Hegemonic Globalization

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Abstract

How do shifts in the global balance of power shape globalization? We develop a theory of alignment-based "hegemonic globalization," built on two premises: countries differ in their preferred policies, and trade increases with policy alignment. Because access to large markets is especially valuable, hegemons foster policy alignment and thereby global economic integration. A unipolar world dominated by a sufficiently large hegemon tends to support globalization, while the emergence of a competing hegemon with different policy preferences can trigger fragmentation. Such fragmentation lowers global welfare and is most costly for the incumbent hegemon and its closest allies. To evaluate the theory's key mechanisms, we create the *Global Treaty Database*, covering the near-universe of international agreements signed between 1800 and 2020. Treaties formally codify policy alignment, and two-thirds of them concern economic integration. As predicted by the model, countries shift their alignment towards powerful hegemons, alignment strongly predicts bilateral trade, and countries aligned with the same hegemon also trade more with one another.

Keywords: Hegemon, globalization, trade integration, international coercion, international treaties, cooperation, multipolar world

JEL Codes: F02, F15, F50, F51, F55, F60, P45.

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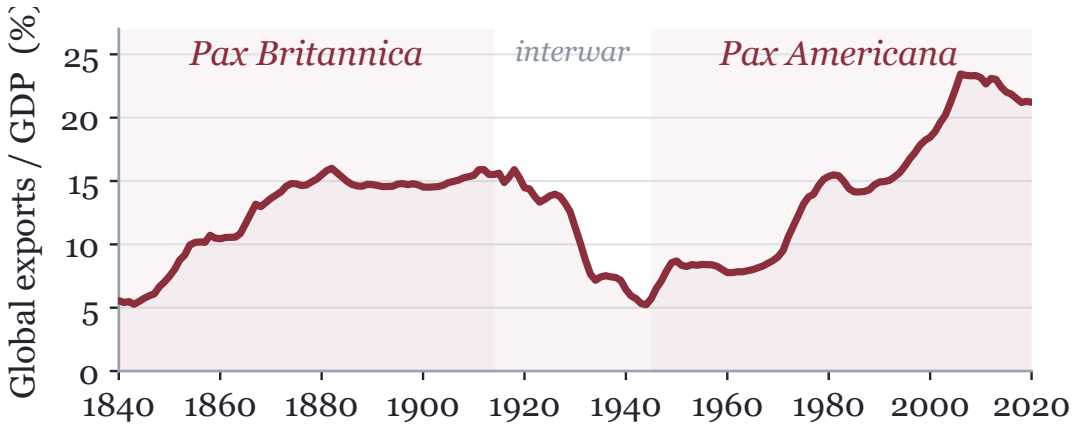
1 Introduction

How does the global balance of power shape globalization? Modern history suggests that hegemonic dominance and globalization are intertwined, as illustrated by Figure 1. Over the past two centuries, the world economy experienced two major waves of globalization, and both coincided with periods of clear geopolitical dominance: Great Britain during the first era of globalization before WW1, the *Pax Britannica*, and the United States during the second, the *Pax Americana*. By contrast, globalization remained limited before 1815 and collapsed during the interwar period, two periods without a clear global leader. Today, the world is again entering a period of intense great-power rivalry, while globalization shows signs of stalling.

The idea that hegemony and globalization are connected has a long intellectual history, running from List (1841) through Hirschman (1945) to Kindleberger (1973).[1] Yet the underlying economics remains poorly understood. What is the economic mechanism through which a hegemon fosters globalization? Does a shift from a unipolar to a multipolar world undermine global economic integration? If so, through what mechanisms? And who stands to gain or lose from such a transition?

This paper develops an alignment-based theory of hegemonic globalization and evaluates its central mechanism in the data: dominant powers give countries incentives to align their policies, and growing policy alignment supports trade and globalization. We characterize these forces formally and evaluate them empirically using a new measure of alignment built from the near-universe of international treaties signed since 1800.

Figure 1: Two centuries of globalization: global exports to global GDP



Note: Data from TradeHist and IMF; see Appendix Table A1. Five-year moving average.

[1] List (1841) argued that free trade serves the interests of the dominant power, and Hirschman (1945) showed that powerful states exploit asymmetric trade dependence. Kindleberger (1973), in turn, argued that an open world economy requires a dominant power to sustain it.

The theory rests on two core premises. First, countries differ in their preferences over policies. We think of policies broadly as those supporting the cross-border exchange of goods, services and ideas, including legal and technical standards, licensing regimes, currency choices, taxation systems, governance structures, or the regulation of property rights, labor and capital. Second, the gains from trade between any two countries increase with the degree of policy alignment, meaning the similarity in their chosen policies. Thus, we think of alignment as reducing or removing impediments to cross-border transactions and trade, i.e., as reducing "border effects."

We study the role of hegemons in this world. Hegemons are defined by size: they are attractive economic partners, which gives them disproportionate influence over the behavior of other countries. Hegemony is therefore relative rather than absolute, and more than one hegemon can exist at any point in time.[2]

We first study a *unipolar* world with a single hegemon. Three results emerge. First, equilibrium policies balance countries' heterogeneous preferences against the gains from policy alignment. Second, the presence of a sufficiently large hegemon increases the gains from alignment, facilitating the transition from a fragmented world in which countries choose different policies to a globalized world in which they coordinate on a common policy. We refer to this outcome as *hegemonic globalization*. Third, although globalization raises average welfare, countries whose preferred policies differ substantially from those of the hegemon may lose from the resulting convergence. Nonetheless, globalization still arises in equilibrium if these countries find it optimal to align with the hegemon once everyone else has done so.

We next turn to a *multipolar* world with an incumbent and a rising hegemon. Unlike the unipolar case, the equilibrium is now shaped by the strategic interaction between two large economies. The central question is whether the rising hegemon finds it optimal to preserve the existing global order by aligning with the incumbent or to pursue its preferred policies, thereby inducing fragmentation. We show that the answer depends on two forces: the size of the incumbent, which determines the gains from remaining integrated with the existing global economy, and the degree of heterogeneity in policy preferences. When the rising hegemon is still small, it has little influence on the policies of other countries and the analysis resembles the unipolar benchmark. Once it becomes sufficiently large, however, its policy choice affects the incentives of all other countries. As a result, the transition to a multipolar world may either reinforce globalization or trigger a broad process of realignment and fragmentation. We

[2]This is in line with Gunitsky (2017), who defines a hegemon as *a leading power, or a state that comprises a "pole" in the international system... The salient characteristic of a pole is that it is not merely a major power, but a leading state with the capacity to impose regimes, influence other great powers, and inspire institutional imitators...*

characterize the conditions under which each outcome arises and show that fragmentation reduces global welfare.

A central element of the theory is that similarity in policies, i.e., policy alignment, reduces transaction costs thereby increasing gains from trade. This gives rise to a new type of strategic complementarity: because the gains from alignment depend on the choices of all other countries, a country's preferred policy is determined not only by its bilateral relationship with the hegemon but also by the policies adopted elsewhere in the world. These complementarities explain why sufficiently large markets can coordinate global policy choices, why changes in hegemonic leadership may trigger widespread realignment, and why globalization can unravel when large powers diverge.

Importantly, hegemonic globalization does not require coercion. In the benchmark model, policy alignment arises voluntarily because countries coordinate on the world's largest markets. Nevertheless, hegemons may also use coercion by threatening to restrict market access to countries that refuse to align. We show that coercion can accelerate alignment by inducing the formation of geopolitical blocs, but it may also reduce global welfare by generating excessive alignment. Hegemons are most likely to resort to coercion when they are of intermediate size: if they are too small, too few countries are willing to join their bloc, whereas if they are sufficiently large, voluntary alignment makes coercion unnecessary. In a multipolar world, coercion may temporarily sustain globalization by keeping a rising hegemon aligned with the incumbent, but if differences in preferences are sufficiently large, the rising hegemon eventually charts its own course.

To evaluate the central mechanism of the theory empirically, we introduce the Global Treaty Database, a new empirical resource for measuring international policy alignment. The idea of using treaties to capture alignment is centuries old. For much of modern history, when governments sought to align, they signed treaties. Treaties are formal, legally binding instruments through which states coordinate policies and commit to common rules, and a large literature in law and political science studies treaties as instruments of international alignment (Appendix B.2).

