure directly addresses trade policy, they reveal shifts in geopolitical preferences that are independent of trade relationships.

To create a time-varying, bilateral measure of political alignments across country pairs,

37. This makes measures based on the United Nations General Assembly (UNGA) voting not ideal. Because UNGA votes often address trade issues directly, alignment measures based on these votes risk conflating political alignment with trade itself.

we estimate a statistical model of political ideal points. Specifically, we assume each country's political position can be located on a two-dimensional plane. We treat the three major economies — the US, Russia, and China — as satellite countries, using US and Russian disapproval ratings toward each other and toward China as information on the relative positions of these satellites in each year. From there, the intuition is simple: every other (non-satellite) country, for example France, reports disapproval ratings of Russia, China, and the US. Treating these disapproval rates as distances from the three satellites plus Gaussian noise — interpreted as measurement error — allows us to locate France's political position.[38] Conceptually, France's location is given by the intersection of three circles, each drawn around a satellite country with a radius equal to France's distance from that satellite. Hence, for every possible coordinate in the two-dimensional space, there is some likelihood that France could be at that location. If France reports high disapproval of Russia and China but low disapproval of the US, France would be more likely to be near the US's coordinates and farther from the other two anchor countries. We thus define, for each country-year, a likelihood function at each coordinate, indicating how probable the implied distances to the three satellites are compared to the observed Gallup disapproval ratings. We estimate the variance of the Gaussian errors using maximum likelihood.

Assuming a uniform prior, the estimated likelihood function is proportional to the Bayesian posterior distribution of a given country-year's political location in the two-dimensional space. We measure bilateral political alignment by taking the Wasserstein distance between the posterior distributions of each country pair. The Wasserstein distance is a metric widely used in optimal transport and particularly suited to spaces where underlying geometry is relevant. Its useful properties (and why it is preferable to alternatives such as Kullback–Leibler Divergence) are well-known: it is symmetric and remains well-defined even when the two distributions have different supports.[39]

Most of our empirical results rely on the rich over-time variation in bilateral alignment within country-pairs from the Gallup data. To ensure the cross-sectional variation in our alignment measure interpretable, we make use of bilateral differences in Polity scores, which captures differences in institutional characteristics. Since institutions typically change slowly, these scores provide a cross-sectional "anchor" for alignment.

To merge these two sources of political distance, we take a convex combination of the normalized Gallup and Polity distances. Let d_{ijt}^{Gallup} and d_{ijt}^{Polity} be the respective distances

38. This procedure is analogous to the triangulation process used in GPS geolocation from distances to satellites.

39. K-L Divergence does not satisfy these properties. Further, the issue of differing supports is central when dealing with empirical distributions—some points may appear to have probability zero, making the K-L Divergence between such empirical distributions infinite.

between countries i and j in year t. We define bilateral alignment as

$$\text{Alignment}_{ijt} = 1 - \left[\alpha d_{ijt}^{\text{Gallup}} + (1-\alpha) d_{ijt}^{\text{Polity}}\right], \tag{17}$$

where $\alpha = 0.5$ and the distances d_{ijt}^{Gallup} and d_{ijt}^{Polity} are the distances between countries i and j based on the Gallup and Polity data respectively. Appendix E provides additional details on the estimation of the statistical model of political proximity.

Geopolitical alignment captures rich over-time changes This measure of $Alignment_{ijt}$ yields rich and intuitive cross-sectional and over-time variation. For example, Appendix Figure A.15 plots the geopolitical alignment with Ukraine between 2011 and 2021 among several states that belonged to the former Soviet Union (e.g., Armenia, Georgia, Kazakhstan, etc.). One observes a sharp drop in alignment with Ukraine following the 2014 Russian Annexation of the Crimea. Note that Ukraine's alignment with these states are *not* directly observed, but rather inferred through the proximity model. Despite this, the bilateral alignment appears to reflect expected changes in geopolitical alignment.

Geopolitical alignment reflects UNGA vote agreement Yet another way to validate the alignment measure is to examine whether it can predict agreement in United Nations General Assembly voting, a measure often used to capture geopolitical alignment (see, among others, Bailey, Strezhnev, and Voeten 2017; Appendix F provides details on the measurement construction). Appendix Table A.16 presents the estimated correlation between $Alignment_{ijt}$ and corresponding UN vote agreement. Reassuringly, $Alignment_{ijt}$ strongly predicts UN vote agreement. However, such correlation substantially weakens as we control for country pair fixed effects, suggesting that much of the positive correlation between the two measures of geopolitical alignment is driven by cross-sectional variation, and there exists limited high-frequency changes in UN vote agreement (in part because the voting data is relatively sparse).[40]

5.2 Empirical strategy: electoral turnover and bilateral alignment changes

Estimating the causal effect of geopolitical alignment on bilateral power build-up faces two key empirical challenges. First, geopolitical alignment changes may be a result of bilateral trade patterns. We need to isolate alignment shifts that are independent of socioeconomic, political, or bilateral conditions that could determine trade flows and power

40. In fact, according to an ANOVA decomposition, among the explainable components, there are at least 6 times more over-time variation captured by our geopolitical alignment measure than the alignment measure derived from the UNGA voting agreement.

between country pairs. Second, since both countries can respond to geopolitical alignment shifts, the net change in power between them is ambiguous. We need to identify situations where one country in the pair is more able to respond to bilateral alignment shifts.

To address these challenges, we examine close domestic elections in country A that result in political turnover, which may sharply alter bilateral alignment trajectories between country pairs AB. We examine changes in B's power over A as a result. Specifically, we focus on *directed* power, defined as asymmetric import dependence where B is the coercer and A is the target ($Power_{B \to A}$).

This empirical strategy addresses the first challenge described above because bilateral alignment shifts resulting from A's domestic electoral turnover are plausibly outside country B's control and unrelated to B's domestic politics or trade policies.

It also resolves the second challenge because, as we show next, A's electoral turnover alters its geopolitical alignment with other countries in opposite directions depending on their prior alignment patterns. As a result, although B's power over A reflects both countries' responses, A would need to implement offsetting bilateral policies — in opposite directions —across many partners worldwide to systematically respond to these alignment changes. By contrast, B can respond to changes in its alignment with A — and with A alone — by adopting targeted bilateral policies, which can be more explicit and feasible.

To provide an intuition on the sources of identifying variations, consider France and the US. Their bilateral relationship changed dramatically in 2016 when Trump and the Republican Party won the presidency.[41] The resulting shifts in bilateral alignment were exogenous to France, though France could later adjust its trade policies strategically to build power in response to declining alignment and potential future hostile engagement. Appendix Figure A.16, Panel A, shows how US geopolitical alignment shifted across multiple countries during presidential turnover in 2016. No such shift occurred in 2012 when the election maintained party continuity.

Yet another example is Poland and its presidential and parliamentary elections in 2015. The conservative party Law and Justice not only captured the legislature but also placed its nominee in the presidency, marking a decisive right shift in Poland's political landscape. Appendix Figure A.16, Panel B, shows that Canada and Germany, who used to be more aligned with Poland prior to its 2015 election, turned more hostile in their relationship with Poland; the opposite is true among Russia and China. Given the closeness of the

41. While the election of President Trump in 2016 was largely unanticipated, it is not classified as a close election given the outcome of 304 (Trump) vs. 227 (Clinton) in the electoral college.

election, it is plausible that countries such as Canada, Germany, Russia, and China did not anticipate such shifts — and in distinct directions — in Poland's geopolitical alignment; we examine changes in their power toward Poland in response.

We measure electoral turnover following Marx, Pons, and Rollet (2024), which covers 155 presidential elections and 170 parliamentary elections among 177 countries during 2012 to 2018.[42] We define close elections as those with winning margins smaller than 5%; see Appendix Table A.17 for a list of close elections and the turnover outcome during the sample period.[43] Since we focus on countries' responses to changes in bilateral alignment due to others' domestic electoral turnover, we exclude country-pairs that have both countries experiencing close elections within a 3-year span of each other (this amounts to 1,369 country-pairs out of 23,516 in total). Overall, 14,392 country pairs do not experience a close election on either side; 8,064 country-pairs experienced a close election on one side of the pair; and 188 country-pairs experienced close elections on both sides and the elections are more than 3 years apart.

1st stage results We denote the country that has experienced an election during the sample period as country A, and the country that may be responding to possible changes in geopolitical alignment as country B. We estimate the following 1st stage regression, where we predict trend-break in bilateral alignment between A and B due to electoral turnover from a close election in country A:

$$\begin{aligned}&\text{Alignment}_{\{AB\},\{t+1,t+2\}} = \beta_1 \text{Alignment}_{\{AB\},t-1} + \beta_2 \mathbb{1}\{\text{Turnover}\}_{A,t} + \\ &\beta_3 \text{Alignment}_{\{AB\},t-1} \times \mathbb{1}\{\text{Turnover}\}_{A,t} + \beta_4 \mathbb{1}\{\text{No turnover}\}_{A,t} + \\ &\beta_5 \text{Alignment}_{\{AB\},t-1} \times \mathbb{1}\{\text{No turnover}\}_{\{A\},t} + \beta_6 \text{GDP difference}_{B\to A,t-1} + \\ &\beta_7 \text{Total trade}_{\{AB\},t-1} + \beta_8 \text{Power}_{B\to A,t-1} + \alpha_{\{AB\}} + \gamma_t + \epsilon_{\{AB\},t}, \qquad (18)\end{aligned}$$

where the notation $B \to A$ denotes that the variable is directed, consisting of country B's quantity minus country A's quantity (e.g., $GDP_B - GDP_A$). $\{AB\}$ denotes that the variable is undirected (e.g., alignment$_{\{AB\}}$). We note the timing of the outcome variable and the covariates: in the baseline specification, the outcome variable measures alignment levels averaged during the two years after the election year t, and all covariates (besides those related to the election itself) are the year before the election. We assess and

42. We restrict the sample to 2011 and on due to the time period which we can measure bilateral alignment, and so only use elections starting in 2012 since we control for lagged alignment.

43. In parliamentary systems, a party that wins the highest vote share may not necessarily form the government, as coalition dynamics among other parties can lead to ruling party turnover. Therefore, in parliamentary elections, we also include electoral turnovers with winning parties with negative winning vote margins.

demonstrate the robustness of the results using alternative timing choices of the outcome variable. A given election in year t may occur before or after the data used to construct the alignment measure for year t is collected; as a result, we do not use data from the election year itself to ensure that the alignment measure (and all other covariates) accurately reflect changes in response to an election.

Appendix Figure A.17 illustrates the 1st stage results visually: we plot pre-election alignment (on x-axis) against post-election alignment (on y-axis), separately for A's elections that resulted in political turnover and those that did not. In addition, we also plot past alignment ($t-1$) against future alignment ($t+1$) during periods without any election. One observes strong path-dependence in bilateral alignment during years without election, or during elections without political turnover. In contrast, A's domestic political turnover substantially reduces the degree of path dependence in its bilateral alignment with other countries.

Table 3, Panel A, presents the 1st stage estimates. One observes that past alignment between countries A and B positively predicts their future alignment when there is no electoral turnover in country A, indicating path dependence in bilateral alignment when A's domestic political conditions remain stable. However, when electoral turnover occurs in A, past alignment becomes negatively associated with future alignment, suggesting a reversal of trend. Note that reversal of trend does not necessarily mean a decrease in bilateral alignment as it hinges on the pre-election status quo: if countries are hostile (friendly), then electoral turnover is associated with movement towards a relatively more friendly (hostile) bilateral relationship.

Identification assumption and threats to identification The validity of the empirical strategy and causal interpretation rests on two important assumptions.

First, changes in alignment due to A's domestic electoral turnover is exogenous to existing bilateral conditions between A and B. To gauge whether the electoral turnover is indeed unanticipated by other countries in the bilateral relationship, we examine whether domestic electoral turnover in A can be predicted by the socioeconomic and political conditions in country B, or by the contemporaneous bilateral socioeconomic and geopolitical factors between AB. Appendix Table A.18 presents the results of the tests: reassuringly, we do not observe overt pattern that electoral turnover is systematically associated with either country-level or bilateral socioeconomic and (geo)political conditions that may be correlated with subsequent power build-up.[44]

44. Moreover, if the result of an upcoming election were already clear to another country, then that knowledge should already be reflected in the linear term $\text{Alignment}_{\{AB\},t-1}$.

Second, electoral turnover in A affects B's power build-up toward A only through changes in bilateral alignment. The exclusion restriction could be violated if A's electoral turnover introduces broad policy changes affecting all countries' trade directly. Our empirical design rules out violations stemming from A's general policy shifts that affect all trading partners. Electoral turnover leads to opposite changes in A's alignment with other countries, with the direction depending on pre-election alignment levels. Indeed, as illustrated in Appendix Table A.19, electoral turnover in A does *not* predict average changes in alignment among countries B, nor does it predict average changes in power from B to A. In other words, it is critical to allow for heterogeneous changes in both alignment and power after A's election.

Moreover, the exclusion restriction could be violated if the electoral turnover of A leads to its creation of policies that target specific countries B and their trade activities regardless of the underlying alignment shifts between the countries. While our empirical design cannot directly rule out that country A may initiate targeted trade policy changes toward specific countries B after its electoral turnover, this scenario would require A to simultaneously impose distinct and opposite policies on all other countries that exactly match previous alignment levels and post-election alignment changes. Indeed, our analysis of trade policy changes between countries A and B in Section 5.4 shows that following A's domestic election, we do not observe notable changes in policies A initiated targeting country B. In contrast, we observe substantially more policies initiated by B targeting A.

5.3 Results

Having demonstrated a strong 1st stage where unanticipated electoral turnover in one country within the country pair predicts bilateral alignment changes, we now proceed to investigate whether and how the other countries facing such sudden shifts in bilateral alignment respond in terms of power.

We estimate the following regression specification:

$$\begin{aligned}&\text{Power}_{B\to A,\{t+1,t+2\}} = \beta_1 \widehat{\text{Alignment}}_{\{AB\},\{t+1,t+2\}} + \\ &\beta_2 \text{Alignment}_{\{AB\},t-1} + \beta_3 \text{GDP difference}_{B\to A,t-1} + \beta_4 \text{Total trade}_{\{AB\},t-1} + \\ &\beta_5 \text{Power}_{B\to A,t-1} + \alpha_{\{AB\}} + \gamma_t + \epsilon_{\{AB\},t}, \end{aligned} \tag{19}$$

where predicted alignment level corresponds to the alignment level in the year after the election; the GDP difference, total trade, alignment, and power variables are all the same as in the first stage specification. The key outcome of interest is the power that country B holds against country A that has experienced electoral turnover.

Table 3, Panel B, presents the regression estimates. We include all the fixed effects in all columns, and we gradually add controls for the GDP differences and total trade from column 1 to 3. Throughout these specifications, we find negative, statistically significant coefficients on predicted alignment change, indicating that countries (not experiencing the electoral turnover themselves) are responding to a reduction in bilateral alignment by increasing the power (asymmetric import dependence) they hold against the partners. To gauge the magnitude, a one standard deviation decrease in alignment would trigger a 0.39 standard deviation increase in power build-up, or, would move a pair starting at the median level of power to the 85th percentile of power.

5.3.1 Robustness

We demonstrate in Appendix Table A.20 that the aforementioned results are robust to a variety of changes to the specification and sample. In Panel A, we replicate the baseline results shown in Table 3, Panel B.

Alternative timing Our main specification examines how geopolitical alignment during the two years after the election affects power averaged during the two years after the election. This specification aims to strike a balance between capturing quick, abrupt changes in alignment and allowing power adjustment to take time to realize. In Appendix Table A.20, Panels B.1 to B.3, we re-estimate the baseline specification with a variety of alternative timing choices, including measuring either alignment level or power during the first year after the election, or averaged across the entire electoral cycle following the election. We find that using alternative choices of timing on either alignment measures and power measures, the estimated coefficients look similar in size and are significant, suggesting that the results we document are not sensitive to the precise timing relative to the occurrence of the close election.

Alternative measurements of power Next, we turn to the measurement of power itself and assess the robustness of the results using alternative power measures introduced in earlier sections of the paper. First, for specific country pairs, they may not be engaging in trade activities in all sectors. We alternatively define all sectors K as those actually traded between country pairs of in and re-construct the power measure accordingly. We find that this does not affect the estimates of the relationship between geopolitical alignment and power build-up, as shown in Panel C.1. Second, instead of all sectors, we choose $\mathbb{K}$ to maximize elasticity-weighted import level $\frac{V_{nikt}}{\theta_k}$ annually, corresponding to export embargo threats (definitively) on one sector that would induce the largest disruption to total trade volume; we weigh these sectors by their corresponding trade elasticities. This alternative power measure again does not alter the results, as shown in Panel C.2. Third, instead of weighing sectors by their trade elasticities, we re-construct the power measure weighing sectors equally, thus without incorporating the estimated trade elasticities which may contain significant noise and potential sources of endogeneity. This again does not alter the results qualitatively, as shown in Panel C.3. Fourth, we combine the modifications in Panels C.2 and C.3 where we measure power focusing on the sector that induces the largest disruption to total trade volume, and equally weigh these sectors. As shown in Panel C.4, our main effects are qualitatively unaffected. Fifth, instead of carrying out the measurement at the HS-section level, we define and measure power at the HS-2 sector level. This does not alter the main findings qualitatively, as shown in Panel C.5. Sixth, the baseline definition of power is based on the shares of trade expenditures, derived from the model specification where all countries have the same total expenditure on tradeables. In an alternative specification of power, we use levels of trade expenditure to consider the implications of countries with different sizes and if the marginal cost of concessions does not scale with size. Panel C.6 presents the result. Interestingly, we find a null effect, suggesting that power build-up may indeed scale with size. Seventh, the baseline measurement of power, using BACI trade data, does not allow us to consider domestic expenditure in the corresponding sector in order to measure expenditure share instead of import share when calculating the dependence share. In an alternative construction of the power measure, we incorporate data from the Eora Global Supply Chain Database to measure domestic expenditure and calculate the dependence share as expenditure share. As shown in Panel C.7, the results are qualitatively unchanged, though statistically insignificant. Finally, to the extent that service sectors are important domains through which countries may exercise trade power, our baseline measure does not capture that due to the lack of service sector data in BACI trade data. In an alternative specification of the power measure, we incorporate trade in services using the Eora Global Supply Chain Database. As shown in Panel C.8, the results are qualitatively and quantitatively robust to this modification.

Alternative sample First, a small subset of pairs (1,369/23,516) are excluded from the main results as both countries in those pairs experience close presidential or parliamentary elections. Given the difficulties in identification that are introduced from attempting to use elections on both sides of a pair, we instead estimate the effects of the first election within the pair so as to not lose those pairs completely. Given that the longest post-election window is three years, only 188 of the 1,369 pairs with elections on both sides are feasible to use for identification. As presented in Panel D.1, inclusion of these 188 pairs results in only minor changes of coefficient sizes. Second, there is no systematic way to define which country is A or B if neither country has an election. To demonstrate that our results hold regardless of how the ordered pairs with no elections are chosen, in Panel D.2, we re-estimate the baseline specification for a single random draw of said pairs.[45]

Alternative definition of close election Third, our baseline definition of close election margins is 5% margin of victory. We also test our 2nd stage results using margins of victory thresholds of 4%, 6%, and 8% in order to illustrate that the negative relationship between future alignment and power is not overly sensitive to the choice of vote margin threshold. The results are presented in Panels E.1-3; we find little change in the significance of the coefficients and an increase in the size of the coefficients. In addition, we test a specification in which we make use of only presidential elections, rather than both these and parliamentary elections. Because of the emergence of coalitions after parliamentary elections in which no party wins an absolute majority, there exist elections in which the incumbent party won more votes than the main challenger and yet turnover still occurred. In our baseline specification, we considered these parliamentary elections as "close" since the nature of the result was that no one party (or ex-ante coalition) had sufficient votes to win the election outright. In Panel E.4, we exclude parliamentary elections entirely, and the results again show little change in comparison to our baseline coefficients.

Alternative measurement of geopolitical alignment Finally, we evaluate how robust our results are to alternative measures of geopolitical alignment. As described in Section 5.1, our baseline alignment measure gives equal weight to the Gallup Poll and Polity ratings ($\alpha = 0.5$). In Panels F.1 and F.2, we test alternative weightings: assigning more weight to the Polity ratings ($\alpha = 0.25$) or to the Gallup Poll ($\alpha = 0.75$). The negative relationship between geopolitical alignment and power build-up remains consistent across these different measures.

5.4 Changes in trade shares and trade policies

Import vs. export shares In this section, we decompose the changes in power previously documented. Country B's increase in its power over A could be achieved through its increasing export towards A, or reducing import from A, or both simultaneously.

Specifically, we decompose the effect of changes in geopolitical alignment on country B's power build-up towards A by estimating the following specification, replacing B's

45. In Appendix Figure A.18, we show the coefficient and standard errors for 50 random draws of ordered pairs with no elections; every coefficient is similar to that of our baseline specification.

power over A (in the baseline specification (19)) with B's import or export shares with country A:

$$\begin{aligned}\text{Trade shares}_{B\to A,\{t+1,t+2\}} = \beta_1 \widehat{\text{Alignment}}_{\{AB\},\{t+1,t+2\}} + \beta_2 \text{Alignment}_{\{AB\},t-1} + \\ \beta_3 \text{GDP difference}_{B\to A,t-1} + \beta_4 \text{Total trade}_{\{AB\},t-1} + \\ \beta_5 \text{Power}_{B\to A,t-1} + \gamma_t + \alpha_{\{AB\}} + \epsilon_{\{AB\},t},\end{aligned} \tag{20}$$

where Trade shares$_{B\to A,\{t+1,t+2\}}$ denotes the average import or export shares from country B to A during two years after A's election.[46]

Columns 1 and 2 in Panel A of Table 4 present the results. Country B responds to (geopolitically) unfavorable election results in country A by adjusting both imports and exports, but B's reduction in imports from A is noticeably stronger. Such response is defensive rather than offensive: instead of raising exports to increase power, country B lowers imports from A which reduces its import dependence on A and thus diminishes A's power over B. Adjustments on the import margin (e.g., through diversifying to other sourcing countries) may be a less costly action for B to take, than quickly ramping up export towards A.

Trade policies We next examine whether changes in power are accompanied by shifts in trade policies. Note that the presence of trade policy changes does not preclude the possibility that changes in asymmetric import dependence are achieved through alternative policies such as industrial policies, or through non-policy channels such as direct order to dominant firms in the industry.

In order to evaluate policy changes, we use policies that may affect either imports or exports compiled by the Global Trade Alert (GTA). This dataset collects records of changes to trade policies from governments around the world, including tariffs, subsidies, localization requirements, and more.[47] In particular, it distinguishes newly initiated (or revoked) policies that aim at liberalizing or restricting trade between countries. For example, in 2018 the Trump administration appealed to national security concerns and announced a 25% tariff on steel imports; in 2020, certain products were made to be exempt from this tariff as they were not domestically produced in a quantity large enough

46. Import shares are on average more than an order of magnitude smaller than export shares. In order to make comparable the coefficients in the specifications concerning export or import shares, we rescale the trade shares by their sample mean. We perform standardization of variables on the pair level. We rescale the variable by the mean of either import or export shares in the entire sample.

47. Each data point starts as a statement by some government agency, and then is processed and categorized into a specific type of intervention whose source and target(s) are identified. The dataset covers 56,497 unique trade related policies (e.g., import tariff and export subsidy) between 225 countries over 2008 to 2023.

to justify the tariff. A substantial share of the policies recorded in the GTA are not bilaterally targeted (e.g., a country initiated a unilateral policy that affects exports to all other countries). Our analyses focus on trade policies that mention at least one explicitly targeted country. Overall, 2,485 targeted trade policies are included in our analyses.

We define the outcome of interest — *net liberal policies* — as the difference in the count of liberal versus restrictive trade policies from country B to country A during a given year t.[48] Since a country may increase (or decrease) both its liberalizing and restrictive trade policies with another country, we consider the difference to be the relevant outcome. For a given country pair, even if the number of export restrictions were to increase, this could be outpaced by a larger increase in liberal policy implementation. Finally, we also introduce an outcome called *power-promoting policies*, which is the difference between net liberal export policies and net liberal import policies. This variable is defined such that a higher value, indicating more liberal export policies and/or more restrictive import policies, should be associated with a higher value of power.

Mirroring the baseline specification in Equation (19), we estimate the following specification:

$$\begin{aligned}\text{Trade policies}_{B\to A,\{t+1,t+2\}} = {} & \beta_1 \widehat{\text{Alignment}}_{\{AB\},\{t+1,t+2\}} + \beta_2 \text{Alignment}_{\{AB\},t-1} + \\ & \beta_3 \text{GDP difference}_{B\to A,t-1} + \beta_4 \text{Total trade}_{\{AB\},t-1} + \\ & \beta_5 \text{Trade policies}_{B\to A,t-1} + \gamma_t + \alpha_{\{AB\}} + \epsilon_{\{AB\},t} \end{aligned} \tag{21}$$

Table 4, columns 3-5 present the results. Column 3 examines the degree to which country B's policies towards A are power-promoting following A's electoral turnover. We observe that when bilateral alignment decreases between A and B due to A's domestic political turnover, country B responds by implementing power-promoting (i.e. more exports, less imports) trade policies toward A (on net) over the two years following the election. These policy changes are driven by both initiating more restrictive policies and terminating liberal ones.

Columns 4 and 5 analyze net liberal policies for imports and exports separately. Consistent with the trade share patterns documented above, where responses occur primarily in imports, we observe significant changes in B's import policies toward A but minimal changes in export policies. Note that export policies are much less prevalent than import policies in general, making this test statistically less powered than the net liberal policies

48. We identify targeted policies using the *State Act Title* field in the GTA data, which provides a brief description and explicitly mentions the target country, rather than relying on GTA's pre-coded list of affected countries. This approach avoids conflating policies with all trading partners of the implementing country. We count only newly implemented policies to capture the flow of policy changes, rather than accumulating stock. Liberalizing and restrictive classifications follow GTA's evaluation coding.

concerning imports.

Finally, in Appendix Table A.24, we examine trade policies that country A imposes on B following A's domestic electoral turnover. We find minimal changes in A's policies regarding both imports from and exports to B. This finding supports a key feature of the empirical strategy described in Section 5.2: electoral turnover in A affects B's trade (and power) responses, rather than through A's targeted trade policy changes toward specific countries B. This is likely a result of A's electoral turnover shifts its alignment with countries in the rest of the world in opposite directions depending on pre-election alignment trends, making individually tailored and targeted policies difficult to devise from A's perspective. We cannot rule out the possibility that A could respond through non-bilateral trade policies or policies beyond trade, and thus one should interpret the power change we identify as that net of any responses by A.

6 Conclusion

In this paper, we study geopolitical power acquired through trade activities across countries. We show that it is a distinct element that is related to but by no means simply mirroring overall differences in economic size and trade volumes. Such international power affects engagement and negotiation. Moreover, power may be accumulated strategically in response to changes in alignment (and future negotiations).

Our results speak to contemporary debates about multilateral and bilateral trade deficits. Trade economists typically view multilateral deficits as a macroeconomic outcome — driven by saving and investment — and bilateral balances as an accounting artifact of comparative advantage within a global network. A key implication of our model and evidence is that bilateral trade imbalances can nevertheless be economically meaningful because they help shape the configuration of international power: persistent bilateral dependence can create asymmetric leverage even when aggregate trade volumes or overall economic size do not. In this sense, our notion of trade-based power is distinct from, but resonates with, historical mercantilist concerns about "power and plenty" (Viner 1948). While mercantilism is often caricatured as "exports are good, imports are bad," our results suggest a more precise channel: countries may have incentives to structure trade relationships in ways that foster export dependence — and thus bargaining leverage — highlighting how balance-of-trade patterns can matter for geopolitical reasons.

More generally, our findings highlight the trade-off between economic efficiency and security. Trade according to countries' comparative advantage may expose countries to power of their trade partners. Efficiency-maximizing trade patterns may not necessarily be a power-maximizing strategy. We show that power considerations in trade, in their ability to extract geopolitical rents, are negative-sum, in contrast with the positive-sum nature of the efficiency enhancing trade incentives through the logic of comparative advantage. As the world grows into a connected one after decades of expansion of globalization, and security and power considerations begin to generate backlash on globalization, it is of vital importance to further understand the sources and implications of a global trade landscape when power becomes an increasingly salient consideration.

As a first step towards understanding of international power stemming from trade, this paper has a number of important omissions. The model and the empirical exercises only consider direct influence and ignore network of influence or indirect influence through third countries or supply chain linkages. Moreover, we treat each sovereign country as individual unit of exerting power, hence abstracting from international organizations or country clusters. Having demonstrated that bilateral power matters, it is vitally important to unpack how much of bilateral power reflects forces beyond simple bilateral interactions through indirect links, networks, and organizations.[49] We believe this is one of the many exciting directions for future research on this topic.

49. Indeed, we find that when we group members in the European Union together as a single country, we observe a substantial change in the power it can exert towards others as compared to when EU members are treated as individual entities. For example, China exerts positive power over each individual EU member country; however, EU as a single entity is able to exert positive power towards China (see Appendix Figure A.19).