Our innovation is to collect and classify the global treaty network systematically, allowing us to quantify policy alignment across countries and over two centuries. The core database builds on dozens of sources and covers 54,293 alignment treaties, including roughly 49,000 bilateral and 5,400 multilateral agreements signed between 1800 and 2020. Building on Miles and Posner (2008), we classify treaties into 22 policy domains.

The database reveals a striking fact: the dominance of economic alignment. About two-

thirds of treaties, historically and today, concern economic integration, much of it through what trade theory describes as "deep," behind-the-border integration. These treaties cover not only tariffs and market access, but also taxation, investment, transport, communications, sanitary and technical standards, property rights, and other policies governing cross-border economic exchange.

These features make the treaty database particularly well suited to bringing our model to the data. First, treaties record actual policy alignment between states. Second, they are predominantly economic, which maps closely to the trade-cost channel in our model. Third, they provide rich variation across the full range of policy domains and span two centuries.

We use the Global Treaty Database to examine the two links at the heart of the theory: from hegemons to alignment, and from alignment to trade. First, we find that hegemons account for a disproportionate share of global treaty-making, and that countries sign a disproportionate number of treaties with hegemons. This pattern is visible in major historical shifts in global power, including the rise of the United States in the late 19th century and, recently, China. More systematically, we run panel regressions with a rich set of fixed effects and find a strong positive relationship between hegemonic power and treaty alignment, both globally and within country pairs.

Second, we provide evidence that alignment fosters economic integration. Countries that sign more treaties trade substantially more with one another, and treaty-making systematically precedes major episodes of trade integration. This relationship is very robust, and it holds in both the historical and modern sample, for bilateral and multilateral treaties, and for economic and non-economic treaties. Crucially, this finding is not driven by trade policy, as it also holds after controlling for tariffs and for bilateral and regional trade agreements.

Finally, alignment with a hegemon has effects that extend beyond countries' bilateral relations with that hegemon. Two countries that are more closely aligned with the same hegemon also trade more with one another, even conditional on their direct treaty relationship. This finding captures the multilateral complementarity at the center of our theory: by inducing countries to adopt compatible policies, hegemons do not merely strengthen their own bilateral ties; they help organize an integrated global economic order. Shifts in hegemonic power can therefore reshape globalization as a whole.

Related literature

Our paper contributes to a rapidly growing literature on geoeconomics. One strand studies the instruments through which states exercise economic power, including sanctions, tariffs, export controls, and foreign aid (Itskhoki and Mukhin, 2022, 2026; Bianchi and Sosa-Padilla,

2024; Nigmatulina, 2025; Clayton, Maggiori, and Schreger, 2025, 2026a; Levchenko, Pandalai-Nayar, and Young, 2026; Egorov et al., 2026). A related strand examines how economic dependence shapes political alignment and how major powers compete for influence over third countries (Kleinman, Liu, and Redding, 2024; Camboni and Porcellacchia, 2023; Liu and Yang, 2025; Meyer and Wesseler, 2025; Becko, Grossman, and Helpman, 2025; Clayton, Maggiori, and Schreger, 2026b; Liu et al., 2026). Consistent with these forces, Gopinath et al. (2025) document growing fragmentation of trade and investment along geopolitical lines.

Our paper makes two distinct contributions to this literature.

First, our theory of alignment-based hegemonic globalization studies the role of hegemons in a world of multiple countries, going beyond the bilateral interactions emphasized in much of the literature. Because a country's gains from alignment depend on the policies adopted elsewhere, alignment decisions are strategic complements: when one country aligns with a hegemon, it also strengthens the incentives of other countries to align. As a result, a hegemon can reshape the global economy through its sheer market size, inducing countries to align voluntarily rather than through coercion. In a multipolar world, these complementarities give rise to strategic interaction between an incumbent and a rising hegemon, allowing us to characterize when a power transition reinforces globalization and when it produces widespread realignment and fragmentation. Coercion can amplify these forces by accelerating the formation of blocs, but it is not necessary for hegemonic globalization to emerge.

Second, we provide a new measure of international alignment that makes it possible to study changes in the global architecture of policy cooperation over two centuries. The Global Treaty Database traces bilateral and multilateral policy alignment since 1800 across trade, investment, taxation, transportation, standards, legal cooperation, migration, and many other domains. This broad treaty-based measure closely matches the notion of alignment in our theory and considerably expands on existing datasets, which typically capture particular dimensions of alignment, such as trade agreements or military alliances. Our measure also complements proxies such as UN voting patterns and event-based measures such as state visits (Broner et al., 2025): treaties capture formal policy coordination and are available over a much longer historical period.

Our framework also clarifies one channel through which international relations affect trade. Differences in legal systems, technical standards, taxation, regulation, property rights, and other policies create impediments to cross-border exchange even conditional on tariffs and transportation costs. By reducing these impediments, policy alignment facilitates trade. In this respect, our work complements studies of how international relations, including imperial

and military ties, shape international trade (Findlay and O'Rourke, 2007; Martin, Mayer, and Thoenig, 2008; Glick and Taylor, 2010).

The paper is organized as follows. Section 2 introduces the framework. Section 3 studies alignment and globalization in a unipolar world, and also analyzes the strategic interaction between an incumbent and a rising hegemon in a multipolar world. Section 4 introduces coercion. Sections 5 and 6 present the Global Treaty Database and the empirical results, respectively. Section 7 concludes.

2 A model of hegemonic globalization

This section develops a model of hegemonic globalization built around two central premises. First, countries have heterogeneous preferences over policies. Second, the gains from trade between any two countries increase in the similarity of their policies, i.e., in their alignment. We use this framework to study how hegemons shape equilibrium policy alignment and trade integration.

2.1 Setup

The world lasts for two periods, $t \in \{0, 1\}$. It consists of a finite set of large countries, or *hegemons*, and a continuum of small countries. Countries are characterized by their preferred policies, represented by their "location" on a circle of circumference one, $W \equiv (-0.5, 0.5]$, and by their size.

Hegemons form a finite set $H \subset W$. Each hegemon $i \in H$ prefers policy i, is populated by a representative agent with mass $\eta_i > 0$, and produces an equal mass η_i of differentiated goods. Small countries are infinitesimal, uniformly distributed over the set $I = W \setminus H$, and have total mass one. Each small country $i \in I$ prefers policy i, is populated by a representative agent, and produces a single differentiated good. We denote by (i, r) the variety r produced by hegemon $i \in H$, where $r \in [0, \eta_i]$. For notational consistency, we denote the unique variety produced by small country $i \in I$ by $(i, 0)$. Finally, we let $h_n \in H$ denote the n-th largest hegemon. Although the model can in principle accommodate many hegemons, we focus throughout on the cases of one or two hegemons.

At $t = 0$, the government of each country $i \in W$ adopts a policy $a_i \in W$ to maximize the welfare of the country. Policy choices affect welfare through two channels, as we explain formally below. First, residents prefer policies close to their country's ideal point, so that their

welfare falls with distance $d(a_i, i)$.[3] Second, the gains from trade between any two countries, $i, j \in W$, are decreasing in the distance $d(a_i, a_j)$.

Hegemons may commit to their policies before small countries.[4] Early commitment allows them to coordinate expectations and thereby influence the policy choices of others. In case two hegemons choose their policies early, we assume that the larger hegemon chooses first.

At $t = 1$, production, trade, and consumption take place. Each resident is endowed with ω units of a homogeneous tradable numeraire good. Residents of country i can transform the numeraire into the country's differentiated good(s), (i, r), at a one-for-one rate.

The utility of a resident of country i depends both on her consumption and on the policy set by country i:

$$U^i = \mathcal{C}^i - \alpha \cdot d(a_i, i) \tag{1}$$

where $\mathcal{C}^i$ denotes utility derived from consumption, and $\alpha \cdot d(a_i, i)$ denotes the disutility of setting a policy $a_i \neq i$. The parameter α captures the intensity of preferences over policies, and is the key determinant of preference heterogeneity.

We solve throughout for equilibria that are symmetric within countries, in which all residents of a given country have the same consumption.[5] Letting m^i and c^i_{js} respectively denote the consumption of the homogeneous good and of differentiated good (j, s) by a resident of country i, the consumption component of utility is quasi-linear and has additively separable subcomponents:

$$\mathcal{C}^i = m^i + \int_{j \in I} \frac{\sigma}{\sigma - 1} \cdot \left(\chi \cdot c^i_{j0}\right)^{\frac{\sigma-1}{\sigma}} \cdot dj + \sum_{j \in H} \int_0^{\eta_j} \frac{\sigma}{\sigma - 1} \cdot \left(\chi \cdot c^i_{js}\right)^{\frac{\sigma-1}{\sigma}} \cdot ds, \tag{2}$$

where χ is a demand shifter that captures the attractiveness of differentiated goods relative to the homogeneous good.

A central feature of the framework is that policies affect utility both directly and indirectly. We make two key assumptions in this regard. The first assumption, as outlined in Equation 1, is that countries have heterogeneous preferences over policies. We interpret country i's disutility of setting $a_i \neq i$ as reflecting persistent differences in policy preferences—for example, over political institutions (e.g. democracy vs. autocracy), environmental regulation, public health, or national security. Alternatively, it may capture adjustment costs or policy hysteresis,

[3] The distance between any two points i and j is given by $d(a_i, i) \equiv \min\{|i - j|, 1 - |i - j|\}$.

[4] This could be motivated by assuming that countries can pay a positive cost to choose their policy at an early stage. Small countries would never pay this cost since they cannot affect the policies of other countries.

[5] This is inconsequential for equilibrium properties but it simplifies the notation.

whereby changing broad institutions relative to the status quo is costly.

The second assumption is that the gains from trade between any two countries are increasing in the similarity of their policies, i.e., in their policy alignment. In particular, there is an iceberg friction $\tau_{ij} \geq 1$ that makes cross-border trade costly between countries i and j. Letting p^j_{js} denote the domestic price of variety (j, s), its price in country i is equal to $p^i_{js} = \tau_{ij} \cdot p^j_{js}$. This cross-border friction is decreasing in policy alignment:

$$\tau_{ij} = \left[\frac{1}{1 - \beta \cdot d\left(a_i, a_j\right)} \right]^{\gamma} \tag{3}$$

where $\gamma > 0$ and $\beta \in (0, 2)$. Equation 3 implies that full policy alignment eliminates the friction, i.e., $a_i = a_j \Rightarrow \tau_{ij} = 1$. Moreover, the friction remains finite even at the maximum policy distance, $d\left(a_i, a_j\right) = 0.5$.

We do not think of τ_{ij} as capturing standard trade policy instruments such as tariffs or quotas, which we abstract from in the baseline model and control for explicitly in the empirical analysis. Instead, it captures a broad class of non-tariff and institutional frictions that arise when countries operate under different regulatory, legal, or geopolitical environments. Differences in product standards, certification procedures, contract enforcement, financial regulation, currencies, or geopolitical alignment all generate real resource costs or risks for firms engaged in cross-border exchange.[6]

This formulation is consistent with the idea, emphasized in the trade literature, that borders are associated with substantial frictions even after controlling for observable barriers such as tariffs and geographic distance. We do not attempt to provide a comprehensive account of these "border effects." Rather, we focus on one channel—differences in policies and institutions across countries—and model it in a parsimonious way as an endogenous determinant of cross-border frictions. These frictions can be interpreted as increasing various costs of conducting business, reducing match quality between buyers and sellers, or limiting the set of tradable varieties.

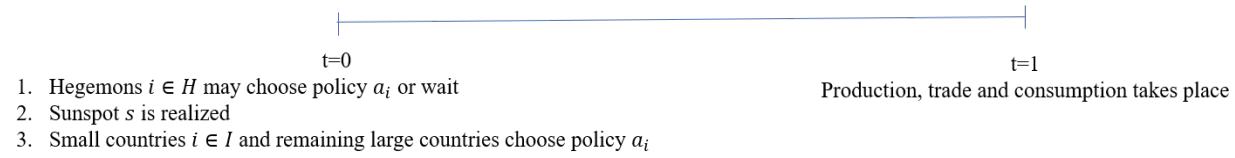
The framework can be interpreted as a theory of endogenous international standards: countries choose whether to preserve their preferred policies or to adopt a common policy regime, recognizing that the value of doing so increases with the number of countries making the same choice. As a result, policy choices exhibit strategic complementarities and the model may admit

[6]This captures well-established empirical regularities. For instance, it has been shown that democracies and military allies trade more with one another (Mansfield, Milner, and Rosendorff, 2000; Yu, 2010; Neri-Laine, 2023), that the harmonization of standards and product regulations increases trade (Chen and Mattoo, 2008; Schmidt and Steingress, 2022; Fiankor and Shingal, 2025), as does the adoption of a common currency (Rose, 2000; Glick and Rose, 2016), and that common financial regulation fosters asset trade (Kalemli-Ozcan, Papaioannou, and Peydró, 2010).

multiple equilibria. We represent equilibrium selection with a sunspot $s \in [0,1]$, revealed before small countries choose their policies.

Figure 2 depicts the timeline of events in the baseline model.

Figure 2: Timeline



2.2 Equilibrium policy choices and trade

We solve the equilibrium by backward induction. First, we determine optimal consumption choices $\{c_{js}^i\}$ at $t=1$ as a function of the set of policies $\{a_i\}$. We then solve for optimal policies at $t=0$. We relegate all proofs to Appendix A.

To eliminate terms-of-trade considerations, we solve the model under the assumption that the supply of the homogeneous good ω in each country is large enough.[7] Given the production technology, which enables each country to transform a unit of the homogeneous good into its differentiated goods, this guarantees that the domestic price of all differentiated goods equals one, i.e., $p_{js}^j = 1$ for all j and s.

Taking this into account, the following proposition characterizes the equilibrium at $t=1$:

Proposition 1 *Given a set of policies $\{a_i\}_{i \in W}$, the equilibrium per capita consumption of each variety (j,s) and of the homogeneous good in each country i, are respectively given by:*

$$c_{js}^i = \chi^{(\sigma-1)} \cdot (\tau_{ij})^{-\sigma}, \tag{4}$$

and

$$m^i = \omega - \int_{j \in I} \chi^{(\sigma-1)} \cdot (\tau_{ij})^{1-\sigma} \cdot dj - \sum_{j \in H} \chi^{(\sigma-1)} \cdot (\tau_{ij})^{1-\sigma} \cdot \eta_j. \tag{5}$$

The utility of a resident of country i equals:

$$\begin{aligned} U^i = \omega &+ \int_{j \in I} T \cdot (1 - \beta \cdot d(a_i, a_j))^{\gamma(\sigma-1)} \cdot dj + \sum_{j \in H} T \cdot (1 - \beta \cdot d(a_i, a_j))^{\gamma(\sigma-1)} \cdot \eta_j \\ &- \alpha \cdot d(a_i, i) \end{aligned} \tag{6}$$

[7] Formally, we assume throughout that $\omega > \chi^{(\sigma-1)} \cdot \left(1 + \sum_{j \in H} \eta_j\right)$.

where $T \equiv \chi^{\sigma-1} \cdot (\sigma-1)^{-1}$.

Proposition 1 characterizes equilibrium utility as a function of the set of policies. Therefore, the problem of government i at $t=0$ consists of maximizing U^i with respect to a_i. The trade-off entailed by this choice is clearly outlined in Equation 6. On the one hand, choosing a_i close to other countries' policies reduces cross-border frictions and increases the gains from trade. On the other, choosing a_i far from the preferred policy i entails a direct policy cost.

We are left with a final issue: as mentioned earlier, hegemons may have an incentive to choose their policies early in order to influence the behavior of others. We capture this by using $\bar{a}_i$ to denote hegemon i's early choice of policy, where we use the notation $\bar{a}_i = D$ if country i decides to delay and choose its policy simultaneously with the small countries.[8]

Definition 1 *An equilibrium is characterized by a set of early policies by large countries* $\{\bar{a}^*_{h_n}\}_{h_n \in H}$ *and policies by all countries* $\{a^*_i\}_{i \in W}$*, such that*

$$\bar{a}^*_{h_n} = \arg\max_{\bar{a}_{h_n} \in W \cup \{D\}} E\left[U^{h_n} \left| \bar{a}_{h_n}, \{\bar{a}^*_{h_m}\}_{m<n}\right.\right]$$

for all $h_n \in H$ *and*

$$a^*_i = \begin{cases} \bar{a}^*_i & \text{if } i \in H \text{ and } \bar{a}^*_i \neq D \\ \arg\max_{a_i} U^i(a_i, \{a^*_j\}_{j \neq i}) & \text{otherwise} \end{cases}$$

for all $i \in W$.