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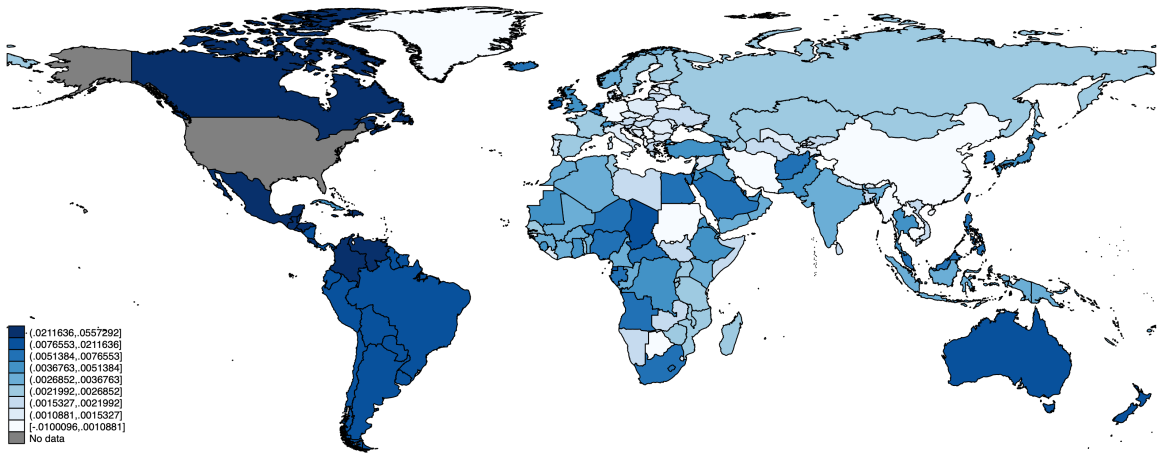
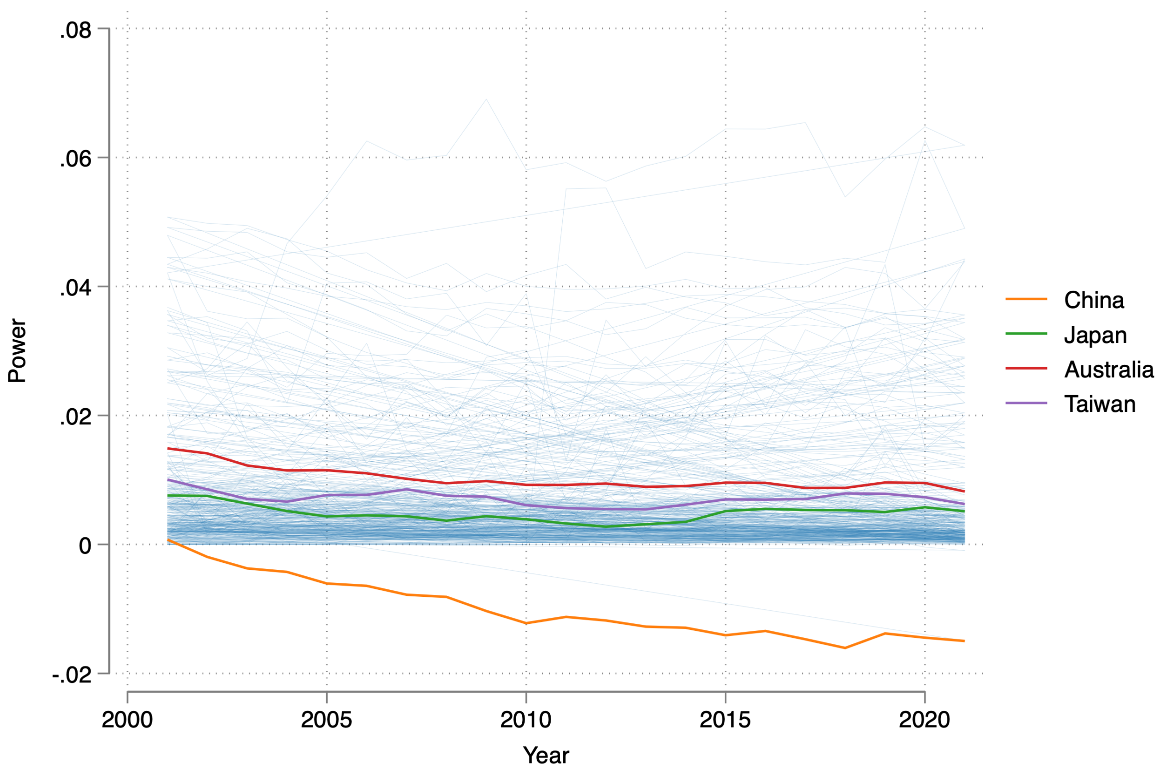
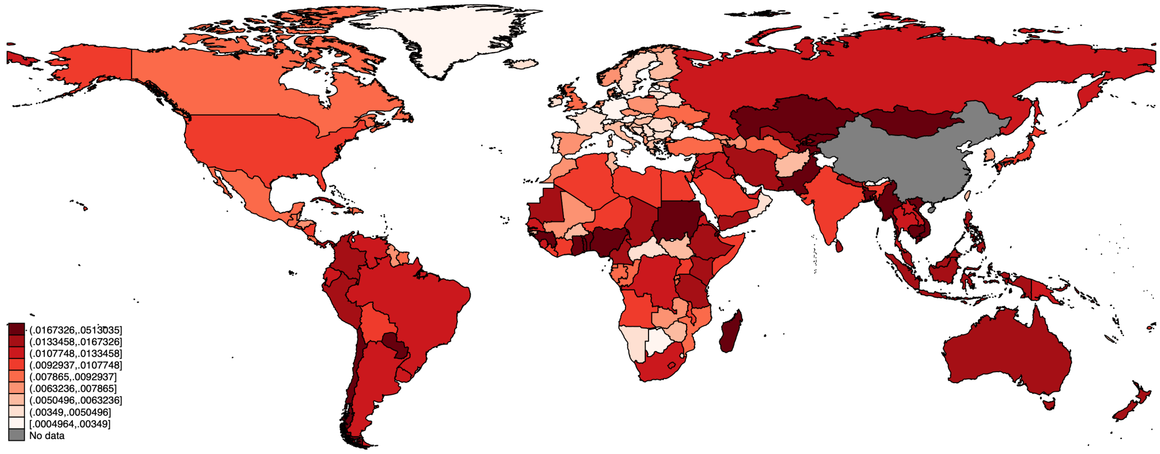
Figures



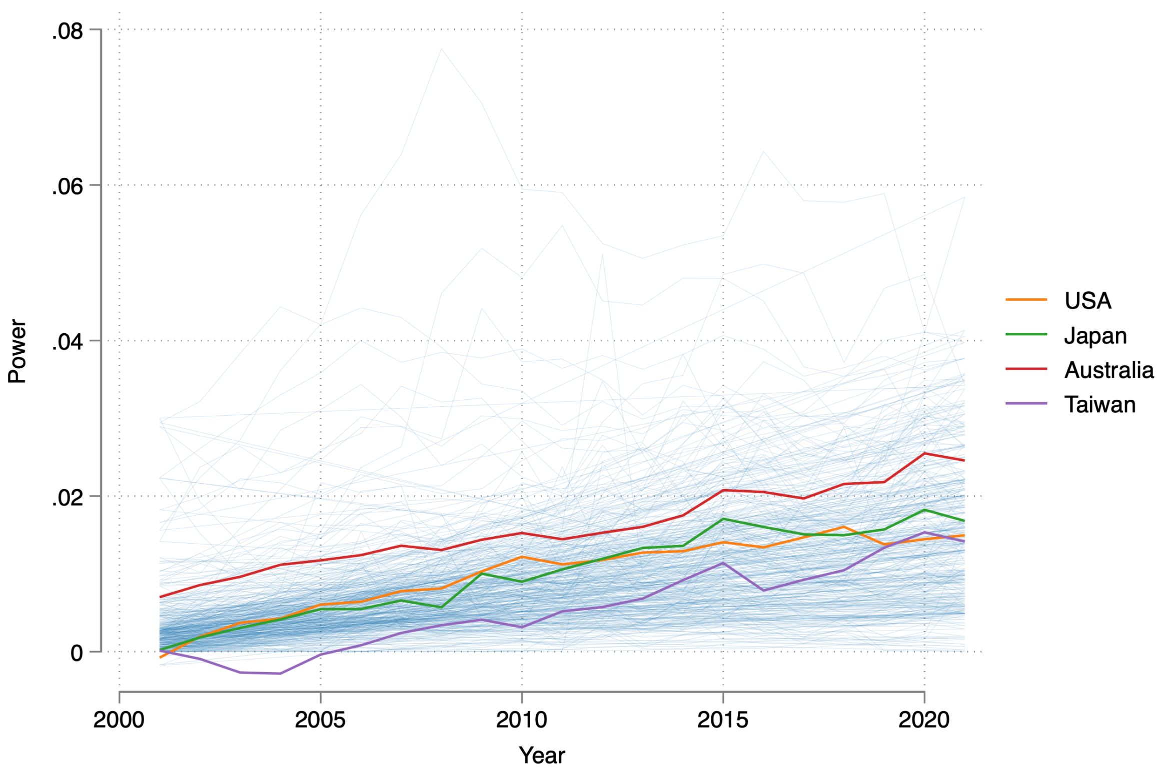
Panel A(a): USA's average power over other countries. For a given pair made up of the USA and another country i, this plot represents the USA's directed average power (in all sectors) over all other countries i in the time period 2001-2021. Directed power ranges from $[-1, 1]$.



Panel A(b): USA's power over other countries over time. For a given country i, this figure plots the directed power (in all sectors) between the USA and country i for each year. Directed power ranges from $[-1, 1]$.



Panel B(a): China's average power over other countries. For a given pair made up of China and another country i, this plot represents China's directed average power (in all sectors) over all other countries i in the time period 2001-2021. Directed power ranges from $[-1, 1]$.



Panel B(b): China's power over other countries over time. For a given country i, this figure plots the directed power (in all sectors) between China and country i for each year. Directed power ranges from $[-1, 1]$.

Figure 1: USA and China's power over time, 2001-2021

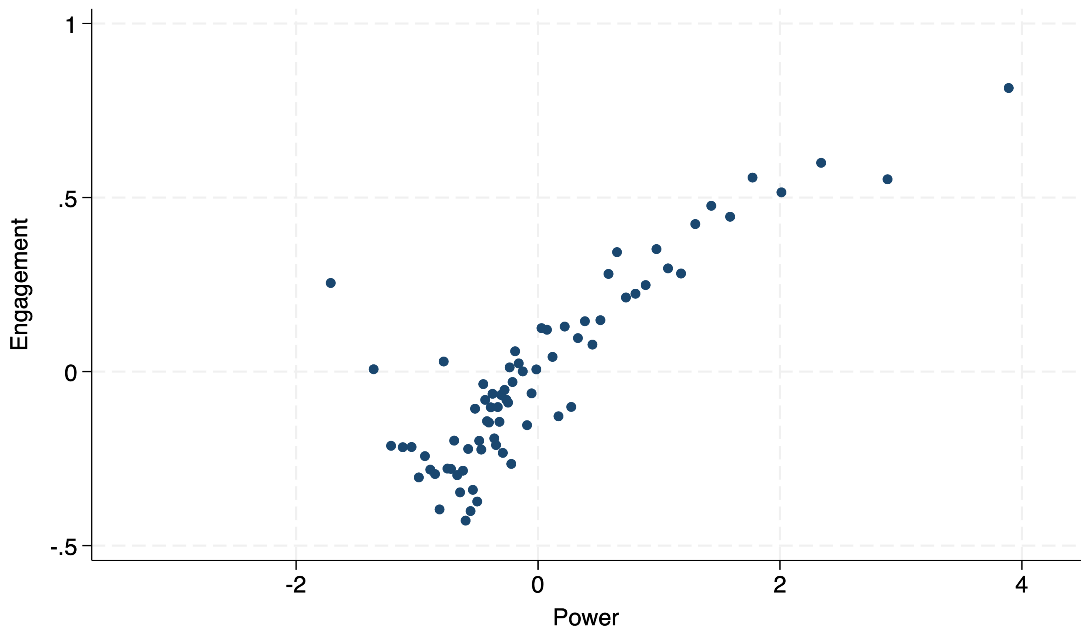
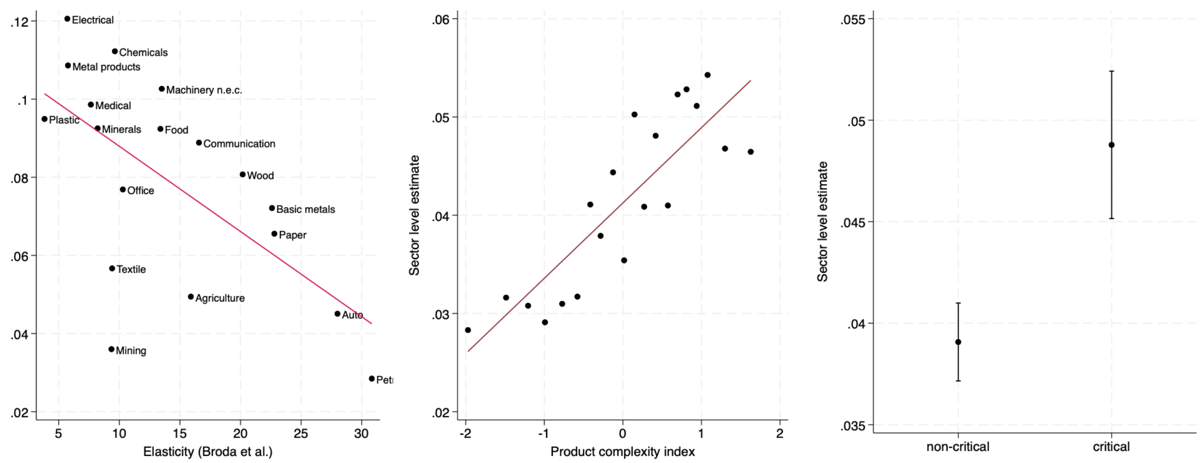


Figure 2: Power and engagement. This figure displays a binned scatterplot of the regression in Table 2; that is, it relates the pairwise z-score of engagement to the pairwise standardization of power (from all sectors), while controlling for GDP difference and total trade, as well as employing pair and year fixed effects. This is created using the stata package 'binsreg'.



Panel A Panel B Panel C

Figure 3: Correlates of sector level estimates. Panel A Shows the relationship between the sector-level coefficient of power and engagement. The product-level elasticity of substitution from Broda and Weinstein (2006) is aggregated into the CP-sector level elasticity of substitution using a global trade volume-weighted average. Panel B Presents a binned scatter plot of the Product Complexity Index (PCI) from Hidalgo and Hausmann (2009) against the sector-level estimates at the HS 4-digit level. Panel C Displays the 95% confidence intervals for sector-level estimates based on whether the product is critical or non-critical. A sector is defined as critical at the HS 4-digit level if any product within the sector is listed as critical by the ITA's draft list of critical supply chains.

Tables

Table 1: International power in trade and international influence in other domains

	Correlation with baseline power			Summary statistics			
	Fixed effects			Overall, directed pairs		Conditional on positive	
	None	Year	Pair & year	Mean	SD	Mean	SD
Panel A: alternative specifications of international power (stemming from trade)							
Baseline power	-	-	-	0	.001	.003	.003
Equally weighted sectors	.978	.978	.924	0	.037	.009	.035
Max sector weighted	.863	.863	.805	0	.001	0	.001
Max sector weighted by trade elasticities	.761	.761	.677	0	.018	.004	.017
HS 2-digit sectors	.983	.983	.925	0	.004	.001	.004
Log trade levels	.204	.204	.117	0	2.232	1.483	1.669
Actually traded sectors	.89	.89	.569	0	.004	.001	.004
Panel B: international influence in other domains							
Difference in total GDP	.453	.453	.273	0	2.06e+12	6.01e+11	1.97e+12
Difference in GDP per capita	.135	.135	-.013	0	27618.79	17849.28	21076.08
Military expenditure	.36	.36	.192	0	76258.19	17625.86	74193.33
Foreign aid dependence	.094	.094	.038	0	48.891	3.152	48.789
Sovereign debt exposure	.335	.335	.193	0	.046	.006	.045
Panel C: power from other domains							
FBIC (political bandwidth)	.29	.292	.02	.079	.05	.079	.05

Note: This table provides summary statistics of alternative specifications of international power stemming from trade and international influence in other domains. The first three columns show the correlation between each specification and the baseline measure of power after controlling for various fixed effects. The correlations are computed using all directed country pairs without transformation, such as standardization and absolute value. The next four columns provide mean and standard deviation of each measure both for all directed pairs and conditional on the subset of directed pairs for which the measure takes a positive value. Panel A shows these summary statistics for the alternative specification of power stemming from trade. Panel B shows the international influences in other domains. For the differences in GDP and GDP per capita, we use GDP statistics provided by World Bank. Military expenditure comes from Stockholm International Peace Research Institute (SIPRI). We use all actual and imputed military spending data from SIPRI and treat missing values as true missing without replacing them with zeros. Foreign aid comes from official development assistance (ODA) provided by OECD and is measured as the difference in aid given or received bilaterally, and missing values are filled with zeros as we expect many countries do not give or take aid outside of existing data. Sovereign debt exposure uses all bilateral debt disbursements from International Debt Statistics (IDS), measured as the difference in bilateral debt. All missing values from the database are filled with zeros. Panel C shows existing measures of international influence. We use the political bandwidth measure from Formal Bilateral Influence Capacity (FBIC). Political bandwidth is measured without regard to direction–there is no difference between political bandwidth from i to n and n to i. As such, the correlation was calculated for the positive value of baseline power.

Table 2: Power and engagement

	Bilateral engagement$_{\{in\},t}$					
	Changes within country pairs			IV: sector-specific trade exposure		
	(1)	(2)	(3)	(4)	(5)	(6)
$Power_{\{in\},t-1}$	0.107***	0.106***	0.236***	0.454***	0.439***	0.697***
	(0.0115)	(0.0115)	(0.0163)	(0.0412)	(0.0412)	(0.0589)
GDP difference$_{\{in\},t-1}$		0.0860***	0.0923***		0.0709***	0.0858***
		(0.0184)	(0.0183)		(0.0191)	(0.0189)
Total trade$_{\{in\},t-1}$			-0.242***			-0.539***
			(0.0167)			(0.0406)
N	517298	517298	517298	486026	486026	486026
Year FE:	Yes	Yes	Yes	Yes	Yes	Yes
Pair FE:	Yes	Yes	Yes	Yes	Yes	Yes

Note: This table shows the results of the regression specified in Equation (12). Bilateral engagement is the z-score of each unit interval of events in the ICEWS dataset within the range $[-7, 8)$, where each unit interval's values are the sum of both directions of country i and n's events with each other. The first three columns represent the OLS specification in Equation (12) and use all directed country pairs. The second three columns represent the IV specification in Equation (15). The IV sample is restricted to country pairs with trade data from 1995 to 1999, as the instrument is constructed from importer sectoral exposure shares during this period. Power, GDP difference, and total bilateral trade are all standardized on the directed pair level. Standard errors are clustered at the undirected pair level. * $p < 0.1$, ** $p < .05$, *** $p < 0.01$.

Table 3: Geopolitical alignment and power build-up

Panel A: first stage

	$\text{Alignment}_{\{AB\},\{t+1,t+2\}}$		
	(1)	(2)	(3)
$\mathbb{1}\{\text{Turnover}\}_{A,t}$	0.144***	0.141***	0.141***
	(0.0244)	(0.0243)	(0.0243)
$\text{Alignment}_{\{AB\},t-1} \times \mathbb{1}\{\text{Turnover}\}_{A,t}$	-0.135***	-0.137***	-0.137***
	(0.0251)	(0.0251)	(0.0251)
$\mathbb{1}\{\text{No turnover}\}_{A,t}$	0.0301*	0.0316*	0.0316*
	(0.0179)	(0.0179)	(0.0179)
$\text{Alignment}_{\{AB\},t-1} \times \mathbb{1}\{\text{No turnover}\}_{\{A\},t}$	0.0221	0.0205	0.0205
	(0.0187)	(0.0186)	(0.0186)
$\text{Alignment}_{\{AB\},t-1}$	0.0732***	0.0729***	0.0729***
	(0.00405)	(0.00405)	(0.00405)
$\text{Power}_{B\to A,t-1}$	-0.0103**	-0.00965**	-0.00965**
	(0.00433)	(0.00433)	(0.00434)
$\text{GDP difference}_{B\to A,t-1}$		-0.0203***	-0.0203***
		(0.00586)	(0.00586)
$\text{Total trade}_{\{AB\},t-1}$			0.0000561
			(0.00448)

Panel B: second stage

	$\text{Power}_{B\to A,\{t+1,t+2\}}$		
	(1)	(2)	(3)
$\widehat{\text{Alignment}}_{\{AB\},\{t+1,t+2\}}$	-0.368**	-0.381***	-0.386***
	(0.145)	(0.147)	(0.147)
N	55819	55819	55819
Year FE:	Y	Y	Y
Pair FE:	Y	Y	Y

Note: Panel A shows the first stage of the IV that relates power and alignment levels as specified in Equation (18); Panel B shows the coefficient on predicted future alignment from the second stage specified in Equation (19). Each column differs only in its inclusion of controls for GDP difference and trade; neither is included in column (1), GDP difference appears in column (2), and both are featured in column (3). The term $\mathbb{1}\{\text{Turnover}\}_{A,t}$ is one if the country A had a close election that resulted in electoral turnover in year t, as defined by Marx, Pons, and Rollet (2024); it is zero otherwise. $\mathbb{1}\{\text{No turnover}\}_{A,t}$ is one if country A had a close election in year t that did not result in turnover (with the aforementioned definition); it is zero otherwise. $\widehat{\text{Alignment}}_{\{AB\},\{t+1,t+2\}}$ is the predicted value of the average (over the two next periods) alignment from the first stage. Power, GDP difference, and total trade are all lagged and standardized on the pair level; power and GDP difference are directed, total bilateral trade is undirected. Standard errors are clustered at the pair level. * $p < 0.1$, ** $p < .05$, *** $p < 0.01$.

Table 4: Geopolitical alignment, trade shares and trade policies

Panel A: second stage

	Trade shares		Trade policies		
	B's import share from A	B's export share to A	Power-promoting policy$_{B\to A}$	Net liberal import policy$_{B\to A}$	Net liberal export policy$_{B\to A}$
	(1)	(2)	(3)	(4)	(5)
$\widehat{\text{Alignment}}_{\{AB\},\{t+1,t+2\}}$	0.344**	0.240	-0.380**	0.356***	-0.0104
	(0.162)	(0.286)	(0.156)	(0.116)	(0.0900)

Panel B: first stage

	Alignment$_{\{AB\},\{t+1,t+2\}}$				
	(1)	(2)	(3)	(4)	(5)
$\mathbb{1}\{\text{Turnover}\}_{A,t}$	0.141***	0.141***	0.227***	0.228***	0.227***
	(0.0244)	(0.0243)	(0.0600)	(0.0601)	(0.0600)
Alignment$_{\{AB\},t-1}$ × $\mathbb{1}\{\text{Turnover}\}_{A,t}$	-0.137***	-0.137***	-0.192***	-0.193***	-0.189***
	(0.0251)	(0.0251)	(0.0630)	(0.0633)	(0.0633)
$\mathbb{1}\{\text{No turnover}\}_{A,t}$	0.0317*	0.0316*	0.0196	0.0195	0.0203
	(0.0179)	(0.0179)	(0.0522)	(0.0523)	(0.0521)
Alignment$_{\{AB\},t-1}$ × $\mathbb{1}\{\text{No turnover}\}_{\{A\},t}$	0.0204	0.0204	-0.0290	-0.0296	-0.0279
	(0.0187)	(0.0187)	(0.0577)	(0.0578)	(0.0574)
Outcome$_{B\to A,t-1}$	-0.00201	0.00181	-0.0936***	0.124***	-0.0167
	(0.00502)	(0.00337)	(0.0337)	(0.0437)	(0.0468)
Alignment$_{\{AB\},t-1}$	0.0728***	0.0728***	0.0566***	0.0571***	0.0587***
	(0.00405)	(0.00405)	(0.0170)	(0.0170)	(0.0171)
GDP difference$_{B\to A,t-1}$	-0.0207***	-0.0206***	0.0112	0.00944	0.00837
	(0.00586)	(0.00586)	(0.0193)	(0.0192)	(0.0195)
Total trade$_{\{AB\},t-1}$	0.000913	-0.000133	-0.0518***	-0.0516***	-0.0527***
	(0.00456)	(0.00459)	(0.0192)	(0.0192)	(0.0192)
N	55819	55819	4861	4861	4861
Year FE:	Y	Y	Y	Y	Y
Pair FE:	Y	Y	Y	Y	Y

Note: Panel A shows the coefficient on predicted future alignment from the second stage specified in Equation (20) in Columns (1) and (2), and of Equation (21) in Columns (3)-(5). Panel B shows the first stage of the IV that relates each outcome (trade shares and trade policies) to alignment levels; this is a modification of the first stage specified in Equation (18), as we replace power with the relevant outcome as indicated by each column. The terms $\mathbb{1}\{\text{Turnover}\}_{A,t}$, $\mathbb{1}\{\text{No turnover}\}_{A,t}$, $\widehat{\text{Alignment}}_{\{AB\},\{t+1,t+2\}}$, GDP difference, and total trade are identically defined as explained in the notes of Table 3. Each column includes a control for the lagged value of the variable specified at the top of the table. All outcomes are the two-period average of the relevant variable after the year t, e.g. Column (1) is the average of B's import share from A in years $t+1$ and $t+2$. The outcome variable in Column (1) is the share of country B's total imports that come from country A; Column (2) is the share of B's total exports that go to country A. The outcome in Column (3) is the difference of the outcome in Column (5) and Column (4), i.e. the sum of liberal export policies and restrictive import policies minus the sum of restrictive export policies and liberal import policies. The outcome in Column (4) is the count of liberal import trade policies from country B targeted at country A minus the restrictive import policies from B to A in the relevant years. Column (5) is a similar quantity, but is defined for export policies rather than import policies. Standard errors are clustered at the pair level. * $p < 0.1$, ** $p < .05$, *** $p < 0.01$.

Appendix

Appendix A Model appendix

Appendix A.1 Producer losses are second-order even with irreversible ex-ante investments

In the baseline model, production labor is allocated ex-post. Therefore, sanctions that halt trade flows do not cause economic damages to the exporter (producer).

In this appendix, we extend the baseline model by introducing ex-ante, irreversible investments on the production side. Under these conditions, sanctions implemented ex-post that disrupt trade flows can impose economic losses on the exporter. However, we show that the loss incurred by the producer is only second-order relative to the share of its output planned to be sold to the importer (consumer). Specifically, sanctions result in economic damages to the importer that are first-order in terms of the importer's expenditure share on the exporter and damages to the exporter that are second-order in terms of the exporter's share of output sold to the importer. Hence, the core insights from our baseline analysis continue to hold even in this enriched setting.

As in the baseline model, we consider N economies and K sectors, with an identical set of actors. Consumers place import orders at the ex-ante stage, and economies can threaten to comprehensively disrupt bilateral trade ex-post. The crucial difference is that producers must now undertake irreversible investments using labor at the ex-ante stage. Specifically, each country i has a representative firm producing its variety of intermediate good k, with production function

$$q_i^k = a_i^k \left(\frac{\iota_i^k}{1-\alpha} \right)^{1-\alpha} \left(\frac{x_i^k}{\alpha} \right)^{\alpha}, \tag{22}$$

where a_i^k is the productivity, ι_i^k is the investment to commit ex-ante, and x_i^k is the flexible input chosen ex-post. For simplicity, both inputs ι_i^k and x_i^k are made one-for-one from labor.

Given the production function (22), firms invest

$$\iota_i^k = (1-\alpha)\, p_i^k q_i^k, \tag{23}$$

where $q_i^k = \sum_n \tau_{ni}^k c_{ni}^k$ and $p_i^k = 1/a_i^k$.

In the absence of economic sanctions, production inputs x_i^k are hired ex-post to fulfill the production orders:

$$x_i^k = \alpha \left(\frac{q_i^k}{a_i^k} \right)^{1/\alpha} \left(\frac{\iota_i^k}{1-\alpha} \right)^{\frac{\alpha-1}{\alpha}}.$$

As in our baseline model, a comprehensive export stop from i to n disrupts trade across all sectors: the importer n loses access to all varieties supplied by i, but the trade orders for goods unaffected by sanctions must be fulfilled as they were ex-ante planned.

Let variables with tilde denote the prices and quantities after sanctions are imposed. The consumption under sanctions is

$$\widetilde{c}_{nj}^{k} = \begin{cases} 0 & j = i, \\ c_{nj}^{k} & \text{otherwise.} \end{cases}$$

The producer of good k in country i hires inputs according to

$$\widetilde{x}_i^k = \alpha \left(\frac{\widetilde{q}_i^k}{a_i^k} \right)^{1/\alpha} \left(\frac{\iota_i^k}{1-\alpha} \right)^{\frac{\alpha-1}{\alpha}}, \qquad \widetilde{q}_i^k = \sum_m \widetilde{q}_{mi}^k. \tag{24}$$

There are now two potential sources of welfare loss: changes in the importer's consumer surplus and changes in the exporter's producer profits. The change in country n's consumer surplus is the same as the derivation in our main text. The loss of quasi-rents for country i's producer of good k is:

$$\left(p_i^k \widetilde{q}_i^k - \widetilde{x}_i^k \right) - \left(p_i^k q_i^k - x_i^k \right). \tag{25}$$

Let $\gamma_{ni}^k \equiv q_{ni}^k / q_i^k$ denote the fraction of country i's output in good k that is sold to country n; we have that $\widetilde{q}_i^k = \left(1 - \gamma_{ni}^k\right) q_i^k$. Equation (23) can be re-arranged to express the ex-ante investment ι_i^k as a function of the ex-ante expected output q_i^k; we can then use (24) to write $\widetilde{x}_i^k$ and x_i^k as functions of output $\widetilde{q}_i^k$ and q_i^k, respectively. The loss of producer quasi-rent is thus

$$\begin{aligned} & p_i^k \left[\left(\widetilde{q}_i^k - \alpha \left(\widetilde{q}_i^k \right)^{1/\alpha} \left(q_i^k \right)^{\frac{\alpha-1}{\alpha}} \right) - (1-\alpha) q_i^k \right] \\ = \; & p_i^k q_i^k \left[\left(1 - \gamma_{ni}^k \right) - \alpha \left(1 - \gamma_{ni}^k \right)^{1/\alpha} - (1-\alpha) \right] \approx 0, \end{aligned}$$

where the approximation follows from $\left(1 - \gamma_{ni}^k\right)^{1/\alpha} \approx 1 - \gamma_{ni}^k / \alpha$, with the approximation error being second-order in γ_{ni}^k, the fraction of country i's output in good k that is sold to country n.

The intuition behind the second-order producer loss is that competitive producers earn no pure rents, and the envelope theorem ensures that the ex-ante over-investment — relative to the ex-post reduction in market size — causes only second-order economic losses.

This asymmetric impact — first-order importer losses versus second-order exporter losses — depends crucially on the assumption of competitive markets. With market power, losing access to a foreign market may yield first-order producer losses. Moreover, quasi-linear utility ensures factor prices remain fixed despite sanctions. If factor prices were endogenous, sanctions could have first-order effects through changes in relative factor prices and terms of trade. Nonetheless, this analysis illustrates that, under competitive conditions, producer surplus losses from market access disruptions are second-order, whereas consumer welfare losses remain first-order.

Appendix A.2 General-equilibrium welfare losses from a bilateral trade cutoff in a multi-sector CDK model

This appendix describes how we compute the general-equilibrium welfare impact of a counterfactual in which two countries stop trading completely in the multi-sector model of Costinot, Donaldson, and Komunjer (2011). We adopt hat algebra (changes relative to an observed baseline) and restrict attention to shocks to bilateral trade costs, holding productivities fixed.

Environment. There are N countries indexed by $n, i \in \{1, \ldots, N\}$ and K sectors indexed by $k \in \{1, \ldots, K\}$. In each country i, labor endowment is ℓ_i and the nominal wage is w_i. Sector k features Fréchet technology with trade elasticity $\theta^k > 0$ and baseline technology parameter z_i^k. Shipping one unit of a sector-k good from exporter i to importer n requires iceberg trade cost $\tau_{ni}^k \geq 1$. Final demand in importer n is Cobb–Douglas across sectors with expenditure shares $\{\beta_n^k\}_{k=1}^K$, where $\beta_n^k \geq 0$ and $\sum_k \beta_n^k = 1$.

Equilibrium. Given wages $\{w_i\}$ and trade costs $\{\tau_{ni}^k\}$, the *equilibrium* expenditure share of importer n on exporter i in sector k is

$$S_{ni}^k = \frac{\left(w_i \tau_{ni}^k / z_i^k\right)^{-\theta^k}}{\sum_{j=1}^N \left(w_j \tau_{nj}^k / z_j^k\right)^{-\theta^k}}, \qquad \sum_{i=1}^N S_{ni}^k = 1 \ \ \forall (n, k). \tag{26}$$

Wages are pinned down by trade balance: for each exporter i, total sales across destinations and sectors equal its nominal income $w_i \ell_i$,

$$w_i \ell_i = \sum_{n=1}^N \sum_{k=1}^K \beta_n^k \, w_n \ell_n \, S_{ni}^k, \tag{27}$$

together with a normalization (numeraire) for wages.