2.3 Parameter restrictions

The model is general and allows for gains from trade that are convex, concave or linear in alignment. Our objective, however, is not to provide a full characterization of this general model but rather to analyze – in a tractable framework – how the size and number of hegemons shape equilibrium alignment and globalization. For this purpose, we focus on a benchmark specification that delivers closed-form solutions while preserving the central trade-off between the gains from alignment and heterogeneous policy preferences.

Throughout the remainder of the paper, we therefore impose the following assumption.

P1. Linear gains from alignment:

$$\gamma(\sigma-1) = 1.$$

[8] In the presence of multiple equilibria, there may be value in waiting to observe the sunspot s.

Under P1, the gains from policy alignment are linear in policy distance, which yields transparent closed-form conditions for globalization and fragmentation.

Finally, we assume that preference heterogeneity is sufficiently strong to rule out trivial cases in which complete alignment arises regardless of the presence of a hegemon.

P2. Strong preference heterogeneity:

$$\alpha \geq \beta T.$$

3 Equilibrium alignment and globalization

We begin with a unipolar world and characterize when a single hegemon can lead to full policy alignment thereby fostering globalization and maximizing global gains from trade. We then show how the emergence of a second hegemon can either strengthen or weaken globalization.

3.1 Hegemonic globalization in a unipolar world

We begin with the benchmark case of a single hegemon, denoted by U and located at $h_U = 0$. This environment isolates one of the central mechanisms of the model: a hegemon encourages countries to align their policies because doing so increases their gains from trade, not only with the hegemon but also with every other country that makes the same choice.

Two robust equilibria may arise. In the *fragmentation* equilibrium, each country adopts its preferred policy, so that $a_i = i$ for all $i \in W$. In the *globalization* equilibrium, all countries coordinate on the hegemon's policy, $a_i = 0$ for all $i \in W$. Because policy choices are strategic complements, both equilibria may exist simultaneously. In this case, the sunspot selects globalization with probability $p \in (0, 1)$.[9]

The existence of these equilibria reflects a simple trade-off. Countries benefit from coordinating on a common policy because alignment expands their trading opportunities, but they also incur a utility cost from deviating from their preferred policies. The larger the hegemon, the greater the gains from aligning with it, making globalization easier to sustain.

Proposition 2 *Consider a world with a single hegemon U of size η_U, located at $h_U = 0$. There exist two robust equilibria:*

[9] An intermediate equilibrium also exists in which only a subset of countries align with the hegemon. However, this equilibrium is not robust, since an arbitrarily small deviation by some countries would trigger its unraveling. Appendix A formally defines robustness and shows that this notion is closely related to fault-tolerant equilibria (Gradwohl and Reingold, 2014).

1. ***Fragmentation:*** *$a_i^* = i$ for all $i \in W$. This equilibrium exists if and only if*

$$\eta_U \leq \frac{\alpha}{\beta T}.$$

2. ***Globalization:*** *$a_i^* = 0$ for all $i \in W$. This equilibrium exists if and only if*

$$\eta_U \geq \frac{\alpha}{\beta T} - 1.$$

Proposition 2 highlights the role of the hegemon's size in sustaining globalization. When the hegemon is sufficiently small, the gains from policy alignment are too limited to compensate countries for deviating from their preferred policies, so fragmentation is the unique equilibrium. As the hegemon grows, coordination on its policy becomes self-sustaining, creating a region in which fragmentation and globalization coexist as robust equilibria. Once the hegemon becomes sufficiently large, fragmentation can no longer be sustained and globalization becomes the unique equilibrium.

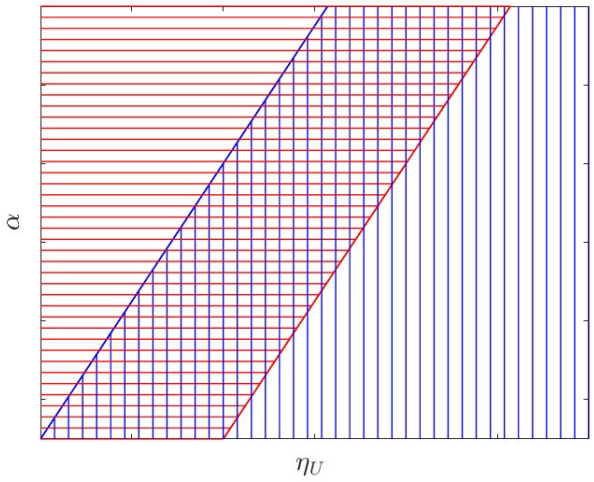
The intuition is straightforward. Policy alignment generates strategic complementarities: the incentive of any country to align with the hegemon increases with the number of countries that also align. A larger hegemon raises the direct return to aligning with it and thereby makes widespread alignment more likely, further increasing the return to adopting the common policy.

Figure 3 summarizes the equilibrium correspondence in the unipolar world. The figure summarizes three distinct regions: as the hegemon's size increases, the economy moves from unique fragmentation, to multiple equilibria, and eventually to unique globalization. The figure shows that the strength of preference heterogeneity also matters: keeping the size of the hegemon constant, an increase in α moves the equilibrium from unique globalization to multiple equilibria and eventually to unique fragmentation.

We turn next to welfare. Panel (a) of Figure 4 depicts welfare for the countries that are closest to and farthest from the hegemon as a function of η_U. There are two forces that affect welfare as η_U increases. First, holding policies fixed, a larger hegemon raises every country's gains from trading with it. Second, an increase in hegemonic size may change the equilibrium from fragmentation to globalization. From the perspective of any given country i, this transition may or may not be beneficial. For countries close to the hegemon, $i \approx 0$, alignment increases gains from trade with all other countries and entails little or no policy cost. For countries far from the hegemon, $i \approx 0.5$, alignment also increases gains from trade with all other countries but entails a large policy cost.

This discussion implies that, as depicted in Panel (a) of Figure 4, not all countries benefit

Figure 3: Fragmentation and globalization equilibria in the unipolar world



Note: The figure depicts the regions in which the fragmentation equilibrium (red) and globalization equilibrium (blue) exist in the (η_U, α)-space.

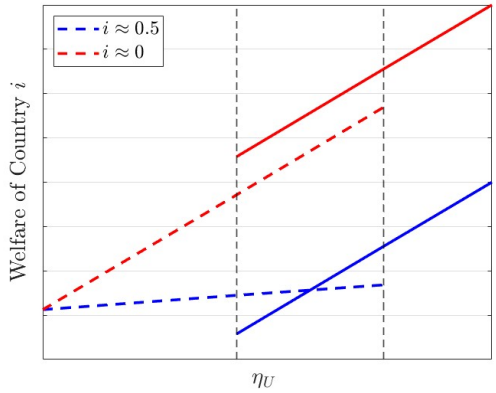
from the transition to a globalized world. When η_U becomes large enough for the globalization equilibrium to exist, country $i \approx 0$ experiences a welfare gain but country $i \approx 0.5$ suffers a welfare loss. How can globalization be an equilibrium even if some countries prefer fragmentation? The reason is simple: a distant country may prefer fragmentation to globalization, but may still prefer to align with the hegemon if all other countries do so. The following Lemma summarizes this discussion.

Lemma 1 *At the threshold* $\eta_U = \frac{\alpha}{\beta T} - 1$*, welfare is higher in the globalization equilibrium than in the fragmentation equilibrium for the hegemon and for small countries* $i \in (-0.25, 0) \cup (0, 0.25)$*. On the other hand, welfare is lower in the globalization equilibrium for small countries* $i \in (-0.5, -0.25) \cup (0.25, 0.5]$*.*

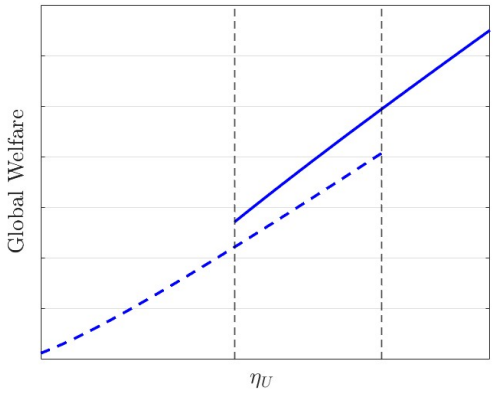
Even though globalization has heterogeneous effects on welfare, it is always beneficial for the world as a whole. This is illustrated in Panel (b) of Figure 4, which depicts global welfare per capita as a function of η_U. The reason why globalization is always beneficial in the aggregate is that strategic complementarities in policies lead to a coordination externality. When a country aligns with another, both countries benefit from the resulting increase in trade. Individual governments, however, internalize only the benefits accruing to their own residents. As a result, fragmentation may persist even when globalization would yield higher aggregate welfare. Conversely, globalization can fail to emerge in equilibrium despite raising global welfare. The following Lemma summarizes this discussion.