The final consumption price index in country n is Cobb–Douglas across sectors. Let P_n^k denote the sector-k price index and P_n the final price index:

$$P_n^k = \left[\sum_{i=1}^N \left(w_i \tau_{ni}^k / z_i^k\right)^{-\theta^k}\right]^{-1/\theta^k}, \qquad P_n = \prod_{k=1}^K \left(P_n^k\right)^{\beta_n^k}. \tag{28}$$

The real income in country n is: $W_n \equiv (w_n \ell_n) / P_n$.

Hat algebra. For any variable x, let $\widehat{x} \equiv x'/x$ denote the proportional change from the baseline to the counterfactual. We study counterfactual trade-cost shocks $\{\widehat{\tau}_{ni}^k\}$ while holding productivities fixed:

$$\widehat{z}_i^k = 1 \qquad \forall i, k. \tag{29}$$

Let S^k_{ni} denote the equilibrium expenditure shares in the baseline economy. Given wage changes $\widehat{w}_i$ and trade-cost shocks $\widehat{\tau}^k_{ni}$, counterfactual shares satisfy

$$\widehat{S}^k_{ni} \equiv \frac{S^{k\prime}_{ni}}{S^k_{ni}} = \frac{\left(\widehat{w}_i\,\widehat{\tau}^k_{ni}\right)^{-\theta^k}}{\sum_{j=1}^N S^k_{nj}\left(\widehat{w}_j\,\widehat{\tau}^k_{nj}\right)^{-\theta^k}}. \tag{30}$$

Under balanced trade, nominal expenditures scale with nominal income, so the wage hats solve

$$\widehat{w}_i\,w_i\ell_i = \sum_{n=1}^N \sum_{k=1}^K \beta^k_n\,\widehat{w}_n\,w_n\ell_n\;S^k_{ni}\,\widehat{S}^k_{ni}, \tag{31}$$

together with a wage normalization (e.g., $\widehat{w}_{i_0} = 1$).

The sectoral and final price index hats are

$$\widehat{P}_n = \prod_{k=1}^K \left(\widehat{P}^k_n\right)^{\beta^k_n}, \qquad \widehat{P}^k_n = \left[\sum_{i=1}^N S^k_{ni}\left(\widehat{w}_i\,\widehat{\tau}^k_{ni}\right)^{-\theta^k}\right]^{-1/\theta^k}, \tag{32}$$

where (29) has been used. The changes in real income are then

$$\widehat{W}_n \equiv \frac{W'_n}{W_n} = \frac{(w'_n\ell_n)/P'_n}{(w_n\ell_n)/P_n} = \frac{\widehat{w}_n}{\widehat{P}_n}. \tag{33}$$

Bilateral trade cutoff and differential losses. Consider a counterfactual in which two countries a and b stop trading completely in all sectors. In (30)–(32), we implement this by eliminating the corresponding bilateral terms:

$$\left(\widehat{\tau}^k_{ab}\right)^{-\theta^k} = 0, \qquad \left(\widehat{\tau}^k_{ba}\right)^{-\theta^k} = 0, \qquad \forall k \in \{1,\ldots,K\}, \tag{34}$$

while $\widehat{\tau}^k_{ni} = 1$ for all other pairs $(n,i) \notin \{(a,b),(b,a)\}$. Equivalently, one may set $\widehat{\tau}^k_{ab} = \widehat{\tau}^k_{ba} = +\infty$, which yields (34) in the limit.

Given (34), we solve (30)–(31) for $\{\widehat{w}_i\}$, compute $\{\widehat{P}_n\}$ from (32), and obtain changes in real income from (33). The loss of real income in country a is

$$\Delta_a \equiv 1 - \widehat{W}_a, \tag{35}$$

and the loss of real income in country b is

$$\Delta_b \equiv 1 - \widehat{W}_b. \tag{36}$$

The differential loss (asymmetry) is

$$\Delta_a - \Delta_b = \left(1 - \widehat{W}_a\right) - \left(1 - \widehat{W}_b\right) = \widehat{W}_b - \widehat{W}_a. \tag{37}$$

Note that (37) is the general-equilibrium counterpart to the power measure in our baseline model — the differential welfare loss when two countries stop trading with each other.

We compute (37) across all country-pairs. We find that in our sample period, (37) and our baseline power measure have a correlation of 0.96, suggesting that general-equilibrium terms-of-trade effects are small relative to the first-order, partial equilibrium impact captured in our baseline model.

Appendix B Factors contributing to China's rising power

In Appendix B.1, we explore the plausible connection between China's rising power and its trade expansion; in Appendix B.2, we investigate whether China's industrial policies, in particular, the Five Year Plans, may play a role in fostering its power rise.

Appendix B.1 China's trade expansion and its rising power

A plausible reason for China's rising power toward other countries since 2000 is its rapid rise as a global export hub after China's accession to the WTO in 2001.

To examine this possibility, we measure importing countries' exposure to China's export as the weighted sum of China's global market share for each sector. Specifically, we define $ChinaExposure_{\{CHN\to n\},t} = \sum_{k\in K} CGMS_{k,t} \times w_{nk\tau}$, where $CGMS_{kt}$ = China's global market share of k (HS-section) in t, and $w_{nk\tau}$ = the share of k in n's aggregate import in pre-period τ (1995-1999). In other words, $ChinaExposure_{\{CHN\to n\},t}$ captures the combination of China's overall export growth and importing countries' differential exposure to such growth as a result of pre-existing differences in their sectoral composition of imports.

We then examine whether China's power towards other countries is associated with their exposure to China's trade expansion. In particular, we estimate the following regression specification:

$$\text{Power}_{\text{CHN}\to n,t} = \beta_1 \text{China Exposure}_{\text{CHN}\to n,t} + X'\gamma + \epsilon_{\text{CHN}\to n,t}. \tag{38}$$

Appendix Table A.21 presents the results. One indeed observes that China's rising power over other countries can be explained (at least in part) by its trade expansion and importing countries' differential exposure to such expansion. A one standard deviation increase in sector-specific trade exposure to China's trade expansion is associated with a 21.9% increase (when evaluated at the median) in China's power over that country. In Section 4, we extend this exercise to the entire world and demonstrate that differential exposure to specific countries' trade expansion and contraction strongly predicts international power.

Appendix B.2 China's industrial policy and its rising power

An important component of the model is the role of industrial policies (broadly defined) that may shape countries' international power. We demonstrate such a role of industrial policies focusing on China's 10th Five Year Plan as a case study.

The Five-Year Plans (FYP) are a series of social and economic development initiatives issued by Chinese Communist Party. The 10th FYP spanned the period 2001-2005.[1] Notable sectors explicitly stimulated by the 10th FYP include industrial machinery such as nuclear reactors, furnaces and boilers; less advanced manufacturing sectors such as apparels also continued to be targeted.

1. The 10th FYP contained fewer specific quantitative growth targets and more tentative structural reform goals than previous iterations. Focuses included growing the secondary and tertiary sectors as well as spurring R&D.

We examine whether exposure to the 10th FYP is associated with increases China's power in corresponding sectors. We estimate the following regression specification:

$$Y_{nk} = \beta_0 + \beta_1 \sum_{k \in \mathcal{K}} \mathbb{1}[k \in FYP] \times w_{nk}^{\mathcal{K}} + \alpha_n + \epsilon_{nk}, \tag{39}$$

where Y_{nk} is either China's export volume or power associated with sector k, and $w_{nk}^{\mathcal{K}} = \frac{V_{nk}}{V_{n\mathcal{K}}}$, namely, import in an HS-4 sector k out of its aggregate import of sector $\mathcal{K}$ at the HS-section level.[2] The treated sectors $\mathbb{1}[k \in FYP]$ are those that were explicitly included in the 10th FYP.[3]

Appendix Table A.22 reports the estimates, where columns 1-2 focus on export volumes as outcomes of interest, and columns 3-4 focus on sector-specific power that China possesses. At the average rate of HS-section exposure, one observes that the sectors targeted by the 10th FYP experienced a substantial increase in export, by 25.7% relative to pre-FYP level. Accordingly, the power that China exhibits in these FYP-targeted sectors sharply rose during this period as well: on average, China's power rose by 32.1% among sectors targeted by the FYP.

These results by no means indicate that the FYP and its potential impact on China's power over others are geopolitically strategic; we examine the strategic causes of international power in Section 5.

2. We construct weights of each HS-4 on the sector-level measure constructed from an earlier period (1995 to 2000).

3. For the purposes of our analysis, we define the pre-period as the first two years of the 10th FYP (2001-2002) and the post-period as the last year of the FYP and the subsequent year (2005-2006). The changes are defined as the change in the mean values from the pre-period to the post-period.

Appendix C International power measure: alternative specifications

In Appendix C.1, we describe the process of constructing an alternative power measure that considers domestic expenditure share. In Appendix C.2, we describe the process of constructing an alternative power measure that takes into account trade in services.

Appendix C.1 Considering domestic expenditure share

The baseline measurement of power, using BACI trade data, does not allow us to consider domestic expenditure in the corresponding sector in order to measure expenditure share instead of import share when calculating the dependence share. This baseline measure of international power is easy to replicate because it can be determined solely from trade statistics. However, a country may source goods not from other countries, but domestically. As such, we provide an alternative measure of international power that accounts for a country's expenditure on domestically produced goods in addition to imports.

We use the Eora Global Supply Chain Database (specifically, Eora 26) which consists of a multi-region and multi-sector input-output table that features 184 countries and 26 sectors based on data collected from 1995 to 2017.[4]

Eora 26 includes intranational transactions, enabling us to observe each country's expenditure on domestically produced goods. We use this feature to supplement the BACI international trade database by including domestic expenditure. We use Eora to infer how large domestic expenditure is relative to imports at the sector level, and then distribute this domestic expenditure across HS 6-digit products in proportion to observed imports, rescaling so that national totals match Eora.

Specifically, for each importer n, exporter i and HS 6-digit product g, let $k = k(g)$ denote the Eora sector that contains product g.[5] We define the imputed intranational (domestic) trade flow V_{nng} as:

$$V_{nng} = \left(\sum_{i \in \text{Foreign}} V_{nig}^{BACI} \right) \times \left(\frac{V_{nnk}^{Eora}}{\sum_{i \in \text{Foreign}} V_{nik}^{Eora}} \right), \tag{40}$$

where the first factor is the observed foreign imports at the product level (BACI) and the second factor is the domestic-to-foreign sourcing ratio at the sector level (Eora).[6]

Two challenges arise from imputing trade statistics from two different sources.

First, measurement mismatch. The accuracy and internal consistency of Eora relative to BACI play a critical role in this construction. If Eora systematically mismeasures in-

4. Eora is publicly available for free up to the 2017 data. Hence, we use the 2015, 2016, and 2017 average to compute the domestic-to-foreign sourcing ratio in Equation 40 and non-goods to goods ratio in Equation 43.

5. Eora 26 makes a distinction between exporting sector and importing sector. We operationalize our sector classification using the exporting sector. Sectors under Eora's scheme can be traced back to an arbitrary grouping of ISIC 2-digit sectors, which can then be matched to HS 6-digit products using the official UN Statistics correspondence table.

6. Imports can either go to another sector or final demand. Among final demands, we dropped two items "Changes in inventories P.52" and "Acquisitions less disposals of valuables P.53".

ternationally traded volumes, the resulting imputation of domestic trade flows can be severely distorted. To assess this concern, we first examine whether the volume of international trade reported in Eora aligns with that reported in BACI.

We identify countries whose Eora-to-BACI international trade ratio falls in either the top or bottom 5 percent in at least 20 out of the 21 years from 2001 to 2021. Using this criterion, we find that Liberia, Madagascar, Myanmar, and Somalia exhibit disproportionately low international trade volumes in Eora relative to BACI. For these countries, we correct Eora international trade volumes by scaling BACI trade volumes using the yearly median Eora/BACI ratio.

Second, coarse-to-fine mapping and re-aggregation error. Note that since the Eora's domestic to foreign trade ratio on the right-hand side is computed at the Eora's sector level, which is much more aggregated than the HS 6-digit level, the difference in level of aggregation leads to large error when translated to country's national total expenditure on domestically procured goods. Accordingly, we rescale domestic trade at the product level.

To find an adequate rescaling factor at the country level, we first compute the Eora-implied domestic expenditure as a share of imports. Specifically, we define:

$$V_{nn} = \left(\sum_{i \in \text{Foreign}} V_{ni}^{BACI} \right) \times \left(\frac{V_{nn}^{Eora}}{\sum_{i \in \text{Foreign}} V_{ni}^{Eora}} \right). \tag{41}$$

Then, the normalized domestic volume is

$$V_{nng}^{normalized} = V_{nng} \times \frac{V_{nn}}{\sum_g V_{nng}} / \tag{42}$$

This gets appended in the BACI trade dataset as a country's expenditure on domestically produced goods. The power measure that accounts for domestic expenditure is then computed using this appended dataset.

Appendix C.2 Considering trade in service (non-goods) sectors

Another concern with using the official trade statistics derived from customs-based BACI (as it is derived from COMTRADE) is that it only accounts for goods, leaving out non-goods such as services. However, trade in non-goods is a significant portion of international trade, and countries may be able to wield power through transactions in these non-goods sectors. We again take advantage of the Eora 26 dataset, which includes input–output matrices in both goods and non-goods sectors. We proceed by multiplying a ratio of non-goods to goods trade within each country pair found in Eora by the goods trade data we have available in BACI.

To implement this distinction, we classify each of the 26 sectors in Eora 26 as a goods sector or a non-goods sector. We map HS 6-digit goods to Eora sectors using the HS–ISIC concordance. We then compare the international trade volume in Eora's statistics with the corresponding trade volume constructed from BACI by aggregating mapped HS goods. If the BACI trade volume accounts for less than 10 percent of the international trade volume reported in Eora, we classify the sector as a non-goods sector.

The sectors that we define as non-goods are Construction; Education, Health and Other Services; Financial Intermediation and Business Activities; Hotels and Restaurants; Maintenance and Repair; Post and Telecommunications; Private Households; Public Administration; Recycling; Retail Trade; Transport; and Wholesale Trade.

To impute trade in non-goods, we take the ratio of non-goods to goods in the Eora data within each country pair and multiply this by tradable volumes in the BACI dataset. Specifically, we define the non-goods-to-goods ratio γ_{ni} as

$$\gamma_{ni} = \frac{\sum_{k \in non-goods} V_{nik}^{Eora}}{\sum_{k \in goods} V_{nik}^{Eora}}, \tag{43}$$

which represents the ratio of non-goods trade to goods trade within a country pair.

We then define bilateral flow in non-goods as follows:

$$V_{ni,k=non-goods} = \sum_{k \in allBACIgoods} V_{nik} \times \gamma_{ni}, \tag{44}$$

essentially treating non-goods as one separate sector.

We then apply the same calculation to obtain the power measure that accounts for non-goods, using the same procedure and assigning the average elasticity from all other sectors as the non-goods sector trade elasticity.

Appendix D Distinguishing critical and non-critical goods

This section describes the procedure to distinguish between critical and non-critical goods.

Appendix D.1 Data source

We use the Draft List of Critical Supply Chains published by the U.S. Department of Commerce, International Trade Administration (ITA). The list was compiled following the Executive Order 14017 of February 24, 2021, "Executive Order on America's Supply Chains" by taking public submissions as input. It comprehensively catalogs goods and materials that are deemed critical in strengthening supply chain resistance. The list contains 2409 products, categorized in 4 broad sectors–public health and biological preparedness, information and communications technology (ICT), energy, and critical minerals– and further divided into 22 subsectors, detailed in Appendix Table A.23.

Appendix D.2 Matching with HS categorization

Products in the critical supply chain list are classified at 8- and 10-digit tariff lines of the Harmonized Tariff Schedule of the United States (HTSUS). The HTSUS code is an extension of the Harmonized Systems (HS) and preserves the HS 6-digit code in the beginning 6 digits. Since the 6 digit code is the most detailed classification of product in the BACI international trade data, we define a 6 digit product as critical if there is any product within the 6 digit product that is coded as critical by the critical supply chains list.

For example, HTSUS product 85419000 is *parts of diodes, transistors and similar semiconductor devices*. The corresponding 6 digit product 854190, taking the beginning six digits of the HTSUS code, is defined by HS as *parts of semiconductor devices*.

This paper uses HS-sections as the primary definition of economic sectors. HS-section is simply a broader categorization of goods in the Harmonized System. We can map 6-digit products that are critical to HS-sections. In Appendix Figure A.13, we show each sector's global aggregate trade volume and the contribution of critical and non-critical goods for each sector. We see that *machinery, electrical equipment (15)*, *minerals (5)*, and *chemical products (6)* have the biggest critical trade volume.

Appendix E Statistical model of geopolitical alignment

In this section, we describe the procedure used to build the statistical model that results in the measurement of political alignment between countries. We build on a simple, traditional technique from the position location literature, which usually deals with how to properly estimate the location of an object whose location is imperfectly measured; our main reference is Chapter 3 of Rodríguez et al. (2009). We improve the accuracy of the measures of distance by executing a probabilistic version of the aforementioned procedure, as will be detailed later.

Appendix E.1 Overview

Specifically, for each country i, we observe two types of annual empirical geopolitical distance: *(i)* differences in Polity scores with other countries — such distance exists between country i and nearly every other country in the world. However, there exists relatively little time-series variation in such distance: Polity score captures political institutions and the distance measures broad alignment based on institutional similarity (e.g., democracy-to-democracy and autocracy-to-autocracy), but as institutions do not change frequently, such distance remain relatively stable over time. And *(ii)* approval ratings toward the US, Russia, and China, based on annual Gallup World Poll since 2011.[7] Such rating is high-frequency by design, but it is only available between i and three other countries. We thus combine these two measures: we use the Polity score distance to anchor cross-sectional distance in alignment, and we use the Gallup ratings to capture annual fluctuations in alignment.[8]

The goal is to infer countries' distances in a 2D space of political similarity using Gallup disapproval data about the leadership of Russia, China, and the United States from 2006-2024. However, there is a) error in measurement so exact triangulation is not feasible and b) we do not have data from the Chinese population, i.e. we do not have its disapproval of Russia or USA. To account for measurement error and also recover China's distance from other countries, we take the approach behind GPS location detection called 'statistical multilateration', where we treat the Gallup disapproval rates as reports of 'distance' from each of the three relevant anchor countries. We then use those distances to triangulate the country's location in this space. This is complicated by the fact that there is statistical error, and so we adopt probablistic approaches to this problem detailed later. And finally, we define bilateral alignment between countries i and j during year t as:

$$\text{Alignment}_{ijt} = 1 - \left[\alpha d_{ijt}^{\text{Gallup}} + (1-\alpha) d_{ijt}^{\text{Polity}}\right], \tag{45}$$

7. Gallup World Poll covers roughly 1,000 representative respondents from each country-year, totaling 164 countries over the entire panel; see https://news.gallup.com/poll/105226/world-poll-methodology.aspx for details for the Gallup Poll questions and its sampling. We note that some Gallup data from the US respondents is missing in 2008 and 2012, and so we perform imputation using predictions that rely on a similar survey from the Pew Global Attitudes Database. We do so using Lasso. Finally, we note that Gallup data indeed is recorded starting in 2006, but many countries' data is missing until 2011, when the data is more consistent.

8. We equally weigh these two measures in the baseline specification, but the results are robust to alternative weighting schemes, as shown in Table A.20.

where $\alpha = 0.5$ and the distances d_{ijt}^{Gallup} and d_{ijt}^{Polity} are the distances between countries i and j that result from their respective optimal coordinates in year t. Appendix Figure **??** illustrates the estimation procedure visually.

This measure of $Alignment_{ijt}$ yields rich and intuitive cross-sectional and over-time variation. For example, Appendix Figure A.15 plots the geopolitical alignment with Ukraine between 2006 and 2022 among several countries that belonged to the former Soviet Union (e.g., Armenia, Azerbaijan, Belarus, etc.). One observes a sharp drop in alignment with Ukraine following the 2014 Russian Annexation of the Crimea, and again in 2022 following its invasion of Ukraine more broadly. Note that Ukraine's alignment with these countries are *not* directly observed, but rather inferred through the proximity model. Despite this, the bilateral alignment appears to reflect expected changes in geopolitical alignment.

Appendix E.2 Data

The statistical model is created using two datasets: 1. Polity scores and 2. Gallup Global Leadership Approval data (from the Gallup World Poll).

Polity scores come from the Polity Project, which quantifies the institutional characteristics of all countries and places them on a scale from $[-10, 10]$, where lower scores indicate more authoritarian regimes, and higher scores indicate more democratic regimes. We make use of the polity scores from 2006-2021, and each of these scores is a coordinate on a one-dimensional interval; for example, in 2018, the USA is listed as 8 and China as -7.

The Gallup Global Leadership Approval data features averages of national sentiment about leadership from the USA, Russia, and China. Each country's values are derived from a nationally representative sample of roughly 1000 individuals, and each year features national averages of approval, disapproval, or uncertainty of the leadership of the USA, Russia, and China. We make use of disapproval ratings, as higher disapproval is sensibly linked to higher political distance; results look similar if we use the inverse of approval.

Whereas the polity scores place all countries on a single scale, Gallup disapproval rates feature data from all countries about only three other countries – USA, Russia, and China – meaning that, for example, the Gallup polls do not provide information about Thailand's approval of Malaysia. They only provide information about Thailand and Malaysia's approval of USA, Russia, and China. To make the data structures of the polity scores and the Gallup disapproval rates cohere, we transform the polity scores from a country's coordinate in a given year to a country's distance from the USA, Russia, and China's coordinates. Thus, in the same way that disapproval rates from Gallup give 'distance' from China, Russia, and China, we use the polity scores to calculate each country's distance from those three countries on the polity score scale.

The polity score data spans multiple centuries (up to 2018), whereas the Gallup data stretches from 2006 to 2021. To construct a sample spanning 2006-2021, we extend the polity scores from 2018 to 2021 by repeating 2018's values to 2019,2020, and 2021. Then, we have a dataset where each country has two measures of distance – one in polity scores, one in gallup disapproval – from USA, Russia, and China for the years 2006-2021.

Appendix E.3 Estimation procedure

Appendix E.3.1 Anchor countries

In a traditional multilateration problem, one is attempting to find the location of an object like a cell phone; its location is triangulated using its distance from three cell towers. In our case, the three countries' leadership about which there is disapproval data — USA, Russia, and China— are the natural choices to be the anchor/reference points (i.e. the cell towers). Without loss of generality, we define China's location to be the origin $(0,0)$, and the USA's location to be its disapproval of China, denoted ζ, to be at $(\zeta,0)$. Then, we need to find the coordinates for Russia, where we say that the distance between Russia and the USA is the average of their two disapprovals of each other ($\beta \equiv (\beta_1+\beta_2)/2$) and its distance from China is denoted α. Our problem can be written as a system of two equations in two unknowns, where we use the Pythagorean theorem:

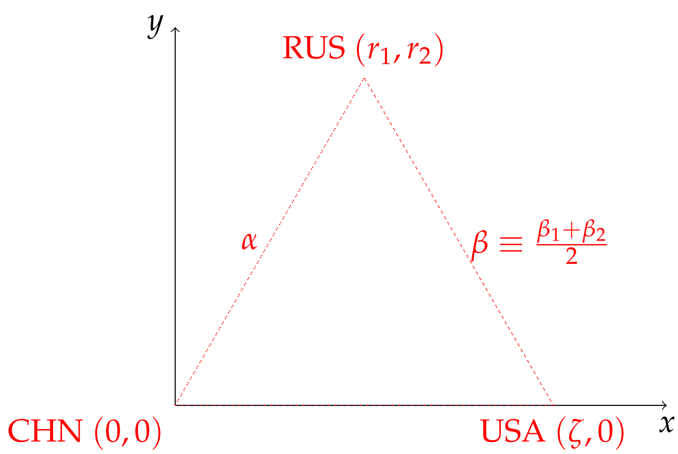
$$r_1^2 + r_2^2 = \alpha^2 \tag{46}$$

$$(\zeta - r_1)^2 + r_2^2 = \beta^2 \tag{47}$$

Which yields the following solutions to r_1 and r_2 (where we choose the positive coordinate for r_2 WLOG):

$$r_1 = \frac{\alpha^2 + \zeta^2 - \beta^2}{2\zeta} \text{ and } r_2 = \sqrt{\alpha^2 - r_1^2} \tag{48}$$

Where we (WLOG) choose the positive coordinate to get its location:



This technique would work perfectly if there were no error in the reported distances of Russia from China and the US, but indeed there is. This leads to violations of the triangle inequality which make the above technique infeasible in the cases of said inconsistency. As a result, we instead find the 'optimal' coordinate for Russia by finding the point which minimizes the error between the distances implied by the chosen coordinate and the observed distances. Imagining the circles with center at $(0,0)$ with radius α and center at $(\zeta),0$ with radius β, it is clear that the point that minimizes the error between the distance implied by Russia's chosen coordinates and the observed distances (i.e. the radii of the circles) is given by any point on the shortest line connecting each circle; this line runs through the x-axis. We choose the midpoint of this line as Russia's coordinate when there is a violation of the triangle inequality.[9] This means that Russia's coordinates are $r_1 = \frac{\zeta - \beta + \alpha}{2}$ and $r_2 = 0$.

In addition, we note that Gallup data is missing for the USA's disapproval of Russia in 2008 and of both Russia and China in 2012; we fill in the missing data using imputations (via Lasso) from Pew data.

Appendix E.3.2 Other countries

Once the anchor points are defined for each year, we then turn to finding the other countries' locations relative to the anchor countries' coordinates. In this section of the model, there is a large and important point of divergence from how we calculated Russia's location. With Russia, we chose to find the single optimal location of its coordinates (which is necessary for the anchor countries), but for non-anchor countries, we adopt a different approach. Whereas Russia's coordinate is the point that minimizes some log-likelihood, we instead wish to create a representative sample of the other countries' likelihood over the entire feasible space. We then find two countries distances from each other not by computing the Euclidean distance between their optimal coordinates, but instead by measuring the distance between their likelihoods over the entire space. We choose to use W_2, the 2-dimensional version of Wasserstein distance, to measure the distance between the likelihoods. However, calculating this distance is computationally expensive, and so we must find a small, representative sample to keep the W_2 computation fairly quick. To do this requires the following steps:

1. Define the posterior distribution
2. Create a large, very accurate sample of the likelihood
3. Compress that large sample down to a smaller, representative sample
4. Compute the distance between each country's pairs representative samples

Posterior distribution set-up Given the (assumed to be known) location of USA, Russia, and China, all other countries report distances from the anchor countries, where we denote country i's reported distance from anchor country $c \in \mathcal{C}$ in year t as a noisy signal of its true distance:

$$\hat{d}_{ict} = d_{ict} + \epsilon_{ict} \tag{49}$$

Where we assume that $\epsilon_{ict} \sim \mathcal{N}(0, \sigma_t^2)$ i.i.d. across countries and years and $d_{ict} = \sqrt{(x_{it} - x_{ct})^2 + (y_{it} - y_{ct})^2}$. Note that we allow σ_t^2 to vary across years, and we calculate

9. There are only two years in which Russia's optimal coordiantes violate the triangle inequality: 2009 and 2010.

it as explained later in Appendix E.5. Recalling that the pdf of a mean-zero Gaussian is:

$$f_\epsilon(\hat{d}_{ict} - d_{ict}) = \frac{1}{\sqrt{2\pi\sigma_t^2}} \exp\left\{-\frac{\epsilon^2}{2\sigma_t^2}\right\} \tag{50}$$

Then the joint probability (given the independence assumption) of observing $\hat{\boldsymbol{d}}_{it}$ given chosen coordinates (x_{it}, y_{it}) is:

$$\mathcal{L}(x_{it}, y_{it}|\hat{\boldsymbol{d}}_{it}) = \prod_c f_\epsilon(\hat{d}_{ict} - d_{ict}) = \left(\frac{1}{\sqrt{2\pi\sigma_t^2}}\right)^3 \exp\left\{-\frac{1}{2\sigma_t^2}\sum_c \left(\hat{d}_{ict} - d_{ict}\right)^2\right\} \tag{51}$$

So for each country-year, we will have some $\mathcal{L}_{it}$, and we can normalize it to define

$$g(x,y)_{it} \equiv \frac{\mathcal{L}_{it}}{\int\limits_{\Omega\times\Omega} \mathcal{L}_{it} dx dy} \tag{52}$$

Where we choose $\Omega = [-1.5, 1.5]$. Note that this is equivalent to a Bayesian posterior if our prior is completely uniform, i.e. $g(x,y)_{it}$ is the posterior distribution of country i in year t's location in the space, assuming a uniform prior.

Getting representative sample of the posterior distribution The next goal is to get a representative sample of the posterior distribution so that we can calculate the W_2 between two countries' posterior distributions. We get a large sample of 100,000 points to be a 'master' sample of the posterior, which is achieved via rejection sampling. We then compress this large master sample down to a smaller, discretized sample using KMeans, where we use k-means clustering to find 1000 clusters, and the final sample points are the centers of each of these clusters. Since some clusters could be more or less dense (i.e. contain more or less points from the master sample), we define the marginal distribution (i.e. the weights) over the cluster centers as the number of points in that cluster. This gives a distribution—a set of points and weights—which we can then use to calculate the W_2 between countries.[10]

Calculating distance between posterior distributions We then calculate the W_2 distance between each country pair's posterior distributions using a package from POT (Python Optimal Transport) called emd2. Note that in order to do calculate the distance involving an anchor country, we must define some posterior despite the fact that we treat them as belonging to a single point. Therefore we choose a posterior with all mass at the relevant coordinate.

10. We also tried using KBinsDiscretizer's quantile binning method to create the discretized sample, but we found that this underperformed in comparison to KMeans. This is because KBinsDiscretizer's quantile method creates the cut-points along each axis separately, and so the resulting rectangles do not contain the same number of points and also fail to take advantage of the 2D geometry. We found that when comparing the W_2 between the master sample and two different samples: one generated via KMeans and another via KBinsDiscretizer, the former produced a lower distance to the master sample.

Appendix E.4 Results

The above process results in a set of W_2 distances between all countries' (within each year) posterior distributions of location in a 2D space derived from Gallup leadership disapproval scores. We combine this measure with a distance measure gotten from the Polity Project, which represents countries' political institutions on a scale from -10 to 10 where larger values means more liberal institutions.[11] Normalizing the W_2 and polity distances, we then create the final variable representing countries' political distance as a convex combination of the polity and Gallup distances:

$$\overline{d}(d^P_{ijt}, d^G_{ijt}, \alpha) = \alpha d^P_{ijt} + (1-\alpha) d^G_{ijt} \tag{53}$$

Appendix E.5 Optimal Variance

Recall that each country-year's likelihood $\mathcal{L}_{it}$ depends on the distribution of the noise ϵ_t in that year; it is always mean-zero, but we allow it to have time-varying variance σ^2_t.