Figure 4: Welfare and size of hegemon in the unipolar world

(a) Country welfare and hegemon size



(b) Global welfare and hegemon size



Note: Panel (a) depicts the welfare of countries $i \approx 0$ and $i \approx 0.5$, while Panel (b) depicts global welfare per capita. Dashed (solid) lines represent the fragmentation (globalization) equilibrium.

Lemma 2 *If* $\eta_U \in \left(\frac{1}{2} \cdot \left(\frac{\alpha}{\beta \cdot T} - 1\right), \frac{\alpha}{\beta \cdot T}\right]$, *the fragmentation equilibrium exists even though globalization would yield higher global welfare. Moreover, whenever globalization is an equilibrium it yields higher global welfare than fragmentation.*

This analysis delivers four central insights. First, globalization emerges endogenously from the interaction between heterogeneous policy preferences and strategic complementarities in trade. Second, larger hegemons are better trading partners, prompting alignment and increasing trade. A larger hegemon thus facilitates the transition from a fragmented world economy, in which each country chooses its preferred policy, to a globalized world economy, in which all countries align with the hegemon. Third, while globalization is globally desirable whenever it arises, decentralized policy choices may nevertheless sustain inefficient fragmentation because governments fail to internalize the positive spillovers created by policy alignment. Finally, globalization has heterogeneous welfare effects: countries whose preferences are far from those of the hegemon may be worse off than in a fragmented world. But even these countries end up aligning with the hegemon once the rest of the world has done so.

3.2 Strategic interaction in the multipolar world

We now introduce a second hegemon. In addition to the incumbent hegemon U, located at $h_U = 0$, suppose there is a rising hegemon C, located at $h_C = 0.5$. Throughout this section we assume that $\eta_U > \eta_C$, so that U remains the larger economy.

The emergence of a second hegemon fundamentally changes the nature of the problem. In the unipolar world, globalization was determined by the economic size of a single hegemon. In

the multipolar world, globalization also depends on strategic interaction between competing hegemons. In particular, the rising hegemon can act strategically by setting its policy before small countries move, thereby coordinating expectations on its preferred outcome.

This raises two distinct questions. First, which equilibrium does the rising hegemon prefer? Second, is it sufficiently influential to bring about its preferred outcome? The first question is determined by the trade-off between the gains from globalization and the policy costs of aligning with the incumbent. The second depends on the economic size of the challenger.

Because the incumbent moves first and its preferred policy is 0, it commits to $a_U = 0$. Consequently, the strategic decision concerns only the behavior of the rising hegemon. Since countries move sequentially, the challenger can either commit immediately to its preferred policy or wait until the remaining countries have chosen their actions and coordinate with them ex post. Accordingly, the rising hegemon has three possible strategies:

1. Set its policy early and align with the incumbent ($a_C = 0$) to support globalization.
2. Set its own preferred policy early ($a_C = 0.5$) to coordinate others on fragmentation.
3. Wait, observe the sunspot, and set its policy simultaneously with the small countries.

The first strategy succeeds only if the challenger values globalization despite having to align with the incumbent's preferred policy. The second requires the challenger to be sufficiently large to coordinate expectations around fragmentation. The third reflects the fact that a relatively small challenger may value the option to condition its policy on the equilibrium selected by the sunspot.

These considerations separate naturally into two margins. The first is a *preference margin*: does the challenger prefer globalization or fragmentation? The second is an *influence margin*: conditional on its preferred outcome, is the challenger sufficiently large to implement it? Proposition 3 shows that these two margins jointly determine the equilibrium.

Proposition 3 *Consider a world with two hegemons, U and C, indexed by $h_U = 0$ and $h_C = 0.5$, with sizes η_U and η_C where $\eta_U > \eta_C$. The equilibrium set is characterized as follows: fragmentation, in which each country $i \in W$ sets $a_i^* = i$, and globalization, in which all countries $i \in W$ set $a_i^* = 0$.*

1. *If $\eta_U \leq \frac{\alpha}{\beta \cdot T} - \frac{1}{2}$, then:*
   (a) *If $\eta_C \leq 1 + \eta_U - \frac{\alpha}{\beta \cdot T}$, there are multiple equilibria, fragmentation and globalization.*
   (b) *If $\eta_C > 1 + \eta_U - \frac{\alpha}{\beta \cdot T}$, the unique equilibrium is fragmentation.*

2. *If* $\eta_U > \frac{\alpha}{\beta \cdot T} - \frac{1}{2}$, *then:*

   (a) *If* $\eta_C \leq \frac{\alpha}{\beta \cdot T} - \eta_U$, *there are multiple equilibria, fragmentation and globalization.*

   (b) *If* $\eta_C > \frac{\alpha}{\beta \cdot T} - \eta_U$, *the unique equilibrium is globalization.*

Proposition 3 delivers three main insights. First, an increase in the size of a rising hegemon need not strengthen globalization. The rise of a second hegemon creates strategic conflict between competing centers of power. Second, fragmentation does not arise simply because the challenger exists. Rather, it emerges only when the challenger both prefers fragmentation and is sufficiently influential to coordinate expectations around it. The challenger's size matters not only because it affects gains from trade, but also because it determines whether an early commitment can eliminate the equilibrium it dislikes. Finally, the transition from unipolarity to multipolarity is inherently nonlinear. As the challenger grows, the world may remain globalized for an extended period before suddenly switching to fragmentation once the challenger becomes sufficiently large. The rise of a competing hegemon can therefore generate abrupt changes in the organization of the world economy.

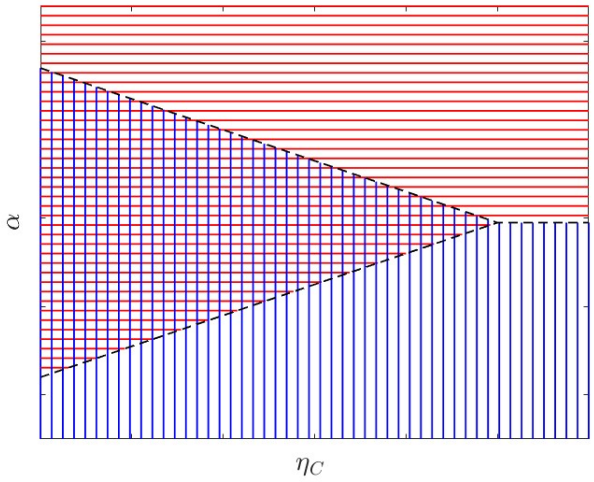
Figure 5 provides a graphical illustration of Proposition 3. The figure is drawn for a given value of η_U.[10] The horizontal dashed line depicts the critical value of α at which $\eta_U = \frac{\alpha}{\beta \cdot T} - \frac{1}{2}$. Above this critical value, C prefers fragmentation to globalization: this corresponds to case 1 in Proposition 3. Below this critical value, C prefers globalization to fragmentation: this corresponds to case 2 in Proposition 3. The figure shows that, as η_C rises, a threshold is reached at which it becomes sufficiently influential to coordinate expectations around its preferred outcome. Beyond this point, the world transitions abruptly to globalization if C's gains from trade with U are high relative to the cost of aligning with U, but to fragmentation otherwise.

The strategic behavior of the challenger also has important welfare implications, as Figure 6 illustrates. Panels (a) and (b) respectively consider configurations in which the rising hegemon prefers globalization and fragmentation. As long as the challenger is too small to influence equilibrium selection, changes in its size only affect welfare by increasing gains from trade.

Once the challenger becomes sufficiently large, it is able to eliminate the equilibrium it dislikes. In panel (a), this implies fragmentation is no longer possible: because α is low, this benefits all countries. In panel (b), this implies globalization is no longer possible: because α is high, this hurts countries with preferences similar to those of the incumbent, while benefiting countries with preferences similar to those of the rising hegemon.

[10] Note that, despite the existence of multiple equilibria, the thresholds in Proposition 3 and thus Figure 5 are independent of the probability $p \in (0, 1)$ with which the globalization equilibrium is played.