Now suppose that we choose the coordinates x^*_{it}, y^*_{it} which maximize the likelihood $\mathcal{L}_{it}$. Noting that these coordinates do not depend on σ, this induces some likelihood evaluated at the best coordinates:

$$\mathcal{L}(x^*_{it}, y^*_{it} | \hat{\boldsymbol{d}}_{it}) = \left(\frac{1}{\sqrt{2\pi\sigma^2}}\right)^3 \exp\left\{-\frac{1}{2\sigma^2}\sum_c \left(\hat{d}_{ict} - d^*_{ict}\right)^2\right\} \tag{54}$$

We wish to find the σ^2 that maximizes this likelihood. That is, we want to find the variance on the noise parameter that makes the best coordinates' errors the most likely. The optimal σ^2 is given by:

$$\sigma^{2*} = \frac{1}{3}\sum_c \left(\hat{d}_{ict} - d^*_{ict}\right)^2 \tag{55}$$

That is, the noise that maximizes the likelihood at the best coordinates is simply the average squared error of the implied distances. This is sensible: if we could perfectly place a country so that there were no error, then it is as if there were no noise at all, i.e. zero mean and zero variance. However, if the error at the best coordinates and therefore best distances is very large, it must mean that the observation was particularly impacted by noise, suggesting the presence of large values of ϵ, implying larger variance.

Our goal, then, is to choose the value of σ^2 for each year that maximizes the joint likelihood of *all* points being estimated. Although we are not using the MLE estimates of each country-year's coordinates in our main estimation process described in the [walkthrough](../walkthrough), we are precisely not using it because there is a lot of noise in the observations. So, we can compute how much noise there should be in each year based off of how erroneous the MLE estimates would be. If we call $\mathcal{L}^*_{it}$ the likelihood of (x^*_{it}, y^*_{it}), then the joint likelihood of a year's data at the best coordinates is $\mathcal{L}^*_t \equiv \prod_i \mathcal{L}^*_{it}$, which

11. The Polity score data is already constructed on a scale, and so estimating coordinates for each country is not necessary as the coordinates are already given; however, repeating the above procedure using each country's distance from USA, China, and Russia simply returns the original coordinates from which these distances were calculated.

means that the optimal σ_t^{2*} is simply

$$\sigma^{2*} = \frac{1}{3N_t} \sum_i \sum_c \left(\hat{d}_{ict} - d^*_{ict} \right)^2 \tag{56}$$

Where N_t is the number of non-reference countries in year t. Importantly, this is *not* the average distance between the implied and observed distances; this is the *squared* error, which is why the values are so small. The average error is $\overline{\epsilon} = \frac{1}{3N_t} \sum_i \sum_c \sqrt{\left(\hat{d}_{ict} - d^*_{ict} \right)^2}$, which is much larger than σ_t^{2*} because $\left(\hat{d}_{ict} - d^*_{ict} \right)^2 < 1$ almost always.

Appendix F Geopolitical alignment measurement based on the United Nations General Assembly votes

In this section, we describe the procedure of geopolitical preferences estimation undertaken by Bailey, Strezhnev, and Voeten 2017 based on countries' votes in the United Nations General Assembly.

Bailey, Strezhnev, and Voeten 2017 take the dataset of UNGA roll calls, which features voting behavior (yay, nay, or abstain) and the content of the resolutions for which votes were cast. It is assumed that missing votes, i.e., representatives failing to show up to a UNGA meeting, are random. Bailey, Strezhnev, and Voeten 2017 then use Bayesian methods to estimate a set of parameters related to *(a)* each resolution and *(b)* each country-year's latent preference for the US-led Western agenda. The estimates used for the present analyses are of each country-year's political preference (i.e., item *b*), but a discussion of the estimation of the resolution parameters is key to understand the value of the method and therefore the estimated preferences themselves.

The general statistical approach is to assume that there is a country-year level one-dimensional latent political preference θ_{it} to be estimated, where larger values indicate more liberal/Western preferences. There are also resolution-specific parameters to be estimated, related to how divisive that resolution is, and also how liberal/conservative one must be in order to vote a certain way. The key is that this underlying preference θ_{it} can only be identified if parameters related to each UNGA resolution are estimated too. An example is helpful to understand why both country-year preferences and resolution-specific parameters must be estimated. Suppose that there are two resolutions to be voted on: one is a condemnation of capitalism and democracy, and another is a condemnation of world hunger. The condemnation of capitalism and democracy may receive support from countries that are adversarial to the West, whereas allies (or members of) the West would vote against this resolution. In contrast, it is plausible that all countries may vote to support the condemnation of world hunger. If one compared a Western and non-Western country's voting behavior for both resolutions, one might erroneously conclude that these countries have somewhat similar preferences, as although their votes differed on the first resolution (capitalism and democracy), they both voted for the condemnation of world hunger. But voting to condemn world hunger does not meaningfully separate liberal vs. illiberal countries from each other, and so weighting this vote equally to the first resolution's votes is erroneous.

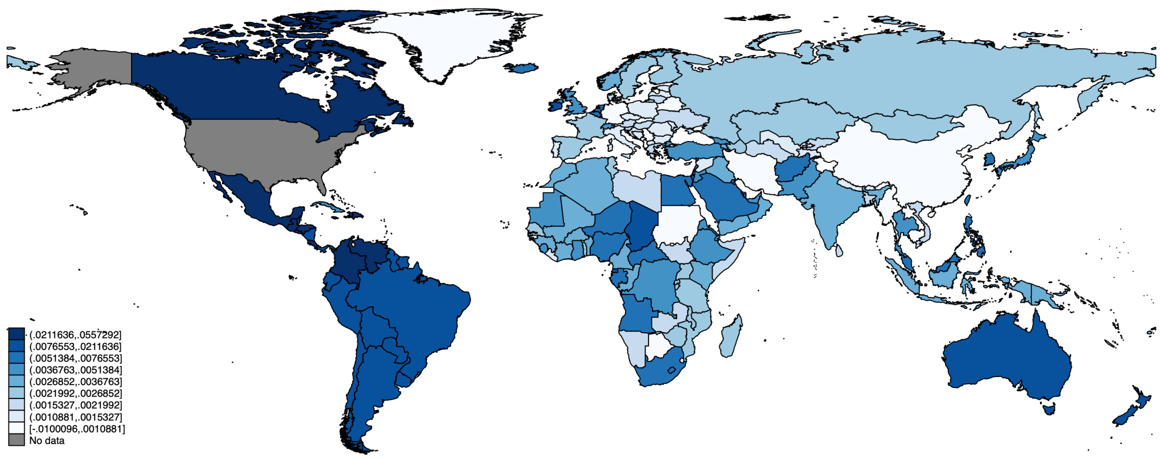
More specifically, for countries $i = 1, \ldots, N$ and resolution v in a given year t, it is supposed that the preference for a specific resolution is given by $Z_{itv} = \beta_v \theta_{it} + \epsilon_{iv}$ with the error term Normally distributed. The coefficient β_v is the 'discrimination parameter', which describes whether or not the resolution is itself of 'liberal' content. That is, if β_v is positive, then high θ_{it} countries will have a positive preference for that resolution. If β_v is negative, then low θ_{it} countries will have a positive preference for the resolution. If β_v is close to zero, then the resolution fails to meaningfully discriminate between high or low θ_{it} countries.

We emphasize that the preference Z_{itv} for a resolution v is a function of both a country's preference parameter (θ_{it}) and the way a resolution v divides countries along the relevant political dimension, as given by β_v. Then, the resolution-specific preference Z_{itv} for the vote is translated into an action of yay, nay, or abstain. But how the vote-specific preference Z_{itv} translates to the action is a function of another set of parameters to be estimated, called cutpoints γ_{1v} and γ_{2v}. Imagining the resolution-specific preferences Z_{itv} on a line, these cutpoints determine the intervals over which individuals would vote nay (leftmost interval), abstain (middle interval), or yay (rightmost interval). Thus γ_{1v} is the threshold at which individuals would switch from voting from nay to abstain (γ_{1v}) or from abstain to yay (γ_{2v}), and these parameters are estimated for each vote.

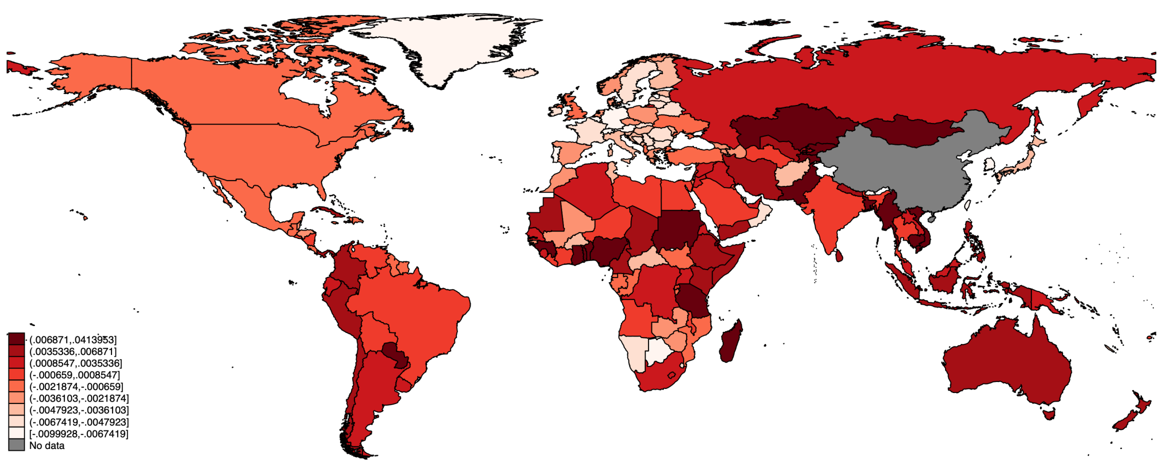
Using methods from Item Response Theory (specifically, multiple rater ordinal data model in Chapter 5 of Johnson and Albert 1999), they are able to separately estimate parameters related to the resolution and those related to underlying preferences by using Bayesian methods to sample from a posterior distribution of each of the relevant parameters. Taking the means of those posterior distributions as their estimate of each parameter, they then demonstrate that both cross-sectional and over-time variation of the estimated political preferences are an improvement over older methods.

Furthermore, their procedure makes intertemporal comparisons of preference valid by identifying resolutions that are identical in content across years. By imposing the constraint that the resolution-related parameters must be the same (across years) for these identical resolutions, the preference estimates for these issues are anchored to comparable windows across time. This makes the estimated values for preferences valid for over-time comparison.

Appendix G Additional figures and tables

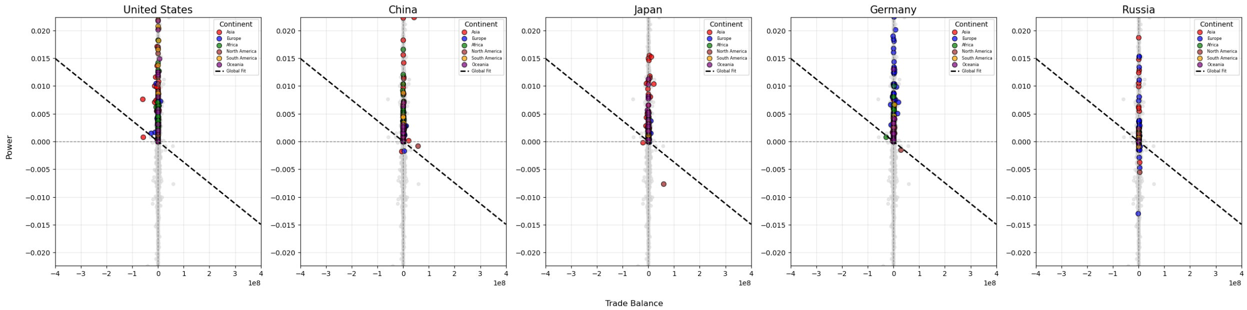


Panel A: USA's average power over other countries residualizing GDP differences and total trade volume. For a given pair made up of the USA and another country i, this plot represents the USA's directed average power (in all sectors) over all other countries i in the time period 2001-2021. Directed power ranges from $[-.14, .14]$.

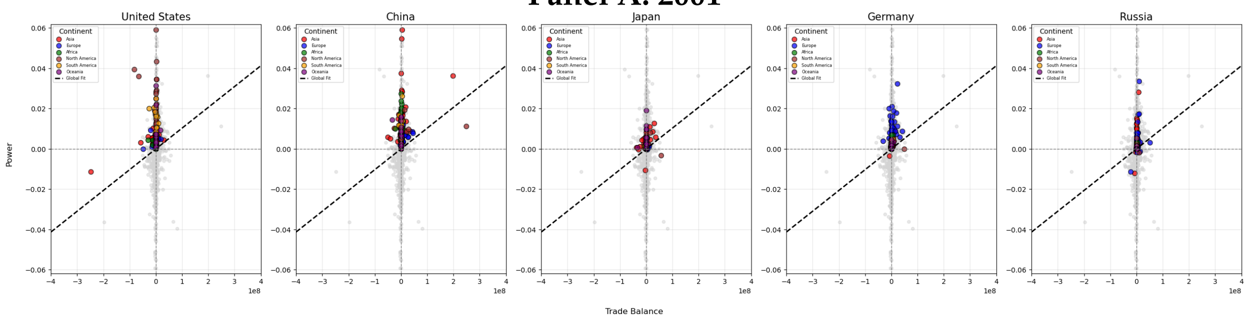


Panel B: China's average power over other countries residualizing GDP differences and total trade volume. For a given pair made up of China and another country i, this plot represents China's directed average power (in all sectors) over all other countries i in the time period 2001-2021. Directed power ranges from $[-.14, .14]$.

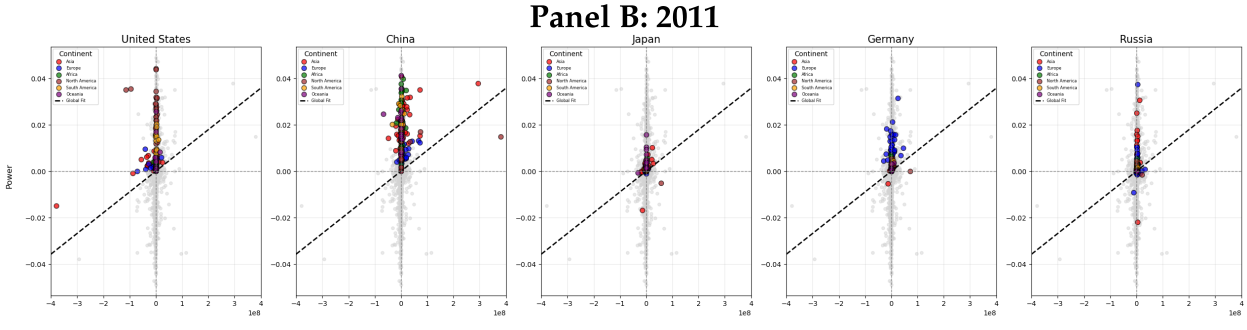
Figure A.1: USA and China's average power over other countries (residualizing GDP differences and total trade volume), 2001-2021



Panel A: 2001

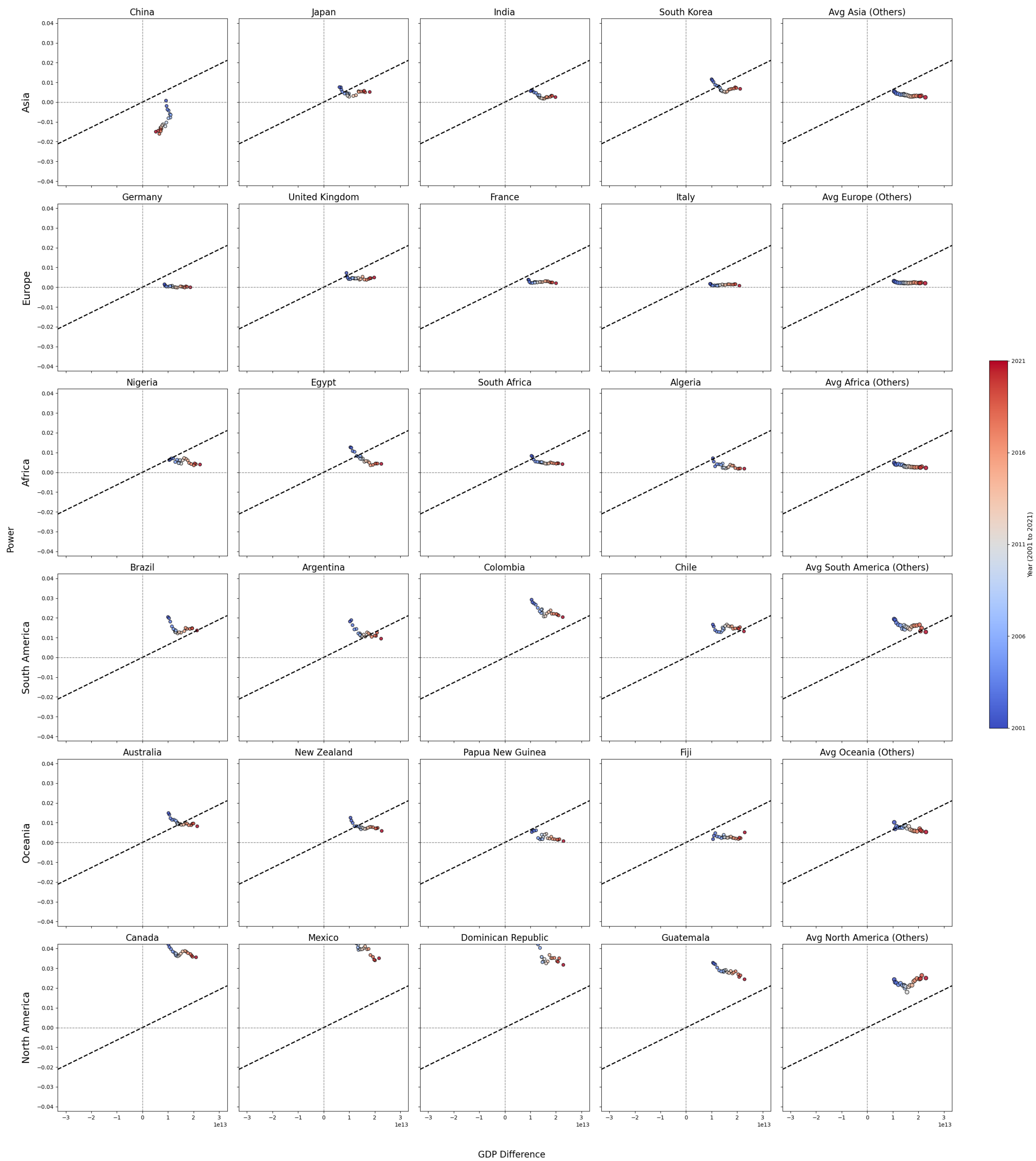


Panel B: 2011

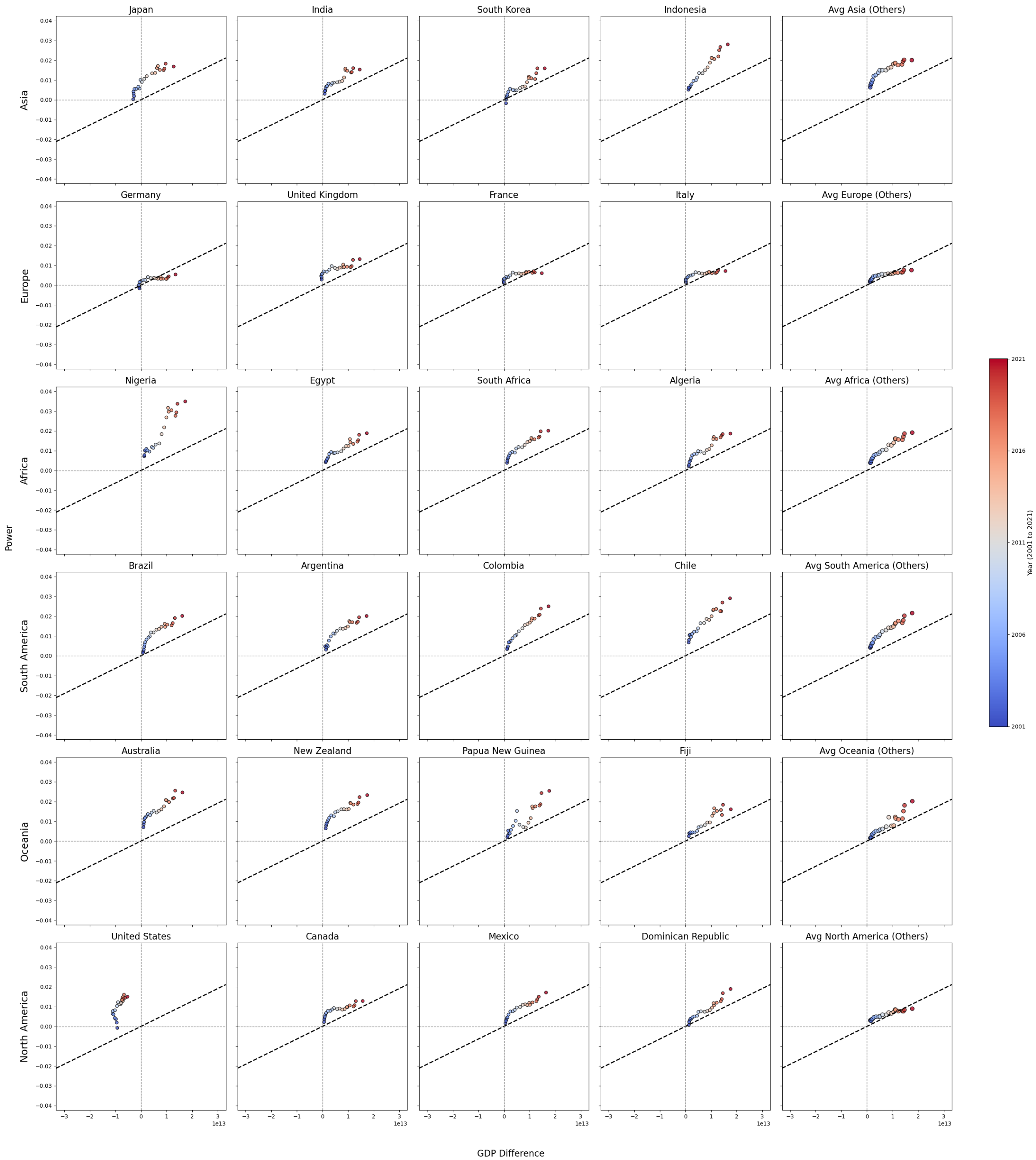


Panel C: 2021

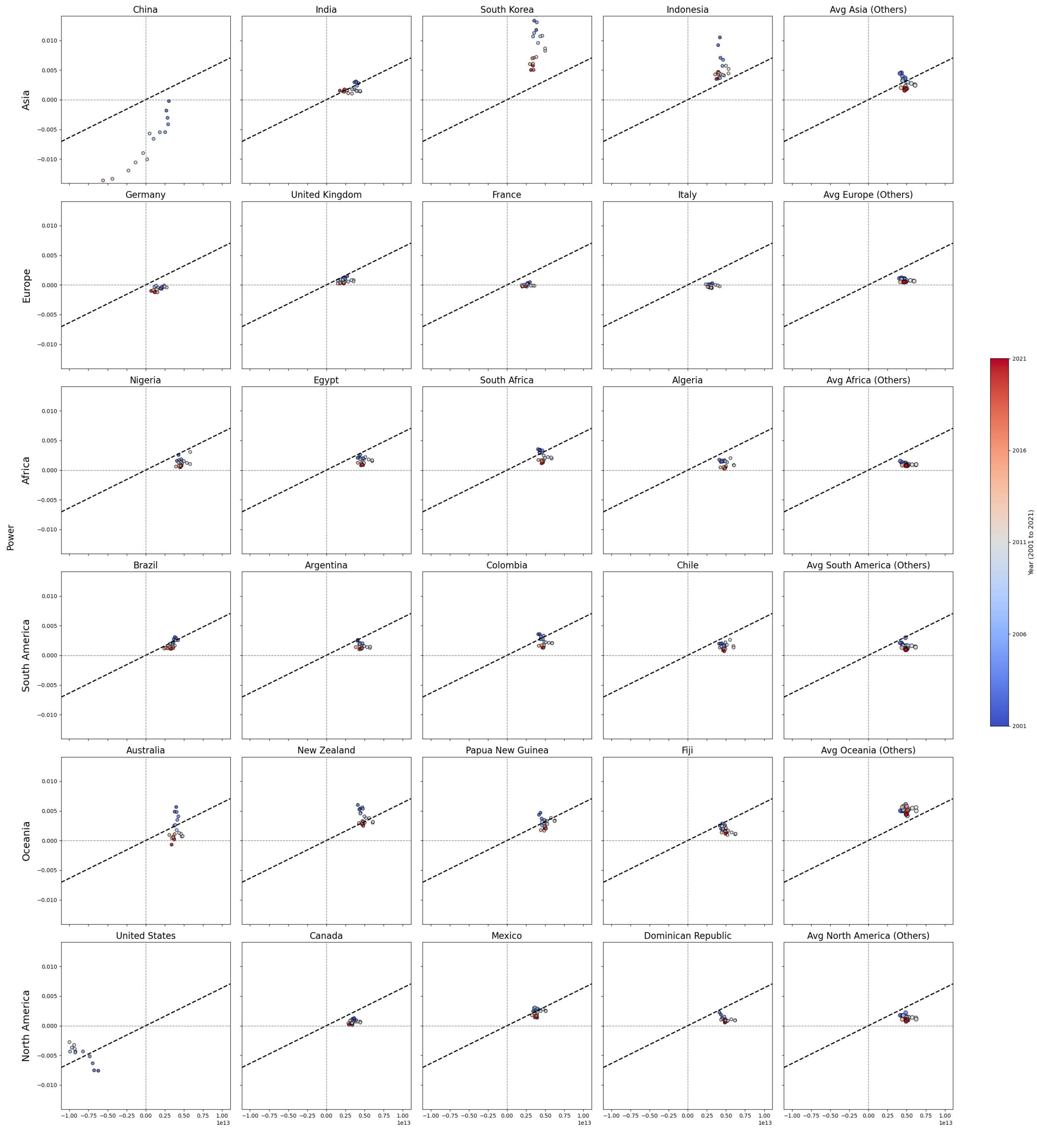
Figure A.2: Power and trade balance. This figure presents scatter plots of power (vertical axis) versus trade balance (horizontal axis) for the U.S., China, Japan, Germany, and Russia. Panel A plots 2001, Panel B plots the 2011, and Panel C plots the 2021 cross section. Each plot shows all country pairs that are associated with the U.S., China, Japan, Germany, or Russia, and the counterpart countries are color-coded by their continents while the light gray line represents all other country pairs. The dotted line represents the global best-fit line, capturing the overall relationship between power and trade balance across all country pairs.



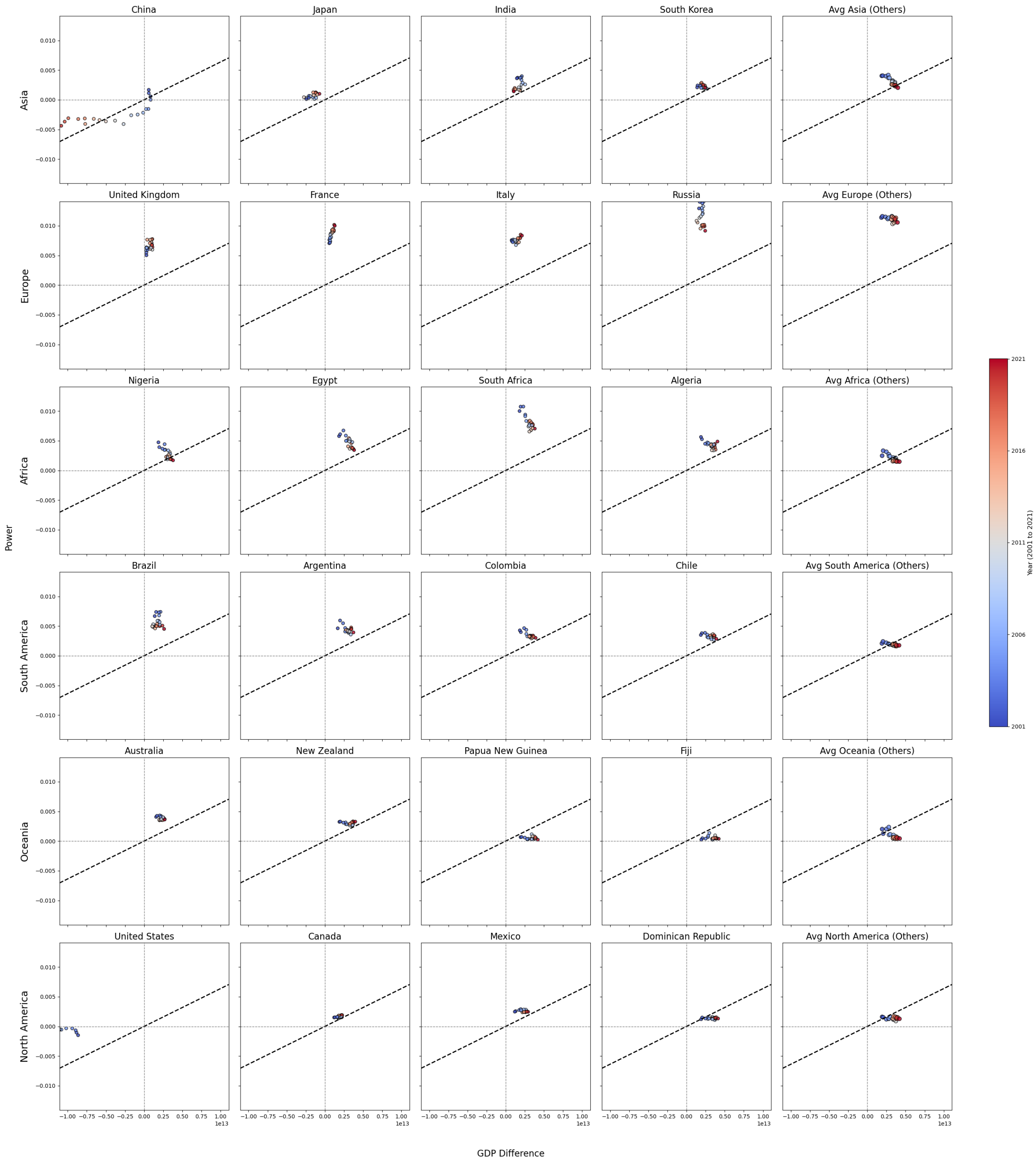
Panel A: U.S. power and GDP difference. This figure presents scatter plots of power (vertical axis) versus GDP difference (horizontal axis) for country pairs with the United States. Each row corresponds to a continent, grouping counterpart countries accordingly. Within each continent, the four largest countries by GDP are plotted individually, while the fifth column represents the average values for the remaining countries in that continent. Each dot represents a single year's data point, with color coding indicating the year: blue for earlier years (2001) and red for later years (2021). The dotted line represents the global best-fit line, capturing the overall relationship between power and GDP difference across all country pairs.