Figure 5: Fragmentation and globalization equilibria in the multipolar world



Note: The figure depicts existence of fragmentation (red) and globalization (blue) equilibria in the (η_C, α)-space, for a given value of η_U.

Throughout, we have located the challenger at the point furthest from the incumbent, $h_C = 0.5$. If the challenger's preferences were instead highly aligned with those of the incumbent, the strategic conflict would disappear and an increase in the challenger's size would then strengthen, rather than undermine, globalization. The possibility of fragmentation therefore reflects not multipolarity per se, but disagreement between competing hegemons.[11]

4 Coercive alignment and globalization

Thus far, hegemons influenced other countries only through market forces: countries aligned voluntarily because doing so increased their gains from trade. In practice, however, hegemons also shape international order through coercion, using sanctions or trade restrictions to pressure countries into alignment. We now ask how the possibility of coercion changes the nature of hegemonic globalization.

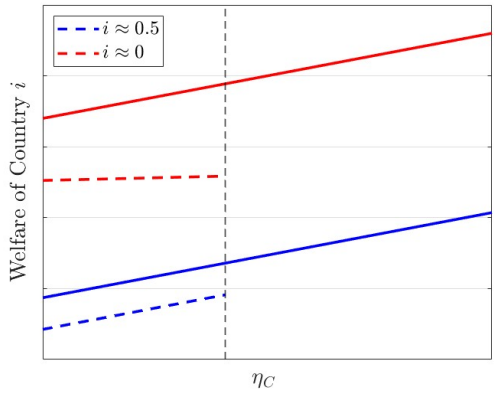
We extend the model in two dimensions. First, countries must establish bilateral trading relationships before they can trade. Second, the incumbent hegemon can commit ex ante to refuse trade with countries that deviate from its preferred policy, or that trade with such countries. This allows the hegemon to condition access to its market on policy alignment. [12]

[11] This is consistent with the observation that the growth of the US during Pax Britannica did not have negative effects on globalization and likely strengthened it. The analysis suggests that the effects of China's rise may differ if its preferred policies are substantially less aligned with those of the incumbent.

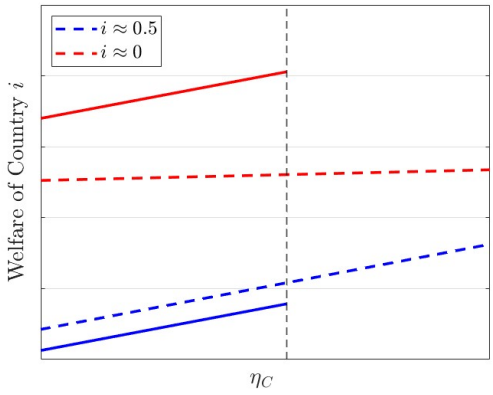
[12] For a formal description of the model with coercion, see Appendix A.2

Figure 6: Welfare and size of the rising hegemon in the multipolar world

(a) Country welfare (low α)



(b) Country welfare (high α)



Note: Panels (a) and (b) depict the welfare of countries $i \approx 0$ and $i \approx 0.5$ as a function of the size of the rising hegemon η_C. Dashed (solid) lines correspond to the fragmentation (globalization) equilibrium.

4.1 Coercion as a tool for alignment

We return to the unipolar economy, in which there is a unique hegemon U, indexed by $h_U = 0$. The use of coercion fundamentally changes the problem faced by small countries. In the baseline model, they decide only which policy to adopt. Under coercion, they also decide whether to belong to the hegemon's trading bloc. Joining the bloc requires adopting the hegemon's preferred policy and refraining from trading with outsiders. Remaining outside preserves policy autonomy but forfeits access to the hegemon and to the countries that join its bloc.

The following proposition characterizes the equilibrium in the event that the hegemon decides to use trade as a tool of coercion.

Proposition 4 *Suppose that hegemon U chooses policy $a_U = 0$ and threatens to sever trade links with any country i that sets $a_i \neq 0$ or that is linked directly or indirectly with any country i' that sets $a_{i'} \neq 0$. In all robust equilibria, a fraction μ of small countries $i \in I$ closest to the hegemon set $a_i = 0$ and trade only with each other and with the hegemon. The remaining fraction $1 - \mu$ of small countries $i \in I$ set $a_i = i$ and trade only among themselves. Moreover,*

1. *An equilibrium with $\mu = 0$ exists if and only if $\eta_U \leq 1 - \frac{\beta}{4}$.*

2. *An equilibrium with $\mu = 1$ exists if and only if $\eta_U \geq \frac{\alpha}{2T} - 1$.*

3. *If $\alpha \geq (4 - \beta) \cdot T$, there are thresholds $\underline{\eta}_U \leq 1 - \frac{\beta}{4}$ and $\bar{\eta}_U \geq \frac{\alpha}{2T} - 1$ such that, for*

$\eta_U \in \left(\underline{\eta}_U, \bar{\eta}_U\right)$, *there exists an equilibrium with* $\mu^* \in (0,1)$ *that is implicitly defined by*

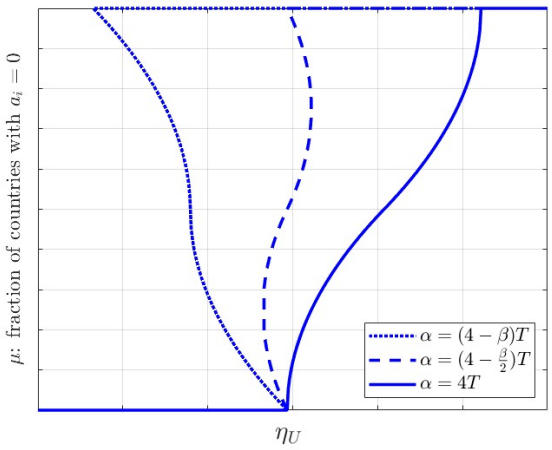
$$\mu^* \equiv \{\mu \in (0,1) : g(\mu^*) = 0, g'(\mu^*) < 0\}$$

where

$$g(\mu) \equiv \begin{cases} (\eta_U + \mu) \cdot T - (1-\mu) \cdot T + \frac{\beta}{4} \cdot T - \beta \cdot \frac{\mu^2}{2} \cdot T - \alpha \cdot \frac{\mu}{2} & \text{if } \mu \leq \frac{1}{2}, \\ (\eta_U + \mu) \cdot T - (1-\mu) \cdot T + \beta \cdot \frac{(1-\mu)^2}{2} \cdot T - \alpha \cdot \frac{\mu}{2} & \text{if } \mu > \frac{1}{2}. \end{cases} \tag{7}$$

The key implication of Proposition 4 is that coercion creates blocs. Conditional on coercion, the equilibrium need no longer take the form of either complete globalization or complete fragmentation. Instead, a subset of countries aligns with the hegemon and trades intensively within its bloc, while the remaining countries preserve their preferred policies and trade only outside the bloc. Figure 7 depicts the share of countries μ that – conditional on coercion – join the hegemon's bloc as a function of its size for different values of α. When α is sufficiently high, the equilibrium under coercion is unique and the share of countries μ that align with the hegemon is increasing in η_U. As α declines, strategic complementarities become relatively stronger and multiple equilibria arise.

Figure 7: Alignment under coercion



Note: The figure depicts, for different values of α, the share of countries that align with the hegemon in the event of coercion.