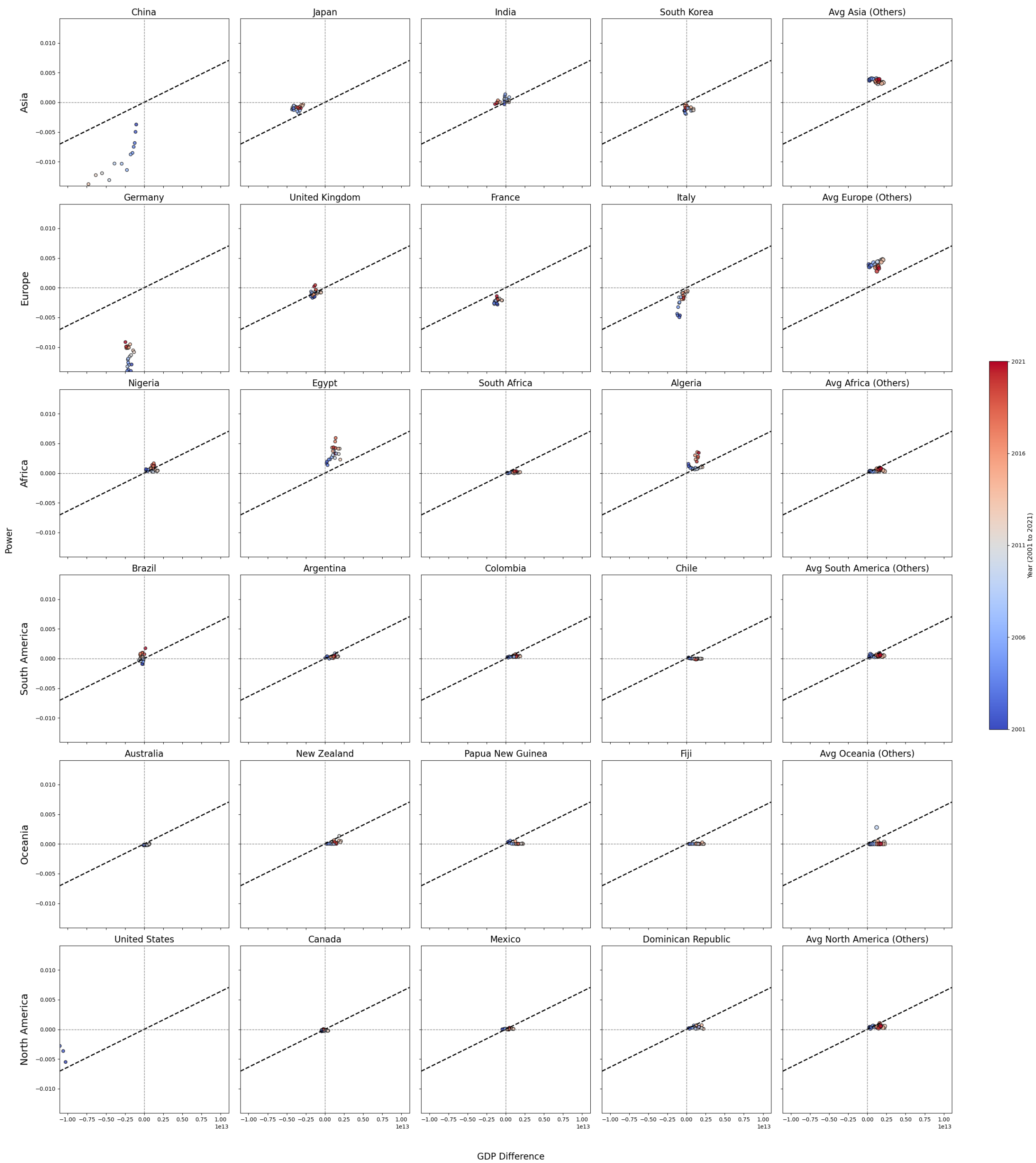
Panel B: China power and GDP difference. This figure presents scatter plots of power (vertical axis) versus GDP difference (horizontal axis) for country pairs with China. Each row corresponds to a continent, grouping counterpart countries accordingly. Within each continent, the four largest countries by GDP are plotted individually, while the fifth column represents the average values for the remaining countries in that continent. Each dot represents a single year's data point, with color coding indicating the year: blue for earlier years (2001) and red for later years (2021). The dotted line represents the global best-fit line, capturing the overall relationship between power and GDP difference across all country pairs.



Panel C: Japan power and GDP difference. This figure presents scatter plots of power (vertical axis) versus GDP difference (horizontal axis) for country pairs with Japan. Each row corresponds to a continent, grouping counterpart countries accordingly. Within each continent, the four largest countries by GDP are plotted individually, while the fifth column represents the average values for the remaining countries in that continent. Each dot represents a single year's data point, with color coding indicating the year: blue for earlier years (2001) and red for later years (2021). The dotted line represents the global best-fit line, capturing the overall relationship between power and GDP difference across all country pairs.

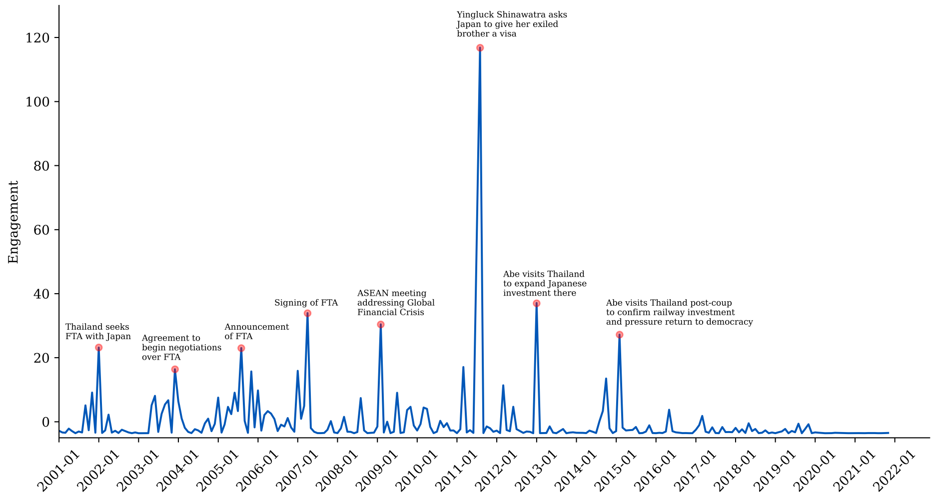


Panel D: Germany power and GDP difference. This figure presents scatter plots of power (vertical axis) versus GDP difference (horizontal axis) for country pairs with Germany. Each row corresponds to a continent, grouping counterpart countries accordingly. Within each continent, the four largest countries by GDP are plotted individually, while the fifth column represents the average values for the remaining countries in that continent. Each dot represents a single year's data point, with color coding indicating the year: blue for earlier years (2001) and red for later years (2021). The dotted line represents the global best-fit line, capturing the overall relationship between power and GDP difference across all country pairs.

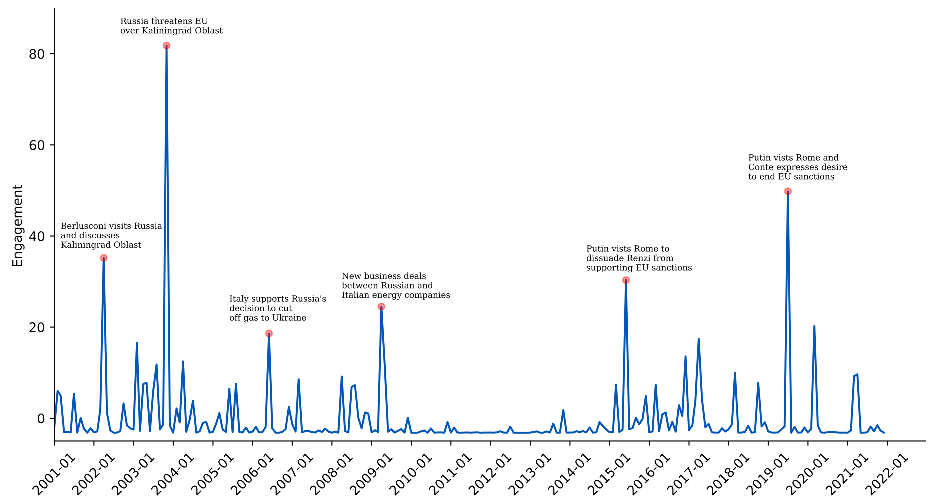


Panel E: Russia power and GDP difference. This figure presents scatter plots of power (vertical axis) versus GDP difference (horizontal axis) for country pairs with Russia. Each row corresponds to a continent, grouping counterpart countries accordingly. Within each continent, the four largest countries by GDP are plotted individually, while the fifth column represents the average values for the remaining countries in that continent. Each dot represents a single year's data point, with color coding indicating the year: blue for earlier years (2001) and red for later years (2021). The dotted line represents the global best-fit line, capturing the overall relationship between power and GDP difference across all country pairs.

Figure A.3: Bilateral power and GDP difference



Panel A: Japan and Thailand engagement over time



Panel B: Italy and Russia engagement over time

Figure A.4: Engagement over time for two country pairs: Japan-Thailand and Italy-Russia. This figure plots the engagement variable, where especially notable geopolitical events are labeled. Labels for notable events were hand-coded by reading articles about the relevant event types and countries in the time periods in which engagement peaked (e.g. 'diplomatic meeting between Japan and Thailand in January 2002').

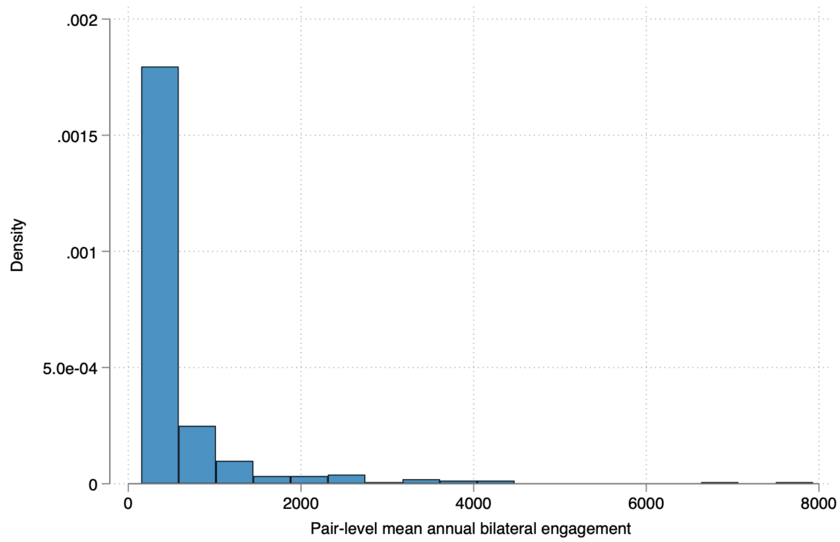
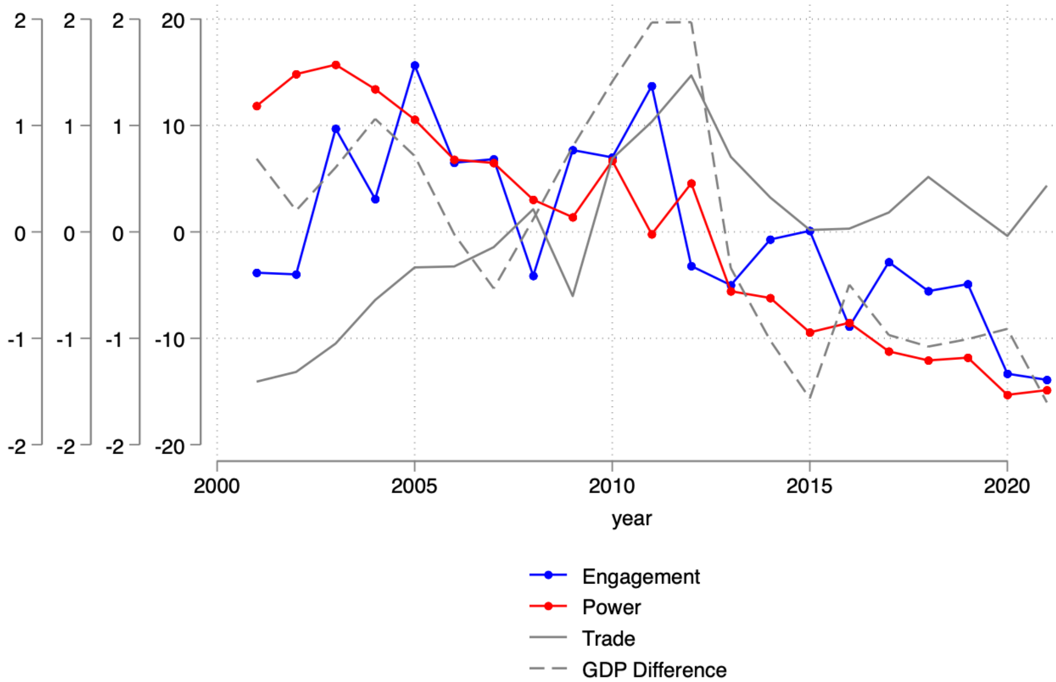
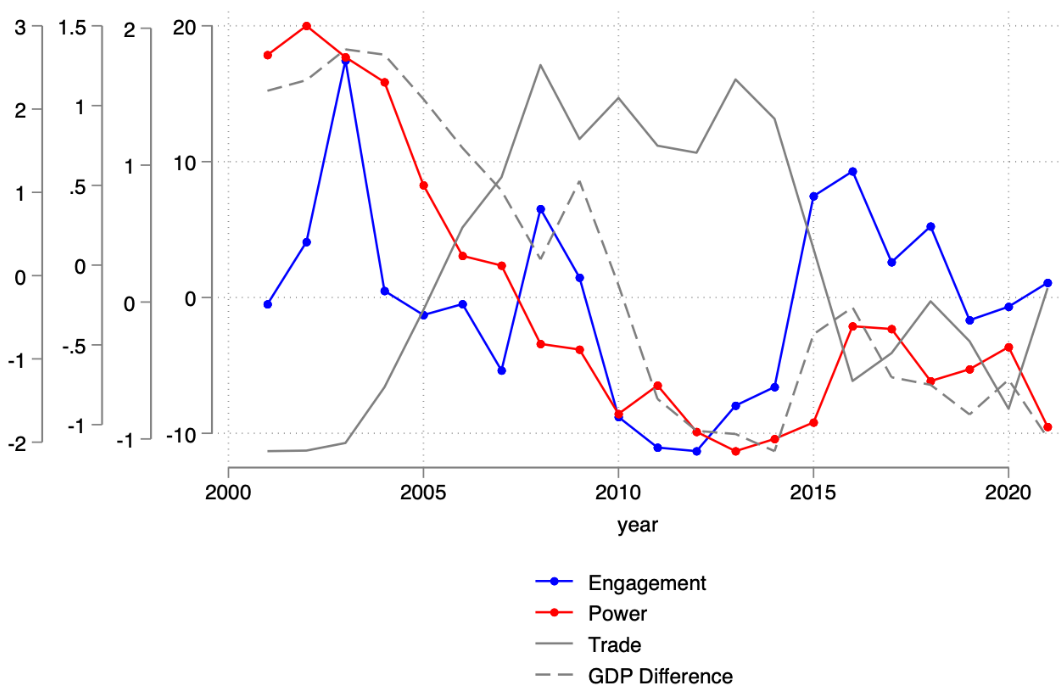


Figure A.5: Histogram of pair-level mean annual bilateral engagement, pairs with mean > 150. This figure is constructed by calculating the mean annual number of events in the range $[-7, 8)$ within each pair, and then plotting the histogram of those pair-level means. We restrict to values greater than 150 because many pairs on average have very little engagement, and so the figure's long right tail is difficult to observe without the aforementioned restriction. This figures uses events from the ICEWS dataset in the time period 2001-2021.



Panel A: Japan and Thailand power and engagement over time



Panel B: Italy and Russia power and engagement over time

Figure A.6: Examples of power and engagement over time. This figure plots engagement, power (undirected version), total bilateral trade, and GDP difference (undirected version). The rightmost axis corresponds to engagement, the second to right axis corresponds to power, the third to right corresponds to total bilateral trade and the leftmost axis corresponds to GDP difference. All variables are standardized at the pair level and are residualized on pair and year fixed effects.

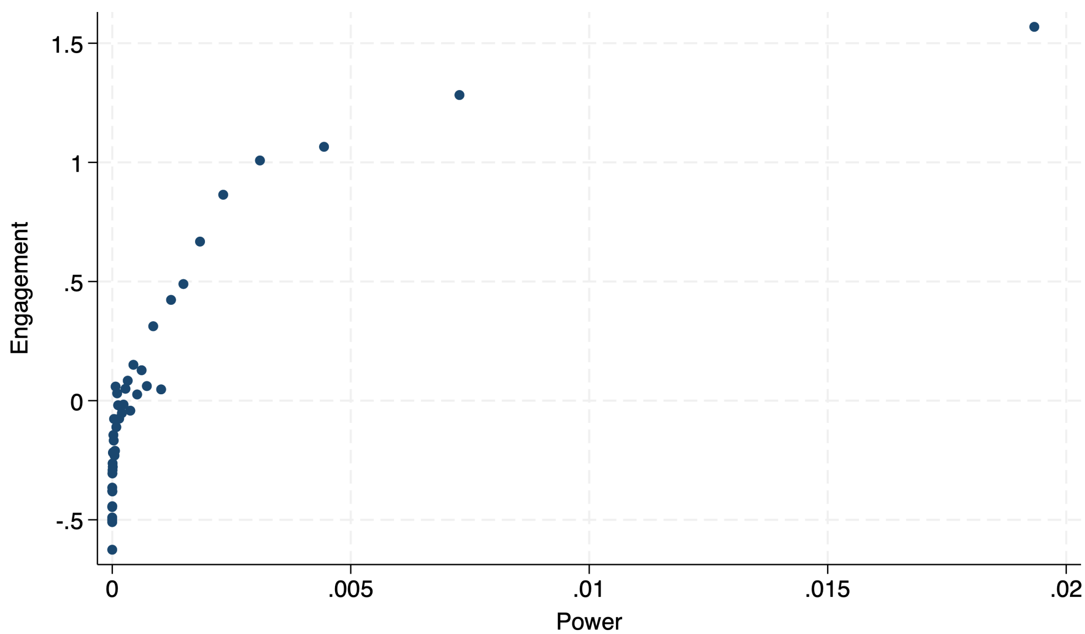


Figure A.7: Power and engagement. This figure displays a binned scatterplot of the regression in Table 2 except that power is *not* standardized. That is, it relates the pairwise z-score of engagement to the pairwise non-standardized version of power (from all sectors), while controlling for pair-level standardized values of GDP difference and total trade, as well as employing pair and year fixed effects. This is created using the stata package 'binsreg'.

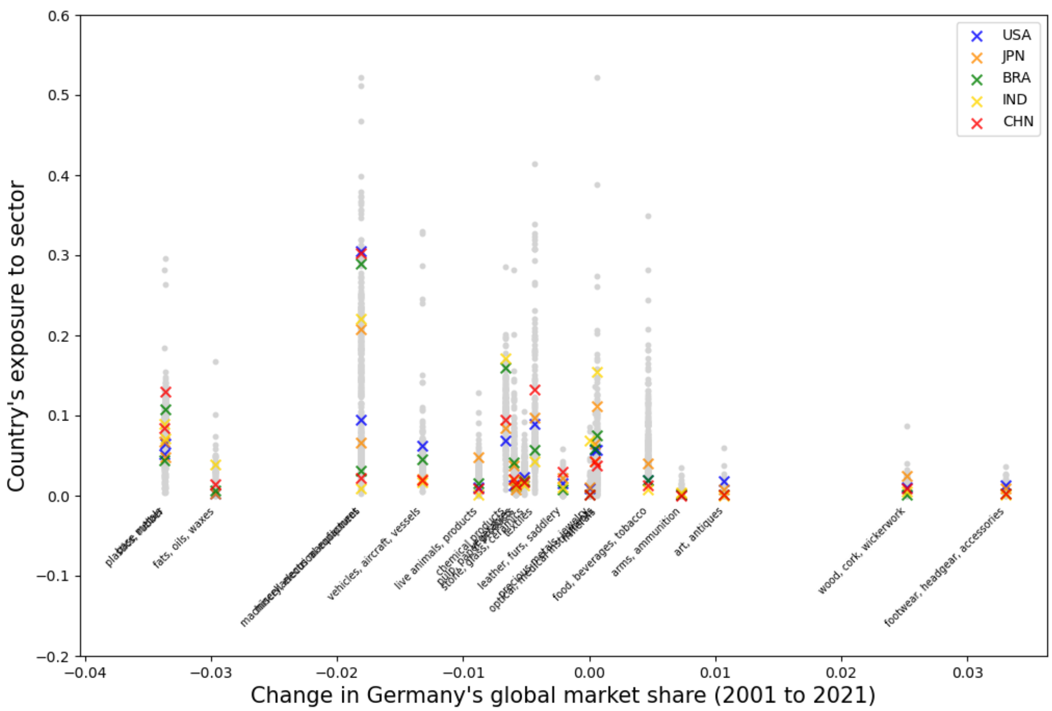


Figure A.8: Source of variation in shift share. This figure illustrates the source of variation in the shift share instrument. The X-axis represents the sector-level change in Germany's global market share from 2001 to 2021, indicating the shift component. The Y-axis depicts the share component, showing the share of each sector in selected importing countries' import volumes from 1995 to 1999 weighted by sector level elasticity of substitution.

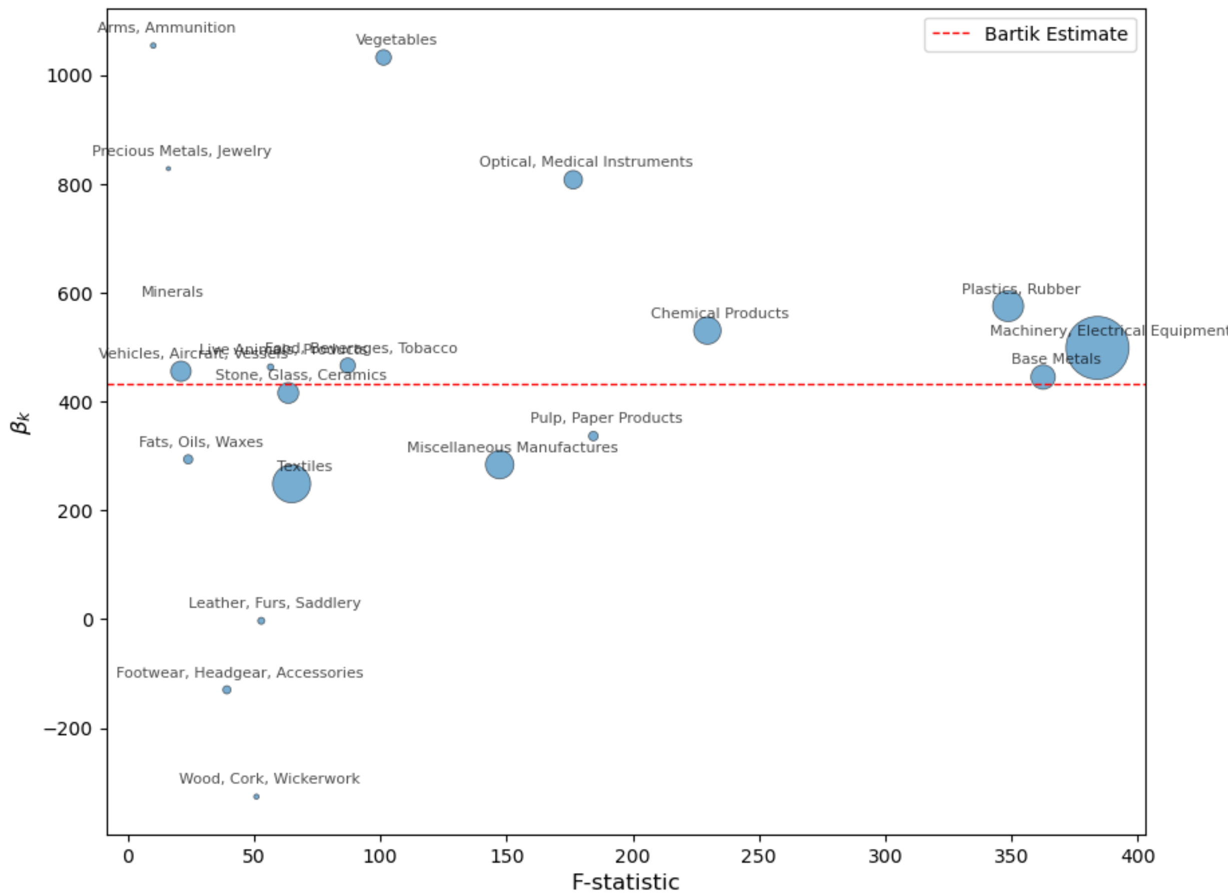


Figure A.9: Dispersion of just-identified β_k. This figure plots the just-identified coefficient β_k for each sector k, obtained by using variation from only a single sector's instrument—rather than the aggregated shift-share instrument used in the baseline specification. The Y-axis represents the sector-level coefficient, while the X-axis displays the first-stage F-statistic when using only that sector as an instrument. The size of each circle corresponds to the Rotemberg weight of the respective sector. The red dashed line indicates the baseline Bartik shift-share coefficient of 431.8, providing a benchmark for comparison with the average effect.

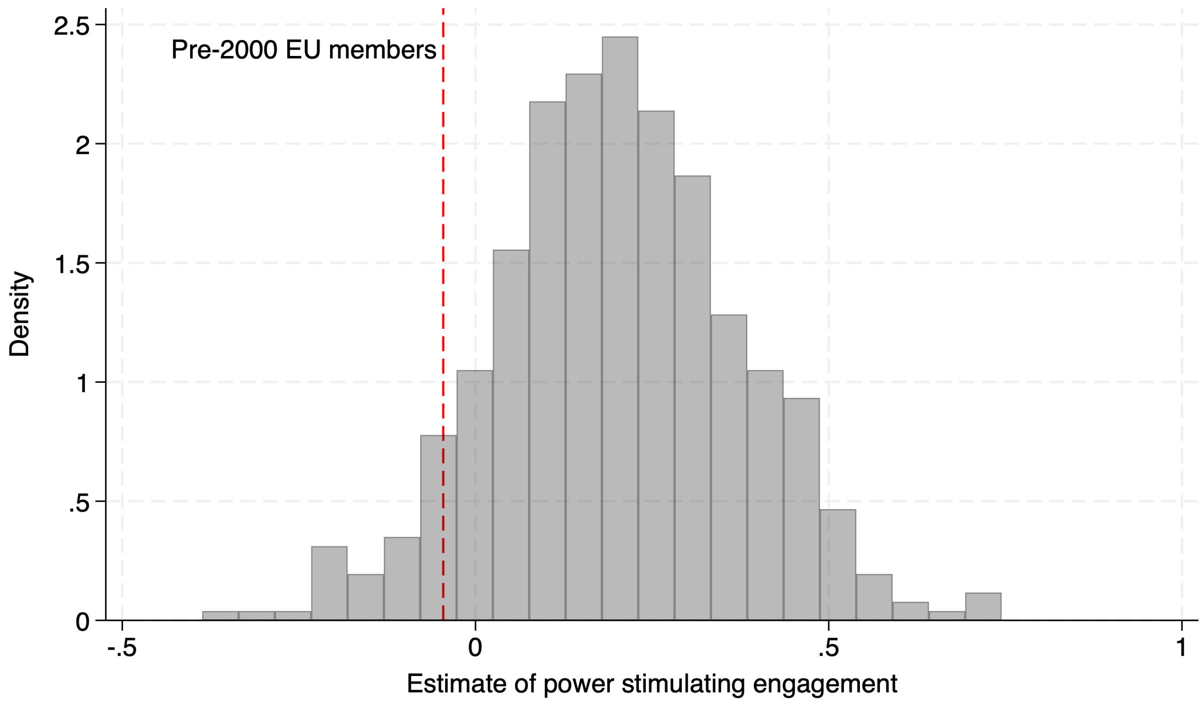


Figure A.10: Power and engagement: EU vs. random draw. This figure shows a histogram of estimated effects of power on engagement, replicating Column 3 of Table 2. Each estimate is based on a random sample of 105 country pairs, matching the number of possible bilateral pairs among the 15 EU member states prior to 2000 (Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, Netherlands, Portugal, Spain, Sweden, and the United Kingdom). The histogram reflects the distribution from 500 such random draws involving one EU and one non-EU country. The red vertical line indicates the corresponding estimate using only EU member states.

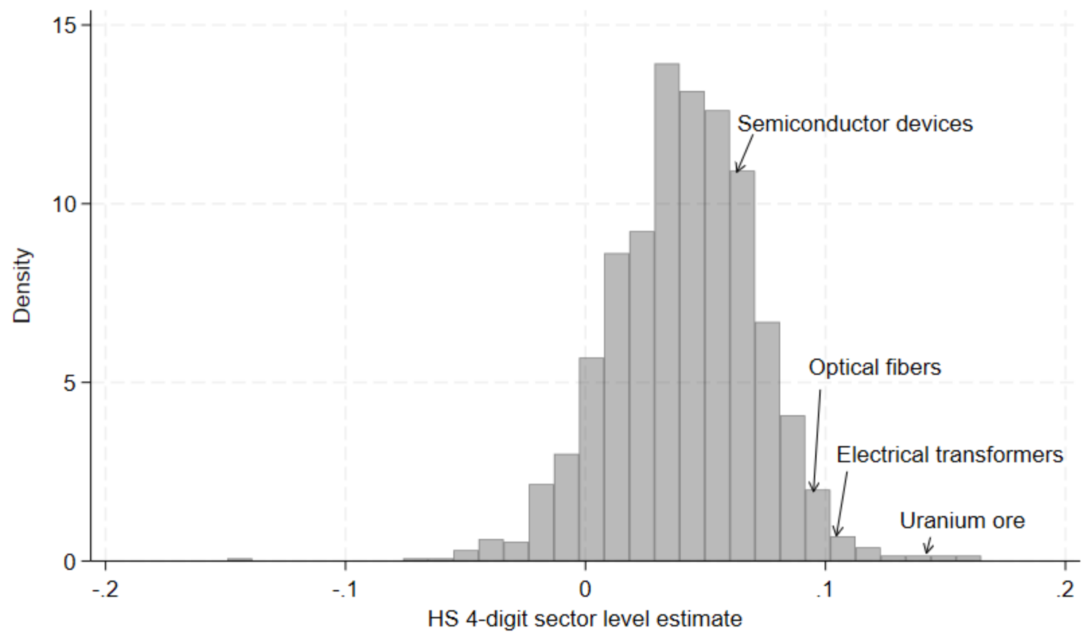


Figure A.11: Distribution of sector-specific coefficient of power-engagement. This figure displays a histogram of the sector-specific power-engagement coefficients at the HS 4-digit level. The coefficients are estimated by recalculating the power measure for each HS 4-digit sector, treating each sector as the universe of trade activity. Subsequently, the baseline regression specified in Equation (12) is estimated using these recalculated power measures.

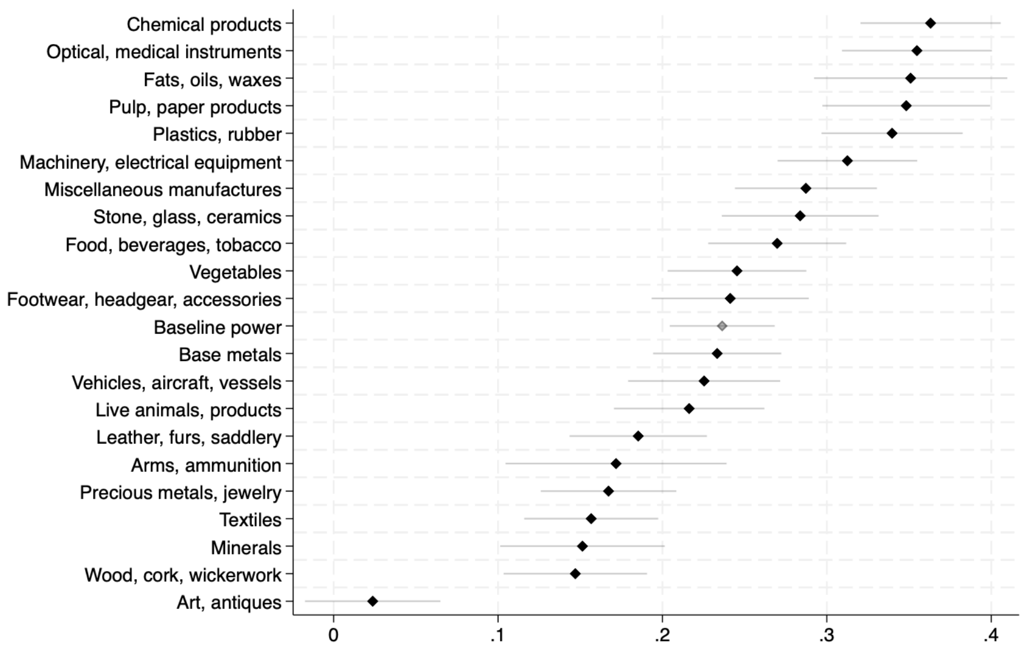


Figure A.12: Sector-Level power and engagement. This figure presents the estimated coefficients of sector-level power measures. Instead of controlling for total trade between the country pair, we control for trade within the sector. We adjust the standard HS-section classification by reassigning sectors 25 (Salt, sulphur, lime, cement) and 26 (Ores, slag, ash) from minerals to base metals.

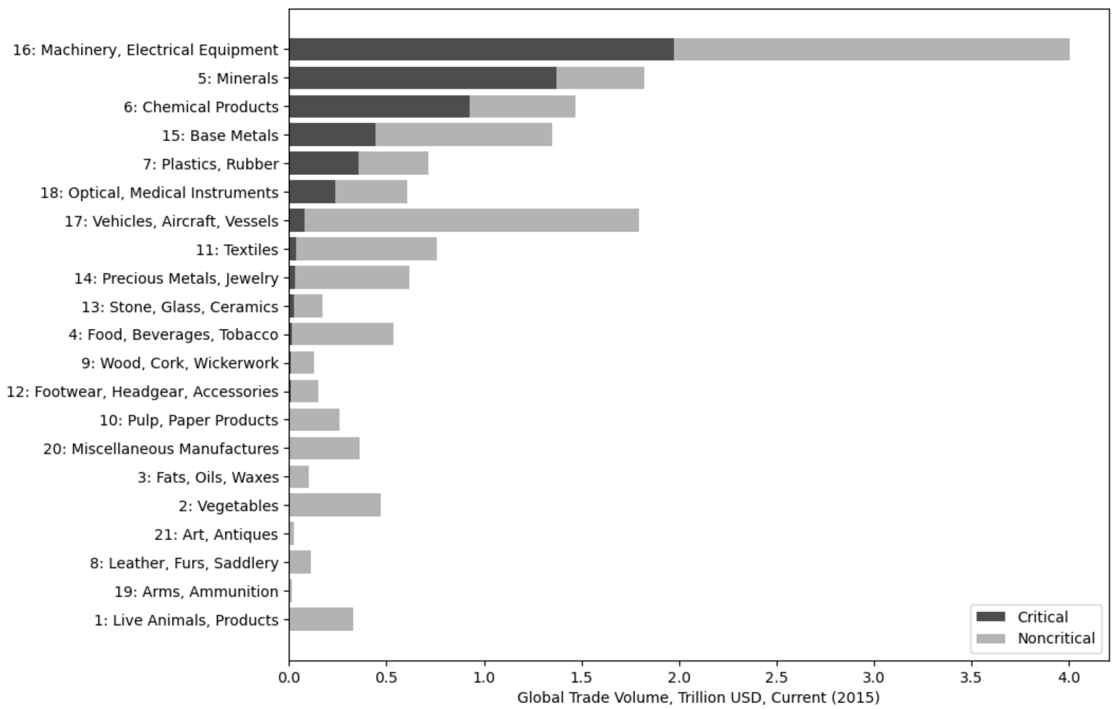


Figure A.13: Trade in critical goods sectors. This figure displays the global trade volume in 2015 for each HS-section. Critical trade volume is shaded in darker gray, and non-critical trade volume is shaded in lighter gray. We adjust the standard HS-section classification by reassigning sectors 25 (Salt, sulphur, lime, cement) and 26 (Ores, slag, ash) from minerals to base metals.

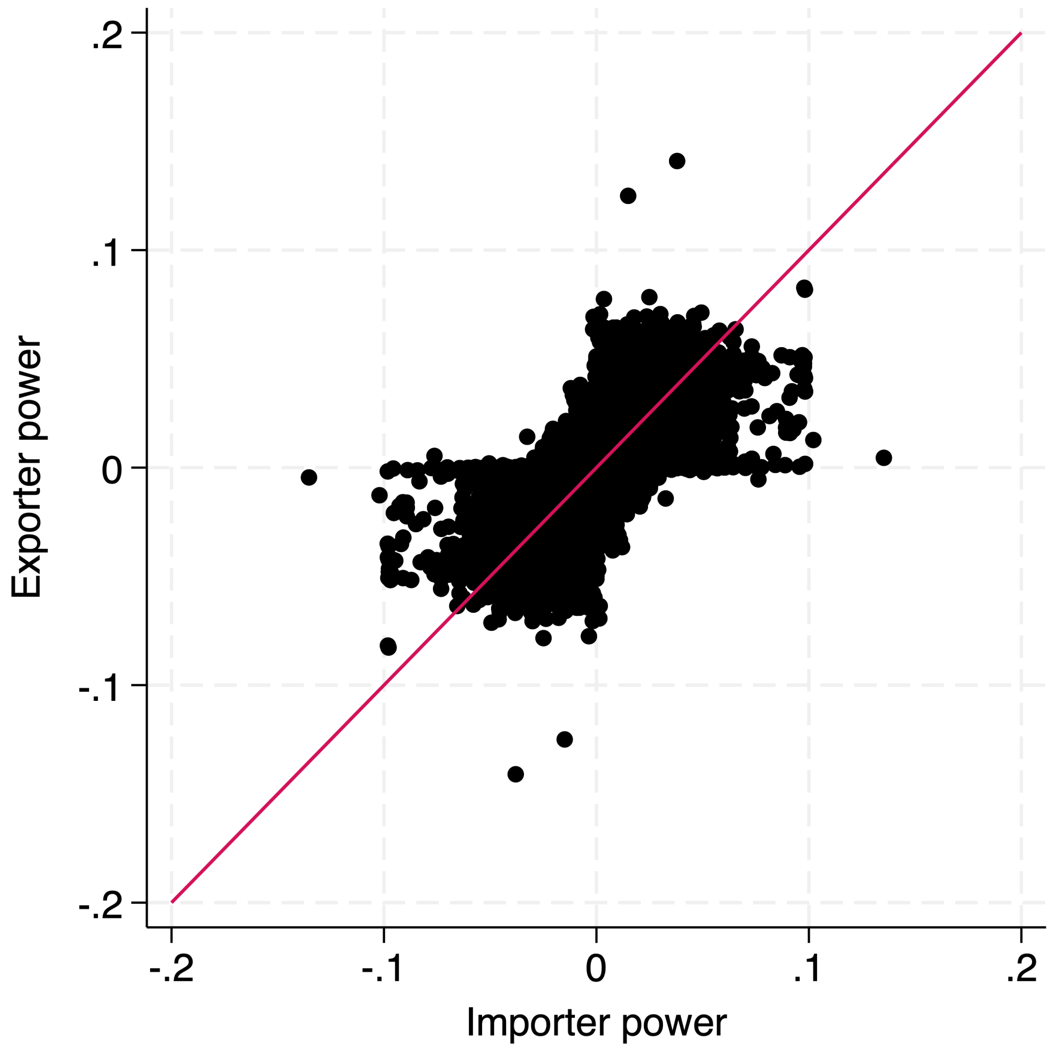


Figure A.14: Importer power and exporter power. This figure displays a scatter plot of directed country pairs' exporter power and importer power averaged across the sample periods. The red line represents the 45-degree line, indicating equal importer and exporter power.

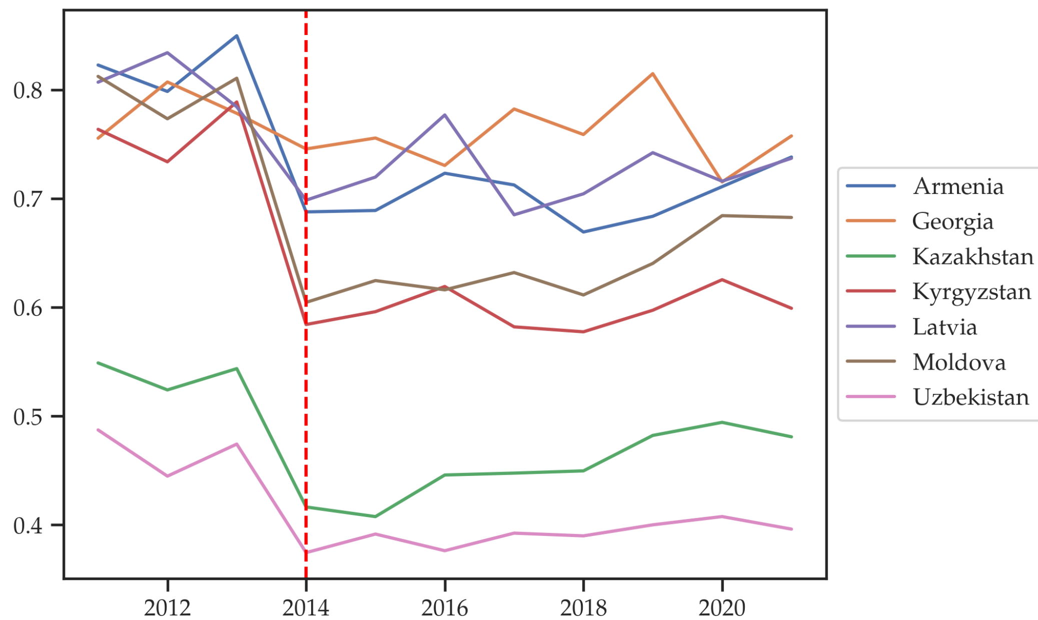
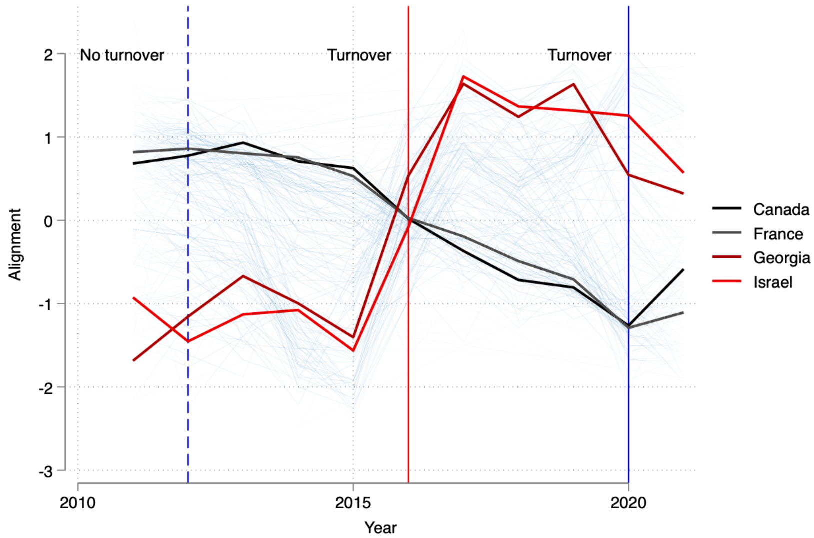
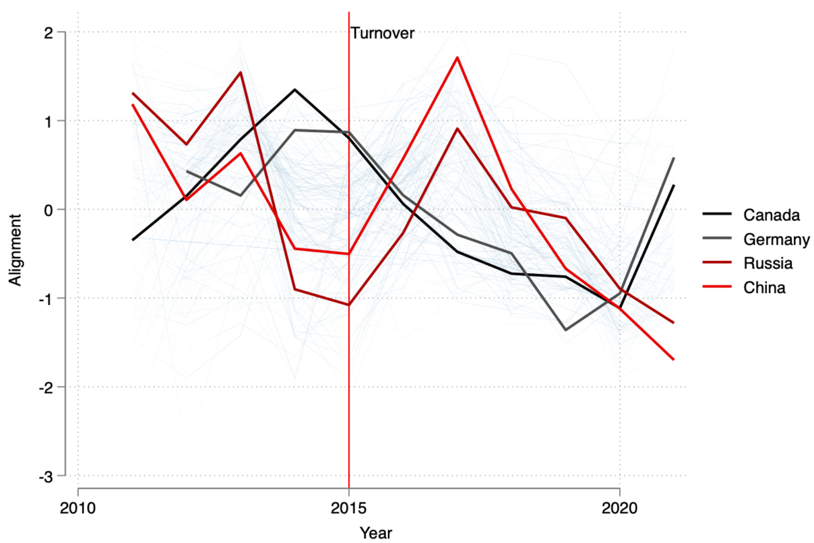


Figure A.15: Former Soviet states' alignment with Ukraine over time. This figure plots the values of alignment (estimation described in Appendix E) between Ukraine and a set of former Soviet states on the y-axis over the time period 2011-2021 (x-axis). The dotted red line indicates the 2014 invasion of Ukraine by Russia. The precipitous decline in alignment with Ukraine of all listed countries exemplifies the variation that the statistical model contains.



Panel A: Alignment with USA over time



Panel B: Alignment with Poland over time

Figure A.16: Alignment and elections. Panel A plots the values of alignment (estimation described in Appendix E) between USA and all other countries (in blue) with four specific countries (Canada, France, Georgia, and Israel) in bolder lines. Panel B plots alignment with Poland and all other countries, with Canada, Germany, Russia, and China in bolder lines. Three vertical lines appear in Panel A: the dotted blue line in 2012 signifies the USA's election with no turnover, the solid red line in 2016 signifies the USA's election with turnover in which a Republican won, and the solid blue line in 2020 signifies turnover in which a Democrat won. One vertical line appears in Panel B, which represents the 2015 Polish election. We include only one line in this panel because Poland's 2015 election is featured in our set of close elections, whereas none of its other elections are considered close. None of the USA's elections are considered close, and so they are all plotted.

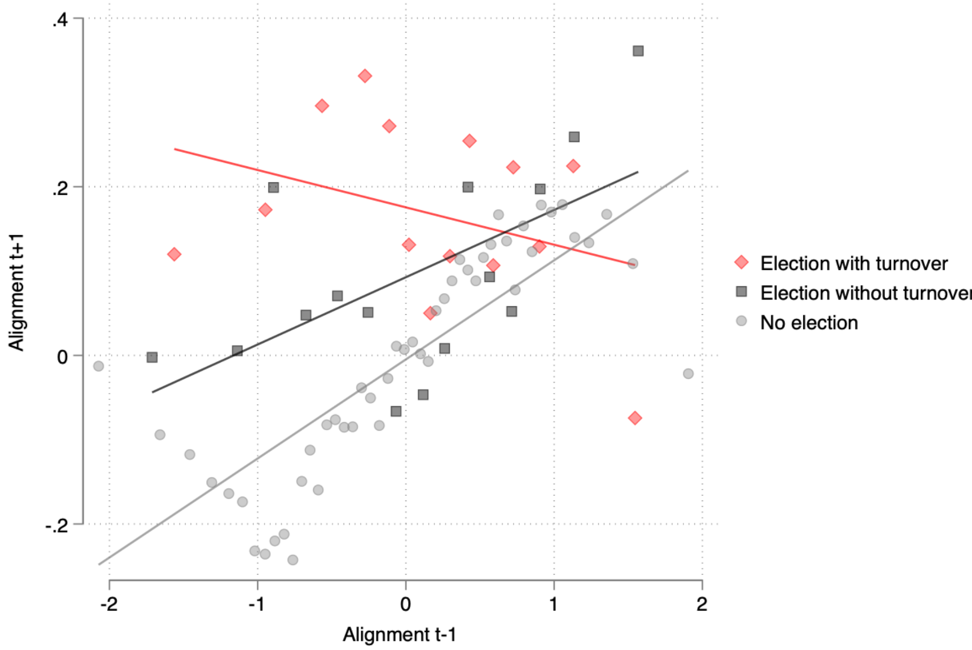


Figure A.17: This figure shows the relation of alignment before and after each year t for three different types of observations: pair-years for which there was an election that resulted in turnover (red), pair-years for which there was an election that did not result in turnover (black), and pair-years in which there was no election (gray). Alignment is residualized on controls for GDP difference, total trade, power, and year and pair fixed effects (as in Equation (18)).

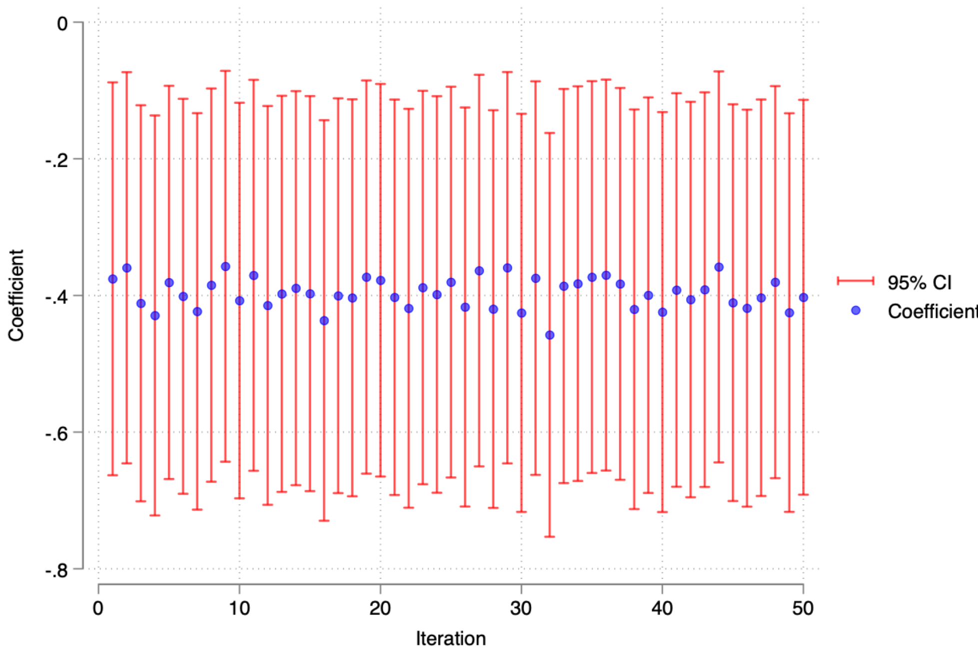


Figure A.18: This figure shows the coefficient on predicted alignment in the second stage specification in Equation (19) for fifty draws of random 'control groups', i.e. designations of country A and B in pairs with no elections. As discussed in Section 5.3.1, there is no systematic way to designate country A and country B for a pair which has no elections. Regardless of the designation, our coefficient is similar in magnitude and significance.

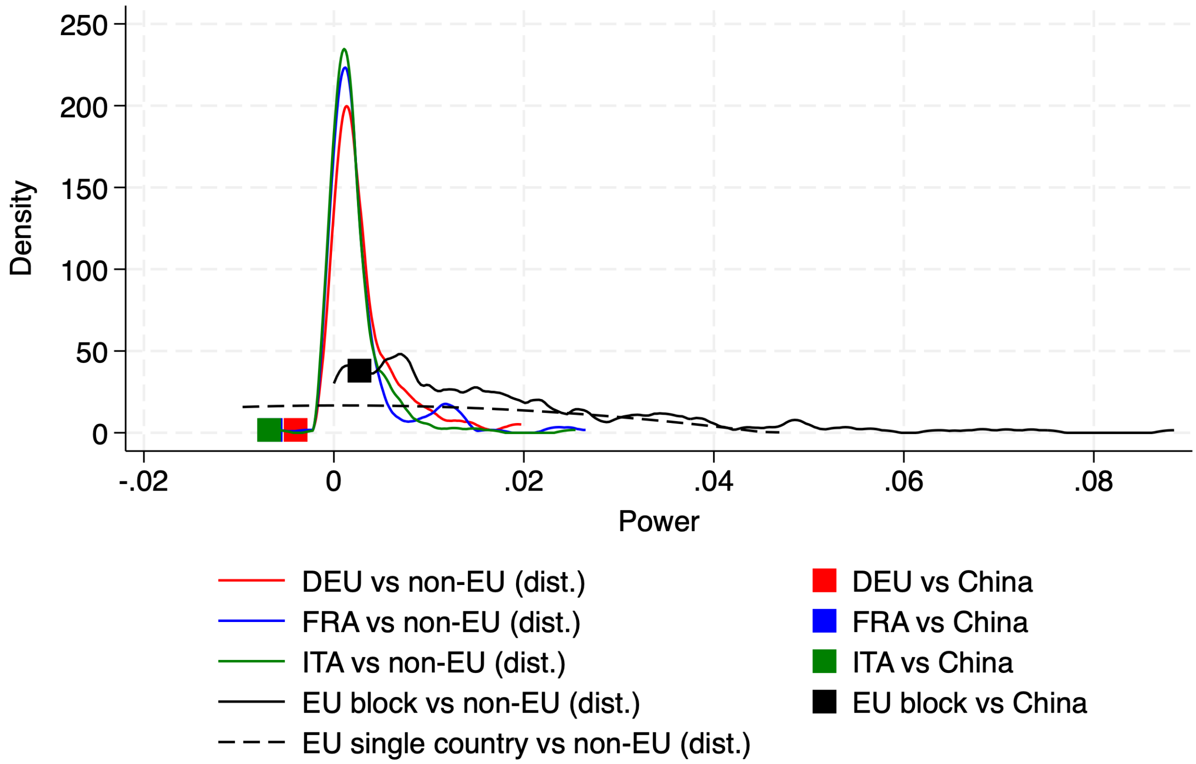


Figure A.19: This figure displays the distribution of EU countries' power against non-EU countries in 2010. EU countries used in this figure are EU member states pre-2000 (Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, Netherlands, Portugal, Spain, Sweden, and United Kingdom). The red, blue, and green lines represent the power of Germany, France, and Italy, respectively, against non-EU countries. The solid black line indicates the EU bloc's power, defined by considering the EU as a single entity and combining the trade volumes from multiple EU countries. This calculation excludes within-EU trade. The dotted black line represents all [single EU country, single non-EU country] pairs. The squares mark the power measures of the selected countries and the EU bloc's power against China.

Table A.1: ICEWS event categories and intensities

Event category	Intensity
Coerce	-7.0
Expel or withdraw	-7.0
Expel or withdraw peacekeepers	-7.0
Give ultimatum	-7.0
Halt mediation	-7.0
Threaten to halt international involvement (non-mediation)	-7.0
Threaten with military force	-7.0
Threaten with repression	-7.0
Conduct hunger strike	-6.5
Conduct hunger strike for leadership change	-6.5
Conduct hunger strike for policy change	-6.5
Conduct strike or boycott	-6.5
Conduct strike or boycott for leadership change	-6.5
Conduct strike or boycott for policy change	-6.5
Demonstrate for change in institutions, regime	-6.5
Demonstrate for leadership change	-6.5
Demonstrate for policy change	-6.5
Demonstrate for rights	-6.5
Demonstrate or rally	-6.5
Engage in political dissent	-6.5
Halt negotiations	-6.5
Threaten non-force	-5.8
Threaten to ban political parties or politicians	-5.8
Threaten to halt mediation	-5.8
Threaten to halt negotiations	-5.8
Threaten to impose curfew	-5.8
Threaten to impose state of emergency or martial law	-5.8
Threaten to reduce or break relations	-5.8
Threaten to reduce or stop aid	-5.8
Threaten with administrative sanctions	-5.8
Threaten with political dissent, protest	-5.8
Threaten with restrictions on political freedoms	-5.8
Threaten with sanctions, boycott, embargo	-5.8
Reduce or stop economic assistance	-5.6
Reduce or stop humanitarian assistance	-5.6
Reduce or stop material aid	-5.6
Reduce or stop military assistance	-5.6
Arrest, detain, or charge with legal action	-5.0
Ban political parties or politicians	-5.0
Defy norms, law	-5.0
Demand	-5.0

Continued on next page

Table A.1 – *Continued from previous page*

Event Text	**Intensity**
Demand change in institutions, regime	-5.0
Demand change in leadership	-5.0
Demand de-escalation of military engagement	-5.0
Demand diplomatic cooperation (such as policy support)	-5.0
Demand easing of administrative sanctions	-5.0
Demand easing of economic sanctions, boycott, or embargo	-5.0
Demand easing of political dissent	-5.0
Demand economic aid	-5.0
Demand economic cooperation	-5.0
Demand humanitarian aid	-5.0
Demand intelligence cooperation	-5.0
Demand judicial cooperation	-5.0
Demand material aid	-5.0
Demand material cooperation	-5.0
Demand mediation	-5.0
Demand meeting, negotiation	-5.0
Demand military aid	-5.0
Demand military cooperation	-5.0
Demand military protection or peacekeeping	-5.0
Demand policy change	-5.0
Demand political reform	-5.0
Demand release of persons or property	-5.0
Demand rights	-5.0
Demand settling of dispute	-5.0
Demand that target allows international involvement (non-mediation)	-5.0
Demand that target yields	-5.0
Deny responsibility	-5.0
Expel or deport individuals	-5.0
Impose administrative sanctions	-5.0
Impose curfew	-5.0
Impose restrictions on political freedoms	-5.0
Impose state of emergency or martial law	-5.0
Reject mediation	-5.0
Reject plan, agreement to settle dispute	-5.0
Reject proposal to meet, discuss, or negotiate	-5.0
Veto	-5.0
Threaten	-4.4
Reduce or break diplomatic relations	-4.0
Reduce relations	-4.0
Refuse to allow international involvement (non mediation)	-4.0
Refuse to de-escalate military engagement	-4.0
Refuse to ease administrative sanctions	-4.0

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Table A.1 – *Continued from previous page*

Event Text	**Intensity**
Refuse to ease economic sanctions, boycott, or embargo	-4.0
Refuse to ease popular dissent	-4.0
Refuse to release persons or property	-4.0
Refuse to yield	-4.0
Reject	-4.0
Reject economic cooperation	-4.0
Reject judicial cooperation	-4.0
Reject material cooperation	-4.0
Reject military cooperation	-4.0
Reject request for change in institutions, regime	-4.0
Reject request for change in leadership	-4.0
Reject request for economic aid	-4.0
Reject request for humanitarian aid	-4.0
Reject request for military aid	-4.0
Reject request for military protection or peacekeeping	-4.0
Reject request for policy change	-4.0
Reject request for rights	-4.0
Reject request or demand for material aid	-4.0
Reject request or demand for political reform	-4.0
Accuse	-2.0
Accuse of aggression	-2.0
Accuse of crime, corruption	-2.0
Accuse of espionage, treason	-2.0
Accuse of human rights abuses	-2.0
Accuse of war crimes	-2.0
Bring lawsuit against	-2.0
Complain officially	-2.0
Criticize or denounce	-2.0
Investigate	-2.0
Investigate crime, corruption	-2.0
Investigate human rights abuses	-2.0
Investigate military action	-2.0
Investigate war crimes	-2.0
Rally opposition against	-2.0
find guilty or liable (legally)	-2.0
Make pessimistic comment	-0.4
Appeal for change in institutions, regime	-0.3
Appeal for change in leadership	-0.3
Appeal for de-escalation of military engagement	-0.3
Appeal for easing of administrative sanctions	-0.3
Appeal for easing of economic sanctions, boycott, or embargo	-0.3
Appeal for easing of political dissent	-0.3

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Table A.1 – *Continued from previous page*

Event Text	**Intensity**
Appeal for policy change	-0.3
Appeal for political reform	-0.3
Appeal for release of persons or property	-0.3
Appeal for rights	-0.3
Appeal for target to allow international involvement (non-mediation)	-0.3
Appeal to yield	-0.3
Decline comment	-0.1
Acknowledge or claim responsibility	0.0
Consider policy option	0.0
Engage in symbolic act	0.0
Make statement	0.0
Make optimistic comment	0.4
Consult	1.0
Discuss by telephone	1.0
Make a visit	1.9
Meet at a 'third' location	2.5
Host a visit	2.8
Make an appeal or request	3.0
Appeal for aid	3.4
Appeal for diplomatic cooperation (such as policy support)	3.4
Appeal for economic aid	3.4
Appeal for economic cooperation	3.4
Appeal for humanitarian aid	3.4
Appeal for intelligence	3.4
Appeal for judicial cooperation	3.4
Appeal for material cooperation	3.4
Appeal for military aid	3.4
Appeal for military cooperation	3.4
Appeal for military protection or peacekeeping	3.4
Express accord	3.4
Make empathetic comment	3.4
Praise or endorse	3.4
Defend verbally	3.5
Engage in diplomatic cooperation	3.5
Rally support on behalf of	3.8
Appeal to engage in or accept mediation	4.0
Appeal to others to meet or negotiate	4.0
Appeal to others to settle dispute	4.0
Express intent to cooperate	4.0
Express intent to meet or negotiate	4.0
Express intent to engage in diplomatic cooperation (such as policy support)	4.5
Accede to demands for change in institutions, regime	5.0

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Table A.1 – *Continued from previous page*

Event Text	**Intensity**
Accede to demands for change in leadership	5.0
Accede to demands for change in policy	5.0
Accede to demands for rights	5.0
Accede to requests or demands for political reform	5.0
Ease administrative sanctions	5.0
Ease ban on political parties or politicians	5.0
Ease curfew	5.0
Ease political dissent	5.0
Ease restrictions on political freedoms	5.0
Ease state of emergency or martial law	5.0
Express intent to mediate	5.0
Express intent to settle dispute	5.0
Mediate	5.0
Yield	5.0
Express intent to cooperate economically	5.2
Express intent to cooperate militarily	5.2
Express intent to cooperate on intelligence	5.2
Express intent to cooperate on judicial matters	5.2
Express intent to engage in material cooperation	5.2
Express intent to provide economic aid	5.2
Express intent to provide humanitarian aid	5.2
Express intent to provide material aid	5.2
Express intent to provide military aid	5.2
Engage in material cooperation	6.0
Express intent to provide military protection or peacekeeping	6.0
Grant diplomatic recognition	6.0
Cooperate economically	6.4
Apologize	7.0
Ease economic sanctions, boycott, embargo	7.0
Engage in negotiation	7.0
Express intent to accept mediation	7.0
Express intent to allow international involvement (non-mediation)	7.0
Express intent to change institutions, regime	7.0
Express intent to change leadership	7.0
Express intent to change policy	7.0
Express intent to de-escalate military engagement	7.0
Express intent to ease administrative sanctions	7.0
Express intent to ease economic sanctions, boycott, or embargo	7.0
Express intent to ease popular dissent	7.0
Express intent to institute political reform	7.0
Express intent to provide rights	7.0
Express intent to release persons or property	7.0

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Table A.1 – *Continued from previous page*

Event Text	**Intensity**
Express intent to yield	7.0
Forgive	7.0
Grant asylum	7.0
Provide aid	7.0
Return, release person(s)	7.0
Return, release property	7.0
Share intelligence or information	7.0
Cooperate militarily	7.4
Engage in judicial cooperation	7.4
Provide economic aid	7.4
Provide humanitarian aid	7.4

Note: This table lists the categories of events and their associated intensity, as categorized by the ICEWS dataset using the CAMEO classifications. For more details on the classifications, see the documentation in the ICEWS Harvard dataverse here.