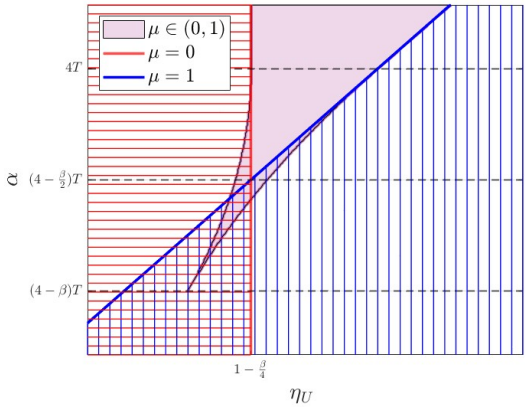
Panel (a) of Figure 8 depicts the set of equilibria, conditional on coercion by U, in the (η_U, α)-space. For any given level of α, the expected share of countries that aligns with the hegemon weakly increases with η_U.[13] For $\alpha > 4 \cdot T$, the equilibrium is unique. When $\alpha \in$

[13] As in all models with multiple equilibria, there are assumptions on equilibrium selection under which such a

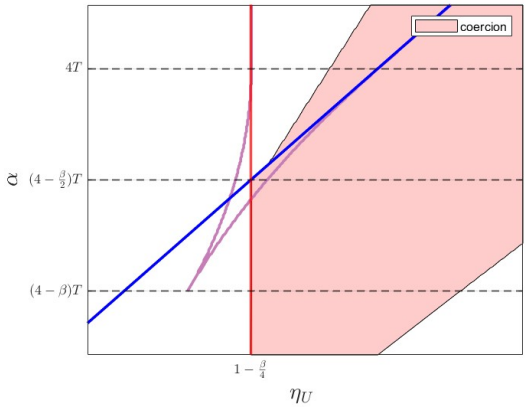
$\left((4-\frac{\beta}{2})\cdot T, 4\cdot T\right)$, there are at most two equilibria but $\mu=0$ and $\mu=1$ cannot both exist for the same set of parameters. When $\alpha \in \left((4-\beta)\cdot T, (4-\frac{\beta}{2})\cdot T\right)$, all types of multiplicity are possible. Finally, for $\alpha < (4-\beta)\cdot T$ there is no equilibrium with $\mu \in (0,1)$.

Figure 8: Equilibria under coercion

(a) Size of hegemon's bloc under coercion



(b) Use of coercion in equilibrium



Note: Panel (a) depicts the share μ of countries that align with the hegemon in equilibrium conditional on coercion. The shaded area in Panel (b) depicts the equilibrium use of coercion by the hegemon.

To determine whether to use trade as a tool of coercion, the hegemon compares the gains and losses of doing so. On the one hand, coercion creates a bloc of highly aligned countries, increasing gains from trade along the intensive margin. On the other hand, coercion eliminates trade with countries that remain outside of the hegemon's bloc, reducing gains from trade along the extensive margin. The net effect may be positive or negative for the hegemon, depending on the share of countries that align with it.

Proposition 5 *Let μ denote the share of small countries $i \in I$ that align with the hegemon if it threatens, and p denote the probability that the globalization equilibrium is played if it does not threaten. Then, the hegemon threatens if and only if*

$$E[\mu] > p + (1-p)\cdot\left(1-\frac{\beta}{4}\right). \tag{8}$$

Panel (b) of Figure 8 shows the hegemon's use of coercion in the (η_U, α)-space under the assumption that, in case of multiplicity, all equilibria are played with the same probability.[14]

statement may not be true (e.g., the globalization equilibrium is not played if the intermediate equilibrium with $\mu \in (0,1)$ exists). The statement is true for "reasonable" assumptions, such as the case in which all equilibria that exist are played with the same probability.

[14]Note that both expectations in Equation 8 depend on the sets of equilibria with and without coercion, respectively, which are in turn affected by the size of the hegemon η_U: this makes comparative statics exercises less general than in the baseline model.

In this case, both sides of Equation 8 are increasing in η_U, so that the benefits of coercion may not be monotonic in the size of the hegemon. When the hegemon is relatively small, coercion is costly: the size of the hegemon's bloc is not very large and the expected gains from trade under coercion are lower than even those in the fragmented equilibrium. At the other extreme, when the hegemon is sufficiently large, globalization is guaranteed even in the absence of coercion. Thus, it is for intermediate sizes of the hegemon that coercion is likely to be used.

In terms of welfare, coercion reverses the result of the baseline model. Whereas decentralized policy choices led to insufficient alignment in Section 3.1, coercion may instead induce excessive alignment. To see why, consider the onset of coercion, when the gains from trade within the bloc are just enough to compensate the hegemon for the lost trade with the rest of the world. It follows that countries that join the bloc must be worse off: although they gain in terms of higher trade with other bloc members, these gains are more than offset by the costs of adopting the hegemon's preferred policy and by the loss of trade with excluded countries. Countries that remain outside the bloc are unambiguously worse off because they lose access to the hegemon and all countries that join its bloc. Consequently, every small country is initially harmed by the hegemon's decision to resort to coercion. The following Lemma summarizes this discussion:

Lemma 3 *At the onset of coercion—that is, when the hegemon is just large enough to use coercion in equilibrium—the welfare of every small country falls.*

Panel (a) of Figure 9 illustrates this result by comparing the welfare of countries closest and farthest from the hegemon, with and without coercion.[15] For country $i \approx 0$, the loss of welfare is negligible, but all countries with $i \neq 0$ suffer a discrete loss. Panel (b) shows that per-capita global welfare also falls. Coercion therefore induces alignment before it becomes socially desirable.

4.2 Bloc fragmentation in the multipolar world: an illustration

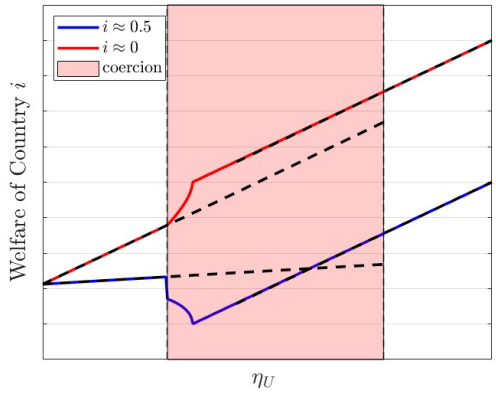
We now extend the analysis of coercion to the case of two hegemons. As in Section 3.2, we assume that there is an incumbent hegemon U at $h_U = 0$ and a rising hegemon C at $h_C = 0.5$. We assume that $\eta_U > \eta_C$, so that only the incumbent hegemon can use coercion.

The interaction between coercion and strategic competition between hegemons generates a rich set of equilibria. Rather than attempting a complete characterization, we focus on a simple example that isolates the main new economic force. The main insight is that coercion may be used by the incumbent to prevent its bloc from fragmenting in the face of a rising hegemon.

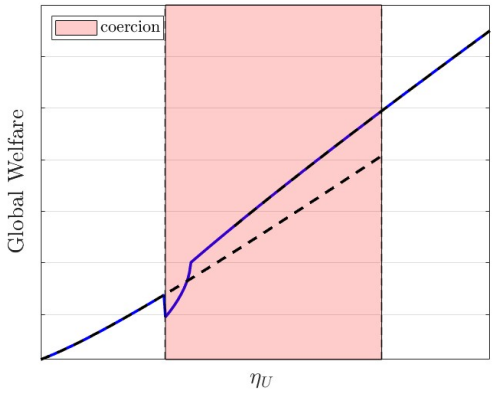
[15] The figure is drawn for $\alpha = 4T$, under which the equilibrium with coercion is unique.

Figure 9: Welfare and size of hegemon

(a) Country welfare and hegemon size



(b) Global welfare and hegemon size



Note: Panel (a) depicts the welfare of countries $i \approx 0$ and $i \approx 0.5$, while Panel (b) depicts global welfare per capita. Solid and dashed lines depict welfare in the model with coercion and in the baseline model, respectively. The shaded area indicates the use of coercion in equilibrium.

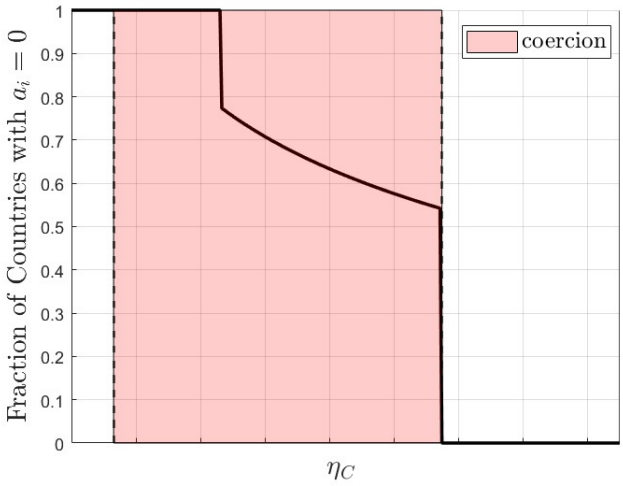
Initially, coercion prompts the rising hegemon to cooperate and stay in the bloc. Once it is sufficiently large, however, the rising hegemon deviates and fragments the bloc in spite of coercion. If the rising hegemon is larger still, moreover, the incumbent abandons the use of coercion altogether and fragmentation prevails.