Table A.2: Power and engagement - by engagement themes

	Disaggregated bilateral engagement$_{\{in\},t}$		
	Sanction-related	Economic, not sanction-related	Non-economic
	(1)	(2)	(3)
$Power_{\{in\},t-1}$	-0.0135	0.0494***	0.0496***
	(0.0105)	(0.00782)	(0.00838)
GDP difference$_{\{in\},t-1}$	-0.0349**	0.0127	0.00596
	(0.0160)	(0.00990)	(0.00956)
Total trade$_{\{in\},t-1}$	0.0106	-0.0444***	-0.0467***
	(0.0131)	(0.00871)	(0.00910)
N	33538	160288	308694
Year FE:	Yes	Yes	Yes
Pair FE:	Yes	Yes	Yes

Note: This table replicates Equation (12) but using event categories disaggregated for three alternative types of events. Power and GDP difference are measured as an absolute difference. Total trade is measured by taking the sum of export and import volume between two countries. Power, GDP difference, and total bilateral trade are all standardized on the directed pair level. The three outcome variables are reconstructed Z-scores of events, categorized manually into the following three groups: (1) Sanction-related, (2) Economic but not sanction-related, and (3) Non-economic. Standard errors are clustered at the undirected pair level. * $p < 0.1$, ** $p < .05$, *** $p < 0.01$.

Table A.3: Power and engagement - by engagement intensity intervals

Panel A - positive events								
	Disaggregated bilateral engagement$_{\{in\},t}$							
	[0,1)	[1,2)	[2,3)	[3,4)	[4,5)	[5,6)	[6,7)	[7,8)
$Power_{\{in\},t-1}$	0.0253***	0.0335***	0.0305***	0.0218***	0.0341***	0.0167***	0.00501***	0.0257***
	(0.00261)	(0.00273)	(0.00255)	(0.00259)	(0.00253)	(0.00184)	(0.00166)	(0.00221)
GDP difference$_{\{in\},t-1}$	0.00932***	0.00920***	0.00754**	0.0153***	0.00986***	0.00312	0.00343*	0.0111***
	(0.00311)	(0.00319)	(0.00297)	(0.00317)	(0.00284)	(0.00202)	(0.00190)	(0.00246)
Total trade$_{\{in\},t-1}$	-0.0276***	-0.0320***	-0.0311***	-0.0196***	-0.0395***	-0.0173***	-0.00816***	-0.0283***
	(0.00274)	(0.00288)	(0.00266)	(0.00275)	(0.00260)	(0.00188)	(0.00171)	(0.00227)
Panel B - negative events								
	Disaggregated bilateral engagement$_{\{in\},t}$							
	[-1,0)	[-2,-1)	[-3,-2)	[-4,-3)	[-5,-4)	[-6,-5)	[-7,-6)	[-8,-7)
$Power_{\{in\},t-1}$	0.00532***	0.00968***	-	0.0114***	0.00836***	0.00285***	0.00609***	0.00486***
	(0.00151)	(0.00209)	-	(0.00175)	(0.00208)	(0.00102)	(0.00133)	(0.00135)
GDP difference$_{\{in\},t-1}$	0.00154	0.00762***	-	0.00362*	0.00530**	0.000267	0.00513***	0.0000410
	(0.00171)	(0.00239)	-	(0.00194)	(0.00251)	(0.00111)	(0.00146)	(0.00150)
Total trade$_{\{in\},t-1}$	-0.00414***	-0.00676***	-	-0.0104***	-0.0110***	-0.000809	-0.00465***	-0.00331**
	(0.00156)	(0.00218)	-	(0.00179)	(0.00218)	(0.00102)	(0.00136)	(0.00136)
N	517298	517298	517298	517298	517298	517298	517298	517298
Year FE	Y	Y	Y	Y	Y	Y	Y	Y
Pair FE	Y	Y	Y	Y	Y	Y	Y	Y

Note: This table replicates Equation (12) but using event categories disaggregated for each event intensity interval. Power and GDP difference are measured as an absolute difference. Total trade is measured by taking the sum of export and import volume between two countries. Power, GDP difference, and total bilateral trade are all standardized on the directed pair level. Disaggregated bilateral engagement for each intensity interval is defined as the within-pair standardized count of events falling within that interval. Event intensity scores are derived from the ICEWS dataset, which assigns intensity levels based on event categories. Further details on the categorization and intensity scoring are provided in Appendix Table A.1. No events are recorded in the interval $[-3,-2)$, as no event category is assigned an intensity score within this range. Standard errors are clustered at the undirected pair level. * $p < 0.1$, ** $p < .05$, *** $p < 0.01$.

Table A.4: Power and engagement - IV strategy robustness, 1st stage

	Power$_{\{in\},t-1}$		
	(1)	(2)	(3)
Panel A: Baseline IV			
$IV_{\{in\},t-1}$	0.313***	0.314***	0.222***
	(0.00366)	(0.00367)	(0.00351)
GDP difference$_{\{in\},t-1}$		-0.0127***	-0.0260***
		(0.00488)	(0.00435)
Total trade$_{\{in\},t-1}$			0.611***
			(0.00371)
F-stat	7312.1	7322.3	3995.6
Panel B: Drop top sector IV			
Drop top sector $IV_{\{in\},t-1}$	0.287***	0.287***	0.191***
	(0.00365)	(0.00365)	(0.00353)
GDP difference$_{\{in\},t-1}$		-0.000872	-0.0161***
		(0.00498)	(0.00446)
Total trade$_{\{in\},t-1}$			0.614***
			(0.00373)
F-stat	6177.7	6170.6	2929.3
Panel C: Leave one out IV			
Leave one out $IV_{\{in\},t-1}$	0.310***	0.311***	0.220***
	(0.00366)	(0.00367)	(0.00351)
GDP difference$_{\{in\},t-1}$		-0.0123**	-0.0256***
		(0.00489)	(0.00435)
Total trade$_{\{in\},t-1}$			0.612***
			(0.00371)
F-stat	7164.0	7173.3	3912.7
N	485986	485986	485986
Year FE	Y	Y	Y
Pair FE	Y	Y	Y

Note: This table shows the results of the first-stage regression specified in Equations (14). Observations use the countries that had any trade from 1995 to 1999. Panel A: baseline IV. Panel B: excludes 5 sectors with high Rotemberg weights, such as *machinery, electrical equipment* (sector 16), to mitigate endogeneity risks highlighted by their correlation with trends in socioeconomic variables. Panel C: leave-one-out IV, following Autor, Dorn, and Hanson (2013); here, the IV is the exporter's global market share, excluding the specific importer in each case to prevent a direct correlation between the shifter and the importing country (e.g., if China is the exporter and the USA is the importer, we calculate China's global market share without the USA). The IV sample is restricted to country pairs with trade data from 1995 to 1999, as the instrument is constructed from importer sectoral exposure shares during this period. All variables are standardized within the directed pair. Standard errors are clustered at the undirected pair level. * $p < 0.1$, ** $p < .05$, *** $p < 0.01$.

Table A.5: Power and engagement - IV strategy robustness, 2nd stage

	Bilateral engagement$_{\{in\},t}$		
	(1)	(2)	(3)
Panel A: Baseline IV			
Power$_{\{in\},t-1}$	0.454***	0.439***	0.697***
	(0.0412)	(0.0412)	(0.0589)
GDP difference$_{\{in\},t-1}$		0.0709***	0.0858***
		(0.0191)	(0.0189)
Total trade$_{\{in\},t-1}$			-0.539***
			(0.0406)
Panel B: Drop top sector IV			
Power$_{\{in\},t-1}$	0.385***	0.371***	0.647***
	(0.0447)	(0.0446)	(0.0680)
GDP difference$_{\{in\},t-1}$		0.0733***	0.0860***
		(0.0191)	(0.0190)
Total trade$_{\{in\},t-1}$			-0.505***
			(0.0461)
Panel C: Leave one out IV			
Power$_{\{in\},t-1}$	0.456***	0.442***	0.703***
	(0.0416)	(0.0415)	(0.0596)
GDP difference$_{\{in\},t-1}$		0.0708***	0.0858***
		(0.0191)	(0.0189)
Total trade$_{\{in\},t-1}$			-0.542***
			(0.0411)
N	485986	485986	485986
Year FE	Y	Y	Y
Pair FE	Y	Y	Y

Note: This table shows the results of the second-stage regression specified in Equations (15). Observations use the countries that had any trade from 1995 to 1999. Bilateral engagement is the z-score of each unit interval of events in the ICEWS dataset within the range $[-7, 8)$, where each unit interval's values are the sum of both directions of country i and n's events with each other. Panel A: baseline IV. Panel B: excludes 5 sectors with high Rotemberg weights, such as *machinery, electrical equipment* (sector 16), to mitigate endogeneity risks highlighted by their correlation with trends in socioeconomic variables. Panel C: leave-one-out IV, following Autor, Dorn, and Hanson (2013); here, the IV is the exporter's global market share, excluding the specific importer in each case to prevent a direct correlation between the shifter and the importing country (e.g., if China is the exporter and the USA is the importer, we calculate China's global market share without the USA). The IV sample is restricted to country pairs with trade data from 1995 to 1999, as the instrument is constructed from importer sectoral exposure shares during this period. All variables are standardized within the directed pair. Standard errors are clustered at the undirected pair level. * $p < 0.1$, ** $p < .05$, *** $p < 0.01$.

Table A.6: Power and engagement - IV strategy Rotemberg weights

Sector	Rotemberg weight
16: Machinery, Electrical Equipment	0.381932
11: Textiles	0.138973
7: Plastics, Rubber	0.092202
20: Miscellaneous Manufactures	0.077139
6: Chemical Products	0.072072
15: Base Metals	0.057122
13: Stone, Glass, Ceramics	0.042025
17: Vehicles, Aircraft, Vessels	0.039849
18: Optical, Medical Instruments	0.032759
2: Vegetables	0.023022
4: Food, Beverages, Tobacco	0.022350
10: Pulp, Paper Products	0.008683
3: Fats, Oils, Waxes	0.008173
12: Footwear, Headgear, Accessories	0.006246
8: Leather, Furs, Saddlery	0.004578
1: Live Animals, Products	0.003826
19: Arms, Ammunition	0.002819
9: Wood, Cork, Wickerwork	0.002467
14: Precious Metals, Jewelry	0.001576
21: Art, Antiques	-0.000142
5: Minerals	-0.017672

Note: The table shows the Rotemberg weights of each sectors (HS-sections).

Table A.7: Power and engagement - IV strategy balance tests

	Sector16	Sector11	Sector7	Sector20	Sector6	Sector15	Sector13	Sector17
Panel A: domestic economy								
Agriculture, forestry, and fishing, value added (current US$)	0.0051	0.0098**	0.0043	-0.0052**	0.0026	0.0017	-0.0018	-0.0042
	(0.0053)	(0.0044)	(0.0035)	(0.0025)	(0.0026)	(0.0025)	(0.0013)	(0.0094)
Industry (including construction), value added (current US$)	-0.0025	0.0141**	-0.0004	-0.0059**	0.0069**	-0.0029	-0.0009	0.0079
	(0.0061)	(0.0057)	(0.0036)	(0.0029)	(0.0034)	(0.0023)	(0.0015)	(0.0064)
Internet users 100**	-0.0503***	0.0249*	-0.0133	-0.0197***	-0.0109	-0.0122***	-0.0064**	0.0654
	(0.0156)	(0.0144)	(0.0082)	(0.0057)	(0.0099)	(0.0044)	(0.0027)	(0.0465)
Labor force with advanced education (% of total working-age population with adva	-0.0077	0.0081	-0.0056***	0.0000	-0.0041*	-0.0002	0.0012	0.0007
	(0.0054)	(0.0061)	(0.0019)	(0.0022)	(0.0022)	(0.0014)	(0.0012)	(0.0049)
Labor force, total	0.0120***	0.0042	0.0019	-0.0012	0.0010	0.0029**	-0.0020	0.0076***
	(0.0035)	(0.0037)	(0.0018)	(0.0013)	(0.0016)	(0.0013)	(0.0012)	(0.0024)
Machinery and transport equipment (% of value added in manufacturing)	-0.0078	0.0054	0.0020	0.0033**	-0.0010	0.0004	0.0002	-0.0015
	(0.0058)	(0.0042)	(0.0019)	(0.0014)	(0.0023)	(0.0015)	(0.0010)	(0.0031)
Manufacturing, value added (current US$)	0.0034	0.0036	0.0034	-0.0081***	0.0117***	0.0040**	-0.0030*	-0.0041
	(0.0058)	(0.0077)	(0.0032)	(0.0021)	(0.0023)	(0.0016)	(0.0017)	(0.0041)
Scientific and technical journal articles	0.0000	0.0195***	0.0079**	-0.0076**	0.0129**	0.0006	0.0001	-0.0214
	(0.0084)	(0.0057)	(0.0039)	(0.0033)	(0.0051)	(0.0028)	(0.0016)	(0.0218)
Services, value added (current US$)	0.0070	0.0069	-0.0039	0.0010	-0.0043	-0.0054	0.0016	0.0092
	(0.0102)	(0.0103)	(0.0049)	(0.0048)	(0.0049)	(0.0034)	(0.0025)	(0.0122)
Stocks traded, total value (current US$)	0.0276***	0.0058	-0.0013	-0.0081***	0.0033	-0.0020	-0.0058***	-0.0102***
	(0.0090)	(0.0077)	(0.0032)	(0.0022)	(0.0036)	(0.0026)	(0.0010)	(0.0034)
Taxes on goods and services (% value added of industry and services)	-0.0139***	0.0057	-0.0018	-0.0026*	0.0022	-0.0011	0.0003	0.0006
	(0.0047)	(0.0044)	(0.0014)	(0.0013)	(0.0019)	(0.0012)	(0.0008)	(0.0026)
Technicians in R&D (per million people)	0.0163**	-0.0076	0.0043**	0.0015	0.0022	-0.0015	-0.0000	0.0011
	(0.0081)	(0.0064)	(0.0020)	(0.0021)	(0.0026)	(0.0020)	(0.0012)	(0.0021)
Unemployment with advanced education (% of total labor force with advanced educa	0.0064	-0.0014	0.0014	-0.0029	0.0007	0.0012	-0.0011	-0.0003
	(0.0076)	(0.0053)	(0.0019)	(0.0028)	(0.0023)	(0.0014)	(0.0012)	(0.0029)
Unemployment, total (% of total labor force) (national estimate)	0.0003	-0.0035	0.0028	-0.0031*	0.0019	0.0024*	-0.0007	-0.0019
	(0.0051)	(0.0046)	(0.0017)	(0.0018)	(0.0021)	(0.0013)	(0.0009)	(0.0043)
Z-score domestic	0.0069	0.0006	0.0010	-0.0031**	0.0015	-0.0005	-0.0018**	-0.0080*
	(0.0049)	(0.0040)	(0.0018)	(0.0016)	(0.0024)	(0.0016)	(0.0008)	(0.0048)
Panel B: international economy								
Air transport, passengers carried	0.0137***	0.0025	0.0018	-0.0014	0.0018	0.0023*	-0.0016*	-0.0043
	(0.0044)	(0.0039)	(0.0019)	(0.0014)	(0.0026)	(0.0013)	(0.0009)	(0.0046)
Foreign direct investment, net (BoP, current US$)	0.0071	-0.0149***	-0.0002	0.0036**	0.0005	0.0039**	0.0002	0.0026
	(0.0056)	(0.0047)	(0.0021)	(0.0018)	(0.0024)	(0.0016)	(0.0009)	(0.0039)
Foreign direct investment, net inflows (BoP, current US$)	-0.0027	0.0174***	-0.0014	-0.0048**	0.0001	-0.0017	-0.0009	-0.0082*
	(0.0066)	(0.0049)	(0.0031)	(0.0019)	(0.0029)	(0.0020)	(0.0011)	(0.0046)
Foreign direct investment, net outflows (BoP, current US$)	0.0117	0.0081	0.0038	-0.0038*	0.0006	0.0024	-0.0006	-0.0158**
	(0.0075)	(0.0057)	(0.0034)	(0.0021)	(0.0031)	(0.0019)	(0.0010)	(0.0072)
Net official development assistance and official aid received (current US$)	-0.0152***	0.0080	-0.0017	-0.0027	0.0008	-0.0026	-0.0016	0.0031
	(0.0057)	(0.0054)	(0.0022)	(0.0017)	(0.0028)	(0.0017)	(0.0010)	(0.0026)
Taxes on international trade (% of revenue)	0.0184***	-0.0073	0.0013	0.0006	-0.0055**	0.0000	-0.0005	-0.0007
	(0.0062)	(0.0068)	(0.0019)	(0.0018)	(0.0023)	(0.0015)	(0.0012)	(0.0027)
Technical cooperation grants (BoP, current US$)	-0.0097**	0.0004	-0.0026	-0.0030**	-0.0010	0.0011	-0.0017**	0.0054
	(0.0045)	(0.0058)	(0.0018)	(0.0013)	(0.0025)	(0.0016)	(0.0007)	(0.0063)
Trade (% of GDP)	-0.0028	-0.0045	0.0024	0.0017	-0.0006	0.0004	0.0000	-0.0027
	(0.0050)	(0.0059)	(0.0015)	(0.0013)	(0.0023)	(0.0015)	(0.0007)	(0.0027)
Z-score international	0.0026	-0.0004	0.0000	-0.0037**	-0.0016	0.0015	-0.0014*	-0.0031
	(0.0043)	(0.0046)	(0.0016)	(0.0017)	(0.0022)	(0.0014)	(0.0008)	(0.0039)
Panel C: military								
Armed forces personnel, total	-0.0019	0.0106***	-0.0010	-0.0022	0.0027	-0.0023**	-0.0002	-0.0028
	(0.0045)	(0.0038)	(0.0016)	(0.0016)	(0.0020)	(0.0011)	(0.0008)	(0.0044)
Arms exports (SIPRI trend indicator values)	0.0082	-0.0031	-0.0008	-0.0037	0.0036	0.0016	-0.0005	0.0032
	(0.0080)	(0.0076)	(0.0035)	(0.0028)	(0.0036)	(0.0023)	(0.0010)	(0.0027)
Arms imports (SIPRI trend indicator values)	0.0061	-0.0069	-0.0026	-0.0002	-0.0042	0.0018	0.0016	0.0043
	(0.0067)	(0.0050)	(0.0028)	(0.0020)	(0.0026)	(0.0020)	(0.0011)	(0.0026)
Military expenditure (current USD)	-0.0014	0.0119*	0.0006	-0.0007	-0.0006	-0.0005	-0.0004	-0.0062
	(0.0083)	(0.0066)	(0.0024)	(0.0027)	(0.0029)	(0.0023)	(0.0017)	(0.0063)
Z-score military	0.0231***	-0.0052	0.0016	0.0019	-0.0034	0.0023	0.0018	-0.0056
	(0.0062)	(0.0055)	(0.0027)	(0.0023)	(0.0033)	(0.0018)	(0.0012)	(0.0073)
Panel D: political								
Anti-government demonstrations	0.0150**	0.0113*	0.0091***	-0.0023	0.0086**	-0.0037	-0.0013	-0.0139*
	(0.0074)	(0.0063)	(0.0029)	(0.0040)	(0.0038)	(0.0023)	(0.0018)	(0.0081)
Assassinations	0.0014	-0.0071	0.0004	0.0044	-0.0104	-0.0012	0.0002	0.0033
	(0.0121)	(0.0104)	(0.0040)	(0.0034)	(0.0063)	(0.0043)	(0.0019)	(0.0047)
General strikes	0.0194***	-0.0111	-0.0007	-0.0036	0.0117***	0.0020	-0.0024*	-0.0045
	(0.0069)	(0.0097)	(0.0049)	(0.0031)	(0.0043)	(0.0027)	(0.0014)	(0.0085)
Government crises	0.0111	-0.0016	-0.0021	0.0080**	-0.0050	0.0038	0.0017	-0.0179
	(0.0124)	(0.0083)	(0.0052)	(0.0033)	(0.0053)	(0.0033)	(0.0016)	(0.0175)
Purges	0.0112	-0.0173	-0.0078	-0.0011	0.0050	0.0064	-0.0016	-0.0022
	(0.0114)	(0.0106)	(0.0094)	(0.0028)	(0.0079)	(0.0041)	(0.0022)	(0.0030)
Revolutions	-0.0071	0.0106	-0.0033	0.0036	-0.0000	0.0006	0.0018	-0.0030
	(0.0098)	(0.0088)	(0.0052)	(0.0025)	(0.0047)	(0.0029)	(0.0015)	(0.0060)
Riots	-0.0133	0.0028	0.0085**	-0.0049**	0.0193***	-0.0040	-0.0020	-0.0061
	(0.0089)	(0.0095)	(0.0034)	(0.0022)	(0.0040)	(0.0031)	(0.0013)	(0.0054)
Terrorism/guerrilla warfare	0.0036	-0.0097	0.0031	-0.0066**	0.0164***	0.0012	-0.0022*	-0.0143
	(0.0102)	(0.0074)	(0.0045)	(0.0028)	(0.0041)	(0.0031)	(0.0012)	(0.0126)
Z-score political	0.0027	0.0013	0.0079***	-0.0006	0.0111***	-0.0015	0.0001	-0.0129
	(0.0074)	(0.0056)	(0.0024)	(0.0020)	(0.0034)	(0.0021)	(0.0010)	(0.0082)

Note: This table demonstrates the balance test of the potential correlates of the importer's industry share in pre-period ($w_{nk\tau}$). The variables in the left columns come from the World Bank's World Development Indicators (WDI) and Databank International's Cross-National Time-Series Data (CNTS). For each socioeconomic variable defined at importer n, this table shows $w_{nk\tau} = \beta_0 + \beta_1 \Delta X + \epsilon_{nk}$ for each sector k where ΔX is defined as the difference between the mean of 1995 to 1999 and the mean of 2017 to 2021 of the within-country standardized value of X. In this table, we display the top 8 sectors by Rotemberg weight since they contribute most to the identification of the IV regression in Table 2. Standard errors are heteroscedasticity robust. * $p < 0.1$, ** $p < .05$, *** $p < 0.01$.

Table A.8: Power and engagement - instrument homogeneity

Method	**Estimated coefficient**
Baseline Bartik	431.8
Overidentified TSLS	480.1
MBTSLS	480.6
LIML	485.5
HFUL	492.4

Note: This table reports the estimated coefficients using four different estimation methods to assess whether the components of the shift-share instrument, constructed from 21 HS-section level sectors, exhibit homogeneous effects. The methods include: *(i)* over-identified two-stage least squares (TSLS), which incorporates all 21 instruments in a two-stage estimation; *(ii)* modified bias-corrected two-stage least squares (MBTSLS); *(iii)* limited information maximum likelihood (LIML); and *(iv)* heteroskedasticity-robust Fuller (HFUL) estimators. The baseline specification is also included for comparison.

Table A.9: Power and engagement - robustness

	Bilateral engagement$_{\{in\},t}$	
	Changes within country pairs	IV: Sector-specific trade exposure
	(1)	(2)
Panel A: Baseline		
Power$_{\{in\},t-1}$	0.236***	0.697***
	(0.016)	(0.059)
Panel B.1: Alternative sample, excluding USA, Russia, and China		
Power$_{\{in\},t-1}$	0.219***	0.683***
	(0.016)	(0.060)
Panel B.2: Alternative sample, including 1995-2000		
Power$_{\{in\},t-1}$	0.049***	0.217***
	(0.014)	(0.042)
Panel B.3: Alternative sample, fixing pair order		
Power$_{\{in\},t-1}$	0.268***	0.628***
	(0.022)	(0.074)
Panel C.1: Coercer-year and target-year fixed effects		
Power$_{\{in\},t-1}$	0.098***	0.298***
	(0.015)	(0.070)
Panel C.2: Coercer, target, and year fixed effects		
Power$_{\{in\},t-1}$	0.236***	0.698***
	(0.016)	(0.059)
Panel C.3: Two way clustering on year and pair		
Power$_{\{in\},t-1}$	0.236***	0.697***
	(0.036)	(0.104)
Panel C.4: AKM inference (non-standardized, directed sample)		
Power$_{\{in\},t-1}$		431.827***
		(12.543)
Panel D.1: Alternative standardization of bilateral engagement		
Power$_{\{in\},t-1}$	0.035***	0.118***
	(0.003)	(0.012)
Panel D.2: Alternative definition of bilateral engagement: all events		

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$\text{Power}_{\{in\},t-1}$	0.269***	0.769***
	(0.019)	(0.068)
Panel D.3: De-duplication of bilateral engagement		
$\text{Power}_{\{in\},t-1}$	0.238***	0.704***
	(0.016)	(0.059)
Panel E.1: Power using actually traded sector between countries		
$\text{Power}_{\{in\},t-1}$	0.180***	0.972***
	(0.014)	(0.105)
Panel E.2: Alternative definition of power: max sector power		
$\text{Power}_{\{in\},t-1}$	0.205***	
	(0.016)	
Panel E.3: Alternative definition of power: equal weight power		
$\text{Power}_{\{in\},t-1}$	0.248***	0.710***
	(0.017)	(0.064)
Panel E.4: Alternative definition of power: equal weight max sector power		
$\text{Power}_{\{in\},t-1}$	0.217***	
	(0.016)	
Panel E.5: Alternative definition of power: HS 2-digit		
$\text{Power}_{\{in\},t-1}$	0.226***	0.831***
	(0.016)	(0.075)
Panel E.6: Alternative definition of power: in trade levels		
$\text{Power}_{\{in\},t-1}$	0.064***	0.236***
	(0.012)	(0.048)
Panel F.1: All regressors not standardized		
$\text{Power}_{\{in\},t-1}$	105.317***	530.991***
	(17.849)	(64.540)
Panel F.2: All regressors not standardized, directed sample		
$\text{Power}_{\{in\},t-1}$	121.798***	431.827***
	(20.276)	(64.744)

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GDP difference control	Y	Y
Total trade control	Y	Y

Note: This table shows robustness checks for the results demonstrated in columns 3 and 6 of Table 2, which control for GDP difference and total trade while also incorporating pair and year fixed effects. Bilateral engagement is the z-score of each unit interval of events in the ICEWS dataset, where each unit interval's values are the sum of both directions of country i and n's events with each other. Power and GDP difference are measured as an absolute difference. Total trade is measured by taking the sum of export and import volume between two countries. Power, GDP difference, and total trade are all standardized on the directed pair level. Panel A repeats the result shown in Table 2. Panel B.1 excludes USA, Russia, and China; Panel B.2 includes USA, Russia, and China but also includes years 1995-2000. Panel B.3 uses only the pairs for which an ordering would be feasible, i.e. pairs for which one country is always more powerful and use the IV that follows such direction without taking absolute value. Panel C.1 uses coercer-year and target-year fixed effects. Panel C.2 uses coercer, target, and year fixed effects. Panel C.3 is the same as the baseline but changes clustering in year and pair separately. Panel C.4 reports shift–share–robust (AKM) inference, which adjusts standard errors for spatial and temporal dependence induced by common sectoral shifters in the shift–share instrument. It also uses non-standardized and directed sample as in Panel F.2 Panel D.1 uses the standard deviation of the sum of all pairwise events as the outcome variable, and Panel D.2 uses the z-score of each unit interval of events, but extends the set of events from those of intensity $[-7, 8)$ to all events (i.e. $[-10, 10]$). Panel D.3 again uses the z-score of each unit interval events in intensity range intensity $[-7, 8)$, but those z-scores are constructed from an event-level dataset which de-duplicates observations tagged as being related to the same story. Given that multiple observations about the same story can have multiple classifications and therefore intensities, we deduplicate and replace the intensity with the mean intensity of all observations within a single story. Panel E.1 through E.5 use alternative definitions of power. Panel E.1 computes power by computing sector level import dependence only among sectors that are traded between the pair rather than all sectors. Panel E.2 uses power stemming only from the sector with highest elasticity-weighted import share between the pair. Panel E.3 uses power measured without weighting by sector level trade elasticities. Panel E.4 uses power computed at HS 2-digit level, with import dependence computed and sector elasticity weighted at the 2-digit level. Panel E.5 computes power using elasticity-weighted trade volume in dollar term rather than in share. We compute this power by taking $\log(1 + \bar{s}_{nit}) - \log(1 + \bar{s}_{int})$. Panel F.1 replicates the regression without standardizing any variable within pair. Panel F.2 also variables without standardization and keeps the sample where we fix pair order as in Panel B.3. Standard errors are clustered at the undirected pair level. * $p < 0.1$, ** $p < .05$, *** $p < 0.01$.

Table A.10: Power and engagement - within the European Union

	Bilateral engagement among EU members$_{\{in\},t}$					
	Changes within country pairs			IV: sector-specific trade exposure		
	(1)	(2)	(3)	(4)	(5)	(6)
Power$_{\{in\},t-1}$	-0.161	-0.168	-0.0456	-0.222	-0.259	-0.222
	(0.173)	(0.173)	(0.179)	(0.445)	(0.438)	(0.458)
GDP difference$_{\{in\},t-1}$		-0.188	-0.102		-0.198	-0.132
		(0.248)	(0.250)		(0.240)	(0.242)
Total trade$_{\{in\},t-1}$			-0.672**			-0.582
			(0.304)			(0.396)
N	4200	4200	4200	4200	4200	4200
Year FE:	Yes	Yes	Yes	Yes	Yes	Yes
Pair FE:	Yes	Yes	Yes	Yes	Yes	Yes

Note: This table replicates the baseline regression in table 2 but only includes observations where both countries in the pair are EU member states pre-2000 (Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, Netherlands, Portugal, Spain, Sweden, and United Kingdom). Bilateral engagement, domestic events, power, GDP difference, and total bilateral trade are all standardized at the directed pair level. Standard errors are clustered at the undirected pair level. * $p < 0.1$, ** $p < .05$, *** $p < 0.01$.

Table A.11: Power and engagement: violent and sanctioned pairs

	Bilateral engagement$_{\{in\},t}$					
	Changes within country pairs			IV: sector-specific trade exposure		
	(1)	(2)	(3)	(4)	(5)	(6)
Panel A.1: Pairs with ≥ 1 violent events						
Power$_{\{in\},t-1}$	0.185***	0.183***	0.303***	0.516***	0.498***	0.652***
	(0.0277)	(0.0277)	(0.0331)	(0.0890)	(0.0891)	(0.107)
GDP difference$_{\{in\},t-1}$		0.0956**	0.112***		0.0684*	0.0968**
		(0.0409)	(0.0408)		(0.0415)	(0.0412)
Total trade$_{\{in\},t-1}$			-0.291***			-0.482***
			(0.0369)			(0.0683)
N	173,468	173,468	173,468	168,024	168,024	168,024
Panel A.2: Pairs with no violent events						
Power$_{\{in\},t-1}$	0.0408***	0.0404***	0.104***	0.288***	0.282***	0.524***
	(0.00981)	(0.00980)	(0.0145)	(0.0378)	(0.0378)	(0.0650)
GDP difference$_{\{in\},t-1}$		0.0402**	0.0417***		0.0359**	0.0414**
		(0.0160)	(0.0159)		(0.0168)	(0.0168)
Total trade$_{\{in\},t-1}$			-0.104***			-0.399***
			(0.0147)			(0.0472)
N	343,830	343,830	343,830	318,002	318,002	318,002
Panel B.1: Pairs with ≥ 1 sanctions						
Power$_{\{in\},t-1}$	0.382***	0.390***	0.564***	0.842***	0.909***	1.070***
	(0.105)	(0.105)	(0.113)	(0.272)	(0.276)	(0.301)
GDP difference$_{\{in\},t-1}$		-0.187	-0.157		-0.268*	-0.220
		(0.144)	(0.143)		(0.148)	(0.146)
Total trade$_{\{in\},t-1}$			-0.541***			-0.768***
			(0.125)			(0.181)
N	25,976	25,976	25,976	25,240	25,240	25,240
Panel B.2: Pairs with no sanctions						
Power$_{\{in\},t-1}$	0.0821***	0.0809***	0.189***	0.393***	0.376***	0.618***
	(0.0108)	(0.0108)	(0.0154)	(0.0396)	(0.0394)	(0.0586)
GDP difference$_{\{in\},t-1}$		0.0945***	0.0995***		0.0843***	0.0972***
		(0.0176)	(0.0176)		(0.0183)	(0.0182)
Total trade$_{\{in\},t-1}$			-0.195***			-0.477***
			(0.0159)			(0.0408)
N	491,322	491,322	491,322	460,786	460,786	460,786
	Yes	Yes	Yes	Yes	Yes	Yes
Pair FE:	Yes	Yes	Yes	Yes	Yes	Yes

Note: This table repeats the baseline regressions in Table 2, splitting the sample by (i) whether the pair experienced at least one violent engagement during the sample period (Panels A.1–A.2), and (ii) whether the pair imposed at least one trade sanction (Panels B.1–B.2). All specifications include pair and year fixed effects. Standard errors are clustered at the undirected pair level. * $p < 0.1$, ** $p < .05$, *** $p < 0.01$.

Table A.12: Power and engagement - sector-specific estimates and trade elasticities

	Power-engagement coefficient		
	(1)	(2)	(3)
Elasticity (Broda et al.)	-0.00218***		
	(0.000481)		
Elasticity (Fontagne et al.)		-0.00178	
		(0.00114)	
Elasticity (Caliendo et al.)			-0.00128***
			(0.000251)
Observations	18	18	18

Note: This table presents the relationship between the sector-level coefficient of power and engagement and the elasticity of substitution. We use product and sector level elasticity of substitution from Broda and Weinstein (2006), Fontagné, Guimbard, and Orefice (2019), and Caliendo and Parro (2015). The product level elasticity from Broda and Weinstein (2006) and Fontagné, Guimbard, and Orefice (2019) are aggregated into sector level defined by Caliendo and Parro (2015) by taking a global trade volume weighted average. Standard errors are heteroskedasticity-robust. * $p < 0.1$, ** $p < .05$, *** $p < 0.01$.

Table A.13: Power and engagement - sector-specific estimate, product complexity and critical goods

	Relationship between sector-specific power and engagement		
	HS 4-digit	HS-section	CP-sector
	(1)	(2)	(3)
Panel A: product complexity (PCI)			
PCI	0.008***	0.049***	0.017***
	(0.001)	(0.017)	(0.005)
Panel B: presence of critical goods			
Critical	0.010***	0.172	0.028
	(0.002)	(0.122)	(0.051)
N	1241	21	18

Note: This table demonstrates the relationship between sector-level coefficients of power and engagement, the Product Complexity Index (PCI), and the presence of critical goods within sectors. The PCI is taken from Hidalgo and Hausmann (2009) and is measured at the HS 4-digit level. It is computed as a weighted average of 2015 trade volume across HS sections and CP-sector levels. Critical goods are identified using the ITA's draft list of critical supply chains. At the HS 4-digit level, we define a sector as critical (binary indicator) if it contains at least one good listed as critical. At the HS-section and CP-sector levels, we define a critical ratio as the share of 2015 trade volume in a given sector that is classified as critical. Panel A reports the relationship between sector-level coefficients of power and engagement and PCI. Panel B reports the relationship between sector-level coefficients of power and engagement and the presence of critical goods. Standard errors are heteroskedasticity-robust. * $p < 0.1$, ** $p < .05$, *** $p < 0.01$.

Table A.14: Power and engagement - importer vs. exporter power

	Bilateral engagement$_{\{in\},t}$					
	Changes within country pairs			IV: sector-specific trade exposure		
	(1)	(2)	(3)	(4)	(5)	(6)
Exporter power$_{\{in\},t-1}$	0.0991***	0.0984***	0.234***	0.402***	0.402***	0.621***
	(0.0123)	(0.0123)	(0.0162)	(0.0512)	(0.0512)	(0.0594)
Importer power$_{\{in\},t-1}$	0.0255**	0.0236**	0.134***	0.106*	0.0773	0.263***
	(0.0119)	(0.0119)	(0.0146)	(0.0621)	(0.0620)	(0.0700)
GDP difference$_{\{in\},t-1}$		0.0849***	0.0878***		0.0678***	0.0782***
		(0.0183)	(0.0182)		(0.0190)	(0.0189)
Total trade$_{\{in\},t-1}$			-0.320***			-0.642***
			(0.0202)			(0.0517)
N	517298	517298	517298	486026	486026	486026
Year FE:	Yes	Yes	Yes	Yes	Yes	Yes
Pair FE:	Yes	Yes	Yes	Yes	Yes	Yes

Note: This table shows the same regression as in Equation (12) and the results in Table 2 but also includes importer power specified in Equation (16). Bilateral engagement is the z-score of each unit interval of events in the ICEWS dataset within the range $[-7, 8)$, where each unit interval's values are the sum of both directions of country i and n's events with each other. Power and GDP difference are measured as an absolute difference. Total trade is measured by taking the sum of export and import volume between two countries. Power, GDP difference, and total bilateral trade are all standardized on the directed pair level. Standard errors are clustered at the undirected pair level. * $p < 0.1$, ** $p < .05$, *** $p < 0.01$.

Table A.15: Power and engagement - international influence in other domains

	Bilateral engagement$_{\{in\},t}$								
	Military expenditure			Foreign aid dependence			Sovereign debt exposure		
	Control for intl. influence	Below median	Above median	Control for intl. influence	No aid	With aid	Control for intl. influence	No debt	With debt
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Power$_{\{in\},t-1}$	0.244***	0.160***	0.253***	0.237***	0.221***	0.227***	0.227***	0.190***	0.285***
	(0.0186)	(0.0240)	(0.0277)	(0.0163)	(0.0200)	(0.0279)	(0.0163)	(0.0166)	(0.0477)
GDP difference$_{\{in\},t-1}$	0.0573**	0.0393	0.204***	0.0904***	0.0619***	0.0382	0.0879***	0.0699***	0.108
	(0.0235)	(0.0248)	(0.0409)	(0.0183)	(0.0206)	(0.0376)	(0.0183)	(0.0182)	(0.0680)
Total trade$_{\{in\},t-1}$	-0.256***	-0.182***	-0.230***	-0.242***	-0.240***	-0.195***	-0.235***	-0.203***	-0.177***
	(0.0191)	(0.0244)	(0.0292)	(0.0167)	(0.0202)	(0.0295)	(0.0167)	(0.0169)	(0.0523)
Intl. influence in other domains$_{\{in\},t-1}$	0.0483**			0.0370*			0.240***		
	(0.0199)			(0.0212)			(0.0447)		
N	390744	186344	186020	517298	341584	175714	517298	438308	78990
Year FE:	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Pair FE:	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Note: This table examines the relationship between power and bilateral engagement while accounting for international influence through military expenditure, foreign aid, and sovereign debt. Each column estimates Equation (12), either by including controls for international influence in other domains or by splitting the sample based on the level of such influence. Military expenditure comes from Stockholm International Peace Research Institute (SIPRI). We use all actual and imputed military spending data from SIPRI and treat missing values as true missing without replacing them with zeros. Foreign aid comes from official development assistance (ODA) provided by OECD and is measured as the difference in aid given or received bilaterally, and missing values are filled with zeros as we expect many countries do not give or take aid outside of existing data. Sovereign debt exposure uses all bilateral debt disbursements from International Debt Statistics (IDS), measured as the difference in bilateral debt. All missing values from the database are filled with zeros. Columns 1, 4, and 7 include controls for military expenditure, foreign aid, and sovereign debt, respectively, using the pair-level standardized absolute values of each measure. For pairs with zero values throughout the sample period, standardization yields missing values. These are replaced with zeros to retain observations. Columns 2 and 3 restrict the sample to country pairs above and below the median absolute difference in military expenditure. Columns 5 and 6 split the sample based on whether any foreign aid is present between the country pair. Columns 8 and 9 split the sample based on whether any sovereign debt exposure exists between the countries. Bilateral engagement is the z-score of each unit interval of events in the ICEWS dataset within the range $[-7, 8)$, where each unit interval's values are the sum of both directions of country i and n's events with each other. Power and GDP difference are measured as an absolute difference. Total trade is measured by taking the sum of export and import volume between two countries. Power, GDP difference, and total bilateral trade are all standardized on the directed pair level. Standard errors are clustered at the undirected pair level. * $p < 0.1$, ** $p < .05$, *** $p < 0.01$.

Table A.16: Geopolitical alignment and UNGA vote similarity

	Alignment$_{\{in\},t}$			
	(1)	(2)	(3)	(4)
UN vote similarity$_{\{in\},t}$	0.0643***	0.0127***	0.0648***	0.0171***
	(0.00186)	(0.00182)	(0.00185)	(0.00175)
N	210080	210080	210080	210080
Year FE	N	N	Y	Y
Pair FE	N	Y	N	Y

Note: This table shows the result of the regression of our measure of geopolitical alignment (as described in Appendix E) on a measure of UN vote similarity (taken from Bailey, Strezhnev, and Voeten 2017). Neither variable is standardized, both are undirected, and the time period is 2006-2021. Standard errors are clustered at the pair level. * $p < 0.1$, ** $p < .05$, *** $p < 0.01$.

Table A.17: List of elections used in the analyses

Country	Year	Turnover	Election type	Vote margin of incumbent
Argentina	2015	1	Presidential	2.7
Australia	2016	0	Parliamentary	-4.7
Austria	2013	0	Parliamentary	-2.7
Belgium	2014	1	Parliamentary	-1.3
Bulgaria	2013	1	Parliamentary	-5.4
Brazil	2014	0	Presidential	-3.3
Denmark	2015	1	Parliamentary	-5.6
Dominican Republic	2012	0	Presidential	-4.3
Ecuador	2017	0	Presidential	-2.3
Estonia	2015	0	Parliamentary	-3.0
France	2012	1	Presidential	3.3
Gabon	2016	0	Presidential	-1.6
Ghana	2012	0	Presidential	-3.0
Honduras	2017	0	Presidential	-1.5
Ireland	2016	0	Parliamentary	-3.2
Israel	2015	0	Parliamentary	-5.0
Republic of Korea	2012	0	Presidential	-3.5
Sri Lanka	2015	1	Presidential	3.7
Lithuania	2012	1	Parliamentary	3.5
Luxembourg	2013	1	Parliamentary	-16.7
Latvia	2014	0	Parliamentary	1.0
Moldova	2014	0	Parliamentary	2.0
Netherlands	2012	0	Parliamentary	-2.0
Norway	2017	0	Parliamentary	2.4
New Zealand	2017	1	Parliamentary	-8.3
Poland	2015	1	Presidential	3.1
Portugal	2015	1	Parliamentary	-9.1
Paraguay	2018	0	Presidential	-3.9
Sierra Leone	2018	1	Presidential	3.6
El Salvador	2014	0	Presidential	-0.2
Sweden	2014	1	Parliamentary	-8.0
Sweden	2018	0	Parliamentary	-0.3
Venezuela	2013	0	Presidential	-1.5

Table A.18: Alignment and power - balance tests of pair-level differences and election outcomes

	Election outcome
Panel A: domestic economy	
Stocks traded, total value (current USD)	0.146
	(0.063)
Internet hosts	-0.001
	(0.013)
Internet users 100	0.053
	(0.067)
Taxes on goods and services (% value added of industry and services)	-0.037
	(0.060)
Human capital index (HCI) (scale 0-1)	-0.140
	(0.084)
Scientific and technical journal articles	-0.051
	(0.059)
Agriculture, forestry, and fishing, value added (current USD)	0.033
	(0.052)
Manufacturing, value added (current USD)	0.003
	(0.068)
Industry (including construction), value added (current USD)	0.015
	(0.056)
Machinery and transport equipment (% of value added in manufacturing)	-0.001
	(0.072)
Services, value added (current USD)	0.038
	(0.066)
Labor force with advanced education (% of total working-age population with advanced education)	-0.034
	(0.059)
Labor force, total	0.045
	(0.055)
Unemployment with advanced education (% of total labor force with advanced education)	0.018
	(0.056)
Unemployment, total (% of total labor force) (national estimate)	0.042
	(0.070)
Technicians in R&D (per million people)	-0.033
	(0.128)
Domestic z-score	0.007
	(0.013)
Panel B: international economy	
Foreign direct investment, net outflows (BoP, current USD)	-0.114
	(0.059)
Foreign direct investment, net (BoP, current USD)	-0.108
	(0.075)
Technical cooperation grants (BoP, current USD)	0.067
	(0.064)
Foreign direct investment, net inflows (BoP, current USD)	-0.028
	(0.072)
Net official flows from UN agencies, UNAIDS (current USD)	0.059
	(0.065)
Net official development assistance and official aid received (current USD)	-0.007
	(0.088)
Taxes on international trade (% of revenue)	-0.132
	(0.050)
Air transport, passengers carried	-0.075
	(0.058)
Trade (% of GDP)	-0.118
	(0.055)
High-technology exports (current USD)	0.067
	(0.085)
International z-score	-0.050
	(0.020)
Panel C: military	
Arms imports (SIPRI trend indicator values)	0.031
	(0.062)
Armed forces personnel, total	0.050
	(0.075)
Military expenditure (current USD)	0.091
	(0.058)
Arms exports (SIPRI trend indicator values)	0.145
	(0.062)
Military z-score	0.074
	(0.032)
Panel D: political	
Assassinations	-0.037
	(0.026)
General strikes	0.020
	(0.080)
Terrorism/guerrilla warfare	-0.066
	(0.048)
Government crises	-0.080
	(0.084)
Purges	-0.030
	(0.049)
Riots	-0.132
	(0.053)
Revolutions	-0.010
	(0.030)
Anti-government demonstrations	0.020
	(0.078)
Political z-score	-0.034
	(0.019)

Note: This table shows the coefficients resulting from a regression that relates the outcome of an election (turnover, no turnover) in country A in year t to the pairwise differences (between country A and country B) in each listed variable in the year $t-1$. Note that this is done only for years where there is a close election. The variables come from the World Bank's World Development Indicators (WDI) and Databank International's Cross-National Time-Series Data (CNTS). All variables are standardized on the pair level, and differences are directed, meaning they are defined $A \rightarrow B$, where country A is the one with an election. Standard errors are clustered on the coercer level. Importantly, the stars correspond to p-values corrected for False Discovery Rate. This is done using the procedure from Benjamini, Krieger, and Yekutieli (2006), as described (in Section 3.2.3) of Anderson (2008). * $p < 0.1$, ** $p < .05$, *** $p < 0.01$.

Table A.19: Alignment and power - electoral turnover and average changes in alignment and power

	$\text{Alignment}_{\{AB\},\{t+1,t+2\}}$	$\text{Power}_{\{AB\},\{t+1,t+2\}}$
	(1)	(2)
$\mathbb{1}\{\text{Turnover}\}_{A,t}$	0.0187	0.0245
	(0.0268)	(0.0231)
N	3485	3485

Note: This table relates country A's election outcome in year t with future levels of alignment or power. The first column features average alignment in the years $t+1$ and $t+2$ as the outcome, and the second column has average power in years $t+1$ and $t+2$ as the outcome. Alignment and power are both standardized at the pair level, and alignment is unordered, whereas power is ordered as the target's power over the coercer's power. Standard errors are not clustered and are heteroskedasticity-robust. * $p < 0.1$, ** $p < .05$, *** $p < 0.01$.

Table A.20: Alignment and power - robustness

	$\text{Power}_{B\rightarrow A,\{t+1,t+2\}}$		
	(1)	(2)	(3)
Panel A: Baseline specification			
$\widehat{\text{Alignment}}_{\{AB\},\{t+1,t+2\}}$	-0.368**	-0.381***	-0.386***
	(0.145)	(0.147)	(0.147)
Panel B: Alternative timing			
Panel B.1.1: alignment and power in first year after election			
$\widehat{\text{Alignment}}_{\{AB\},\{t+1\}}$	-0.200*	-0.208**	-0.210**
	(0.103)	(0.104)	(0.104)
Panel B.1.2: alignment in first year after election, power averaged over two years after election			
$\widehat{\text{Alignment}}_{\{AB\},\{t+1\}}$	-0.263***	-0.272***	-0.274***
	(0.083)	(0.084)	(0.084)
Panel B.1.3: alignment in first year after election, power averaged over three years after election			
$\widehat{\text{Alignment}}_{\{AB\},\{t+1\}}$	-0.165**	-0.171**	-0.174**
	(0.068)	(0.068)	(0.068)
Panel B.2.1: alignment averaged over two years after election, power in first year after election			
$\widehat{\text{Alignment}}_{\{AB\},\{t+1,t+2\}}$	-0.261	-0.270	-0.276
	(0.175)	(0.177)	(0.177)
Panel B.2.2: alignment averaged over two years after election, power averaged over three years after election			
$\widehat{\text{Alignment}}_{\{AB\},\{t+1,t+2\}}$	-0.225*	-0.234**	-0.239**
	(0.118)	(0.119)	(0.119)
Panel B.3.1: alignment averaged over three years after election, power in first year after election			
$\widehat{\text{Alignment}}_{\{AB\},\{t+1,t+3\}}$	-0.493*	-0.502**	-0.507**
	(0.255)	(0.255)	(0.256)
Panel B.3.2: alignment averaged over three years after election, power averaged over two years after election			

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Table A.20 (continued)			
$\widehat{\text{Alignment}}_{\{AB\},\{t+1,t+3\}}$	-0.397**	-0.406**	-0.411**
	(0.203)	(0.203)	(0.203)
Panel B.3.3: alignment and power averaged over three years after election			
$\widehat{\text{Alignment}}_{\{AB\},\{t+1,t+3\}}$	-0.284*	-0.291*	-0.295*
	(0.168)	(0.168)	(0.168)
Panel C: Alternative measurements of power			
Panel C.1: sectors with non-zero trade flows			
$\widehat{\text{Alignment}}_{\{AB\},\{t+1,t+2\}}$	-0.317**	-0.330**	-0.333**
	(0.143)	(0.144)	(0.144)
Panel C.2: sector with max power			
$\widehat{\text{Alignment}}_{\{AB\},\{t+1,t+2\}}$	-0.327**	-0.333**	-0.338**
	(0.145)	(0.146)	(0.146)
Panel C.3: sectors unweighted			
$\widehat{\text{Alignment}}_{\{AB\},\{t+1,t+2\}}$	-0.353**	-0.367**	-0.373**
	(0.145)	(0.147)	(0.147)
Panel C.4: sector with max power, unweighted			
$\widehat{\text{Alignment}}_{\{AB\},\{t+1,t+2\}}$	-0.285**	-0.296**	-0.303**
	(0.142)	(0.144)	(0.144)
Panel C.5: HS-2 sector level			
$\widehat{\text{Alignment}}_{\{AB\},\{t+1,t+2\}}$	-0.411***	-0.424***	-0.429***
	(0.149)	(0.150)	(0.151)
Panel C.6: asymmetry in trade volume			
$\widehat{\text{Alignment}}_{\{AB\},\{t+1,t+2\}}$	0.055	0.034	0.034
	(0.140)	(0.140)	(0.140)
Panel C.7: expenditure share as dependence share			
$\widehat{\text{Alignment}}_{\{AB\},\{t+1,t+2\}}$	-0.197	-0.204	-0.209
	(0.155)	(0.156)	(0.156)
Panel C.8: include trade in services			
$\widehat{\text{Alignment}}_{\{AB\},\{t+1,t+2\}}$	-0.345**	-0.359**	-0.364**
	(0.143)	(0.145)	(0.145)

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Table A.20 (continued)			
Panel D: Alternative sample			
Panel D.1: including problematic pairs			
$\widehat{\text{Alignment}}_{\{AB\},\{t+1,t+2\}}$	-0.305**	-0.319**	-0.323**
	(0.126)	(0.127)	(0.127)
Panel D.2: random control group			
$\widehat{\text{Alignment}}_{\{AB\},\{t+1,t+2\}}$	-0.359**	-0.372**	-0.376**
	(0.145)	(0.147)	(0.147)
Panel E: Alternative definition of close election			
Panel E.1: 4% vote margin threshold			
$\widehat{\text{Alignment}}_{\{AB\},\{t+1,t+2\}}$	-0.401***	-0.410***	-0.415***
	(0.153)	(0.154)	(0.154)
Panel E.2: 6% vote margin threshold			
$\widehat{\text{Alignment}}_{\{AB\},\{t+1,t+2\}}$	-0.611***	-0.628***	-0.630***
	(0.232)	(0.235)	(0.235)
Panel E.3: 8% vote margin threshold			
$\widehat{\text{Alignment}}_{\{AB\},\{t+1,t+2\}}$	-0.625***	-0.633***	-0.634***
	(0.228)	(0.228)	(0.228)
Panel E.4: presidential elections only			
$\widehat{\text{Alignment}}_{\{AB\},\{t+1,t+2\}}$	-0.409***	-0.412***	-0.415***
	(0.102)	(0.102)	(0.102)
Panel F: Alternative measurement of geopolitical alignment			
Panel F.1: $\alpha = .25$			
$\widehat{\text{Alignment}}_{\{AB\},\{t+1,t+2\}}$	-0.386**	-0.398**	-0.403**
	(0.172)	(0.173)	(0.173)
Panel F.2: $\alpha = .75$			
$\widehat{\text{Alignment}}_{\{AB\},\{t+1,t+2\}}$	-0.382***	-0.397***	-0.403***
	(0.138)	(0.140)	(0.140)
GDP difference control	N	Y	Y
Total trade control	N	N	Y
Pair FE	Y	Y	Y
Year FE	Y	Y	Y

Continued on next page

Table A.20 (continued)

Note: This table shows results for modified versions of the second stage of the election IV as discussed in Section 5.3. The three columns in all panels differ by the controls used (as indicated at the very bottom of the table); the first column does not control for GDP difference or total trade, the second column controls only for the former, and the third column controls for both. Panel A displays the baseline regression results, which are identical to those in Table 3.
Each panel (from B to F) corresponds to a different robustness check. Panel B varies the number of periods of alignment and power that are used in the regression; Panel C varies the measurement of power; Panel D varies the sample; E employs different definitions of 'close' elections; Panel F uses different weighting for the measurement of geopolitical alignment. Panel B relates power and alignment using ℓ periods of power and k periods of alignment after year t, where ℓ and k take on values $1, 2, 3$ (the baseline regression used $k = \ell = 2$). Panel B.1 has $k = 1$ for each subpanel and varies ℓ; Panel B.2 has $k = 2$, and Panel B.3 has $k = 3$, where each varies ℓ within. Panel C (and all panels after) use $k = \ell = 2$. Panel C shows the second stage with different definitions of power, shown in the same order as described in paragraph 'Alternative measurements of power' in Section 5.3.1. Panel D.1 shows the results when including pairs which have elections on both sides (and whose timing is feasible for identification); this amounts to 188 additional pairs. Panel D.2 uses a random designation of country A and country B for pairs with no elections. Panel E shows results of using different thresholds for an election to be considered 'close'. In baseline, we use 5% as the cutoff; Panel E.1 uses 4%, Panel E.2 uses 6%, and Panel E.3 uses 8%. Panel E.4 reverts to 5% margin, but only uses presidential elections (whereas the previous panels use both presidential and parliamentary elections). Panel F instead varies the weight put on Gallup disapproval vs. Polity ratings; Panel F.1 puts more weight on Polity ($\alpha = .25$) and Panel F.2 puts more weight on Gallup ($\alpha = .75$). The terms $\mathbb{1}\{\text{Turnover}\}_{A,t}$, $\mathbb{1}\{\text{No turnover}\}_{A,t}$, $\widehat{\text{Alignment}}_{\{AB\},\{t+1,t+2\}}$, GDP difference, and total trade are identically defined as explained in the notes of Table 3. Next, we list the number of observations for each panel. Panel A: 56795, Panel B.1: 53985, Panel B.2: 56795, Panel B.3: 57640 , Panel C: 56795, Panel D.1: 57551, Panel D.2: 56795, Panel E.1: 57989 , Panel E.2: 55649, Panel E.3: 54338, Panel E.4: 60983, Panel F: 56795 .Standard errors are clustered at the pair level. * $p < 0.1$, ** $p < .05$, *** $p < 0.01$.

Table A.21: China's power and its trade expansion

	$\text{Power}_{CHN\rightarrow n,t}$
China $\text{exposure}_{CHN\rightarrow n,t}$	0.491^{**}
	(0.192)
GDP $\text{difference}_{CHN\rightarrow n,t}$	-0.0138
	(0.0457)
Total $\text{trade}_{CHN\rightarrow n,t}$	0.522^{***}
	(0.0533)
N	3934
Year FE:	Yes
Pair FE:	Yes

Note: This table demonstrates China's expansion affecting China's power against other countries specified in Equation (38). The regression is at the country X year level. China exposure is defined by the weighted average of China's sector-level global market share, weighted by each sector's ratio in each country's aggregate import. GDP difference is directed (with $\text{GDP}_{\text{CHN}} - \text{GDP}_n$). All variables are standardized within pair. Standard errors are clustered at country n level. * $p < 0.1$, ** $p < .05$, *** $p < 0.01$.

Table A.22: China's power and the Five Year Plan

	ΔExport volume$_{CHN\to n}$		ΔPower$_{CHN\to n}$	
	(1)	(2)	(3)	(4)
FYP exposure$_{CHN\to n}$	991613.4***	996255.0***	1.133***	1.115***
	(189709.0)	(186592.0)	(0.277)	(0.274)
N	218766	218766	218766	218766
Country FE:	No	Yes	No	Yes

Note: This table shows the estimated coefficients from the regression specified in Equation (39). The regression is at the country X HS-4 level. The changes, denoted Δ, are defined as the change in the mean values from the pre-period (defined as the first two years of the FYP) to the post-period (defined as the last year of the FYP and one year following the end). The treated sectors are those that were included in the FYP starting in the 10th FYP. FYP exposure is defined as the proportion of country n's sector import that is included in the FYP. Standard errors are heteroskedasticity-robust. * $p < 0.1$, ** $p < .05$, *** $p < 0.01$.

Table A.23: Critical goods categorization by the draft list of critical supply chains

Sector	Subsector
Critical Minerals and Materials	Critical Minerals
Energy	Carbon Capture
Energy	Electric Grid
Energy	Fuel Cells
Energy	Hydropower
Energy	Large Capacity Batteries
Energy	Neodymium Magnets
Energy	Nuclear Power
Energy	Platinum Group Metals
Energy	Solar
Energy	Wind
ICT	Audiovisual Equipment
ICT	Computer Equipment
ICT	Other Electronic Components
ICT	Semiconductors
ICT	Semiconductors/Electronic components
ICT	Telecom/Network Equipment
Public Health	Personal Protective Equipment and Durable Medical Equipment
Public Health	Pharmaceuticals: API
Public Health	Pharmaceuticals: API; Personal Protective Equipment and Durable Medical Equipment
Public Health	Pharmaceuticals: API; Testing and Diagnostics
Public Health	Testing and Diagnostics

Note: The table shows the content of the draft list of critical supply chains. The list classifies critical goods into 4 main sectors and 22 subsectors.

Table A.24: Alignment and trade policies - $A \rightarrow B$ direction

Panel A: second stage

	Trade policies		
	Power-promoting policy$_{A \rightarrow B}$	Net liberal import policy$_{A \rightarrow B}$	Net liberal export policy$_{A \rightarrow B}$
	(1)	(2)	(3)
$\widehat{\text{Alignment}}_{\{AB\},\{t+1,t+2\}}$	-0.0427	0.118	0.0887
	(0.338)	(0.336)	(0.0540)

Panel B: first stage

	$\text{Alignment}_{\{AB\},\{t+1,t+2\}}$		
	(1)	(2)	(3)
$\mathbb{1}\{\text{Turnover}\}_{A,t}$	0.0761	0.0776	0.0820
	(0.0598)	(0.0597)	(0.0599)
$\text{Alignment}_{\{AB\},t-1} \times \mathbb{1}\{\text{Turnover}\}_{A,t}$	-0.0416	-0.0416	-0.0448
	(0.0662)	(0.0661)	(0.0667)
$\mathbb{1}\{\text{No turnover}\}_{A,t}$	-0.0669	-0.0669	-0.0679
	(0.0574)	(0.0575)	(0.0569)
$\text{Alignment}_{\{AB\},t-1} \times \mathbb{1}\{\text{No turnover}\}_{\{A\},t}$	-0.0182	-0.0188	-0.0130
	(0.0611)	(0.0611)	(0.0608)
$\text{Outcome}_{A \rightarrow B,t-1}$	0.0375***	-0.0449***	-0.132*
	(0.0119)	(0.0120)	(0.0688)
$\text{Alignment}_{\{AB\},t-1}$	0.0513***	0.0515***	0.0515***
	(0.0149)	(0.0149)	(0.0149)
$\text{GDP difference}_{B \rightarrow A,t-1}$	-0.0606***	-0.0613***	-0.0610***
	(0.0189)	(0.0189)	(0.0190)
$\text{Total trade}_{\{AB\},t-1}$	-0.0182	-0.0184	-0.0181
	(0.0178)	(0.0178)	(0.0178)
N	5140	5140	5140
Year FE:	Y	Y	Y
Pair FE:	Y	Y	Y

Note: This table shows the first stage of the IV that relates power and alignment levels as specified in Equation (18); the only difference is that the outcome variables are from direction $A \rightarrow B$ rather than $B \rightarrow A$. The term $\mathbb{1}\{\text{Turnover}\}_{A,t}$ is one if the country A had a close election and that election resulted in the ideology of the party in power in $t-1$ being different than the ideology of the party that won the election in t; it is zero otherwise. $\mathbb{1}\{\text{No turnover}\}_{A,t}$ is one if country A had a close election and the ideology of the party in $t-1$ is the same as that of the party that won the election in period t; it is zero otherwise. $\widehat{\text{Alignment level}}_{\{AB\},t+1}$ is the predicted value of alignment from the first stage. Power, GDP difference, and total trade are all lagged and standardized on the (ordered or unordered, depending on variable) pair level, and power and GDP difference are directed, total bilateral trade is undirected. Standard errors are clustered at the pair level. * $p < 0.1$, ** $p < .05$, *** $p < 0.01$.