To illustrate this logic, suppose η_U is relatively high, so that without coercion the fragmentation and globalization equilibria co-exist. Suppose moreover that, in case of multiplicity, the globalization equilibrium is played with probability $p \approx 1$. Figure 10 depicts the share of countries $i \in I$ that set $a_i = 0$ in equilibrium as a function of η_C, while Figure 11 depicts the welfare of countries closest and farthest from U as well as global welfare.

When η_C is small, U does not use coercion because globalization is highly likely without it. In this region, as Figure 10 shows, all countries $i \in I$ set $a_i = 0$ and so does C. At some point, C is large enough to find deviation tempting: in the absence of coercion, it would in fact deviate and set $a_C = 0.5$ early because – by doing so – it would attract sufficiently many countries from the incumbent's bloc. Anticipating this, U resorts to coercion to prevent C from leaving the bloc, thereby preserving globalization. This is why, in Figures 10 and 11, there is no discontinuity in welfare and no change in the share of countries $i \in I$ that set $a_i = 0$ when U starts using coercion.

Once the rising hegemon is large enough, deviation becomes attractive even if the incumbent resorts to coercion. The reason is that, by setting $a_C = 0.5$ early, C attracts enough countries from the incumbent's bloc to compensate for the lack of trade with the bloc itself. At this point, as Figure 10 shows, the fraction of countries $i \in I$ that set $a_i = 0$ falls discretely. C and

Figure 10: Size of incumbent hegemon's bloc and size of rising hegemon



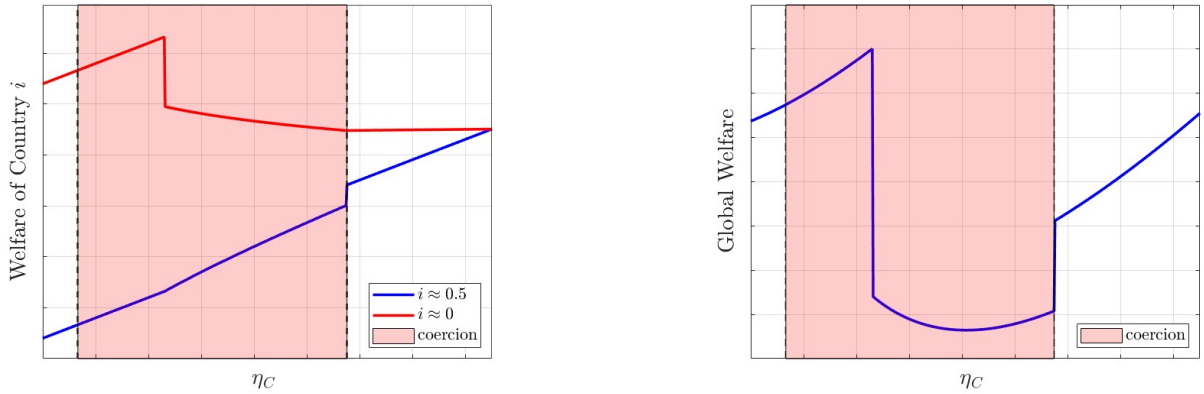
Note: The figure depicts the share of countries that align with the incumbent hegemon. The shaded area indicates the use of coercion in equilibrium.

the countries close to it benefit slightly from the deviation, whereas – as depicted in Panel (a) of Figure 11 – U and the countries close to it suffer significantly from the partial unraveling of the bloc. Panel (b) of Figure 11 shows that the overall effect on global welfare is also negative. As C grows further, U continues to use coercion to preserve what is left of its bloc. In spite of this, the bloc shrinks gradually until C becomes so large that coercion is no longer attractive for U. At this point, the incumbent's bloc unravels fully and gives way to fragmentation, in which all countries trade with each other but trade flows are low.

Figure 11: Welfare and size of rising hegemon

(a) Country welfare

(b) Global welfare per capita



Note: Panel (a) depicts the welfare of countries $i \approx 0$ and $i \approx 0.5$, while Panel (b) depicts global welfare per capita. The shaded area indicates the use of coercion in equilibrium.

Allowing for coercion fundamentally changes the nature of hegemonic globalization. Three

insights emerge. First, the use of coercion allows the hegemon to influence the global equilibrium to its own benefit, "accelerating" alignment relative to the decentralized equilibrium. However, alignment sustained through coercion may reduce global welfare. Second, coercion fosters the formation of blocs. Without coercion, equilibrium results in either full fragmentation or full globalization. However, coercion introduces "intermediate" equilibria, where some countries form blocs and trade intensely within them, while others follow their preferred strategies and trade only with non-members.[16] Third, coercion delays – but cannot ultimately prevent – the transition to fragmentation. Once it becomes large enough, a rising hegemon that prefers fragmentation will achieve this outcome whether the incumbent resorts to coercion or not. [17]

5 Measuring alignment: the Global Treaty Database

To evaluate the two links at the center of our theory – whether hegemons foster alignment and whether alignment fosters trade – we need a measure of international policy alignment. We face two empirical challenges. First, hegemonic transitions are rare, making a long historical horizon essential. Second, policy alignment between states is inherently difficult to measure. The notion of alignment in our model is intentionally broad, encompassing legal, regulatory, institutional, and political coordination across countries. Existing measures either capture only particular dimensions, such as trade agreements or military alliances, or are more distant from the model's notion of policy alignment. UN voting, for example, captures countries' positions on global issues such as the Israel-Palestine conflict, rather than bilateral policy coordination. We address both challenges by reconstructing a global record of international treaties spanning more than two centuries.

Treaties have long served as a central instrument through which states coordinate and harmonize policies across borders (Simmons, 2010). Yet despite their central role in international relations, there is no comprehensive quantitative record of treaties over the long run.

We fill this gap by constructing the Global Treaty Database, covering the near-universe of international treaties concluded between 1800 and 2020. The database provides the first global record of treaty relations across countries, policy domains, and more than two centuries.

[16] This resonates well with Gopinath et al. (2025), who document that world trade appears to be fragmenting along bloc lines: while trade within blocs appears to be rising, trade between blocs appears to be falling.

[17] In this regard, the theory reflects the widely held view that China, while still a rising power, opted to operate within the Western-led international order to facilitate its growth. However, having attained significant economic and geopolitical influence, it is now positioned to challenge the very rules it once followed. As stated by Jones and Yeo (2022): "For two decades, China sought to profit from key arrangements of the global political and economic order. Now... China seeks to subvert these long-standing arrangements... It has also started to propose new arrangements under Chinese diplomatic leadership, starting to seek a role as an ordering power."

5.1 Concepts, sources and data construction

Following standard usage in international law, we use the term "treaty" broadly to include international agreements, conventions, protocols, charters, declarations, and other legally binding instruments that satisfy the formal criteria of a treaty.[18]

Our database builds on existing collections, which typically focus on particular historical periods, countries, or types of treaties. We combine, clean, and systematize these sources into a consistent global database spanning more than two centuries. Appendix B.2 describes how we identify the most authoritative collections for each historical period and harmonize them into a unified country-level dataset (Table A2). Where sources overlap, we combine their information, remove duplicates, and retain the most complete record for each treaty. We restrict the consolidated database to sovereign states and harmonize historical country names and borders to track countries consistently through episodes of state formation, dissolution, and territorial change.

The full database contains 76,849 agreements, of which 22,556 are lending contracts or agreements governing development-aid projects. Because these agreements primarily transfer resources rather than coordinate or harmonize policies, we exclude them from our baseline measure of alignment but retain them in the full database. Our results are robust to including them (Table A5).

Our final sample comprises 54,293 alignment treaties: agreements through which states formally coordinate or harmonize their policies. As shown in Appendix B.4, the large majority are bilateral, and nearly three quarters were concluded after 1945.

To classify treaties by content, we build on the taxonomy of Miles and Posner (2008) and extend it using subject terms from the World Legal Information Institute and the UN Treaty Series, yielding 22 mutually exclusive categories. We use a large language model (GPT-4 Turbo) to assign each treaty to one category. Appendix B.2 describes the procedure and its extensive validation against existing hand-coded datasets and independent classifications by research assistants. The classification reproduces existing collections of trade and military agreements with high accuracy; Appendix Table A3 provides further details on the procedure and categories.

[18] The United Nations defines a treaty, in the generic sense, as a written instrument governed by international law, concluded by states or international organizations with treaty-making power, and intended to create legal rights and obligations. See further definitional details here.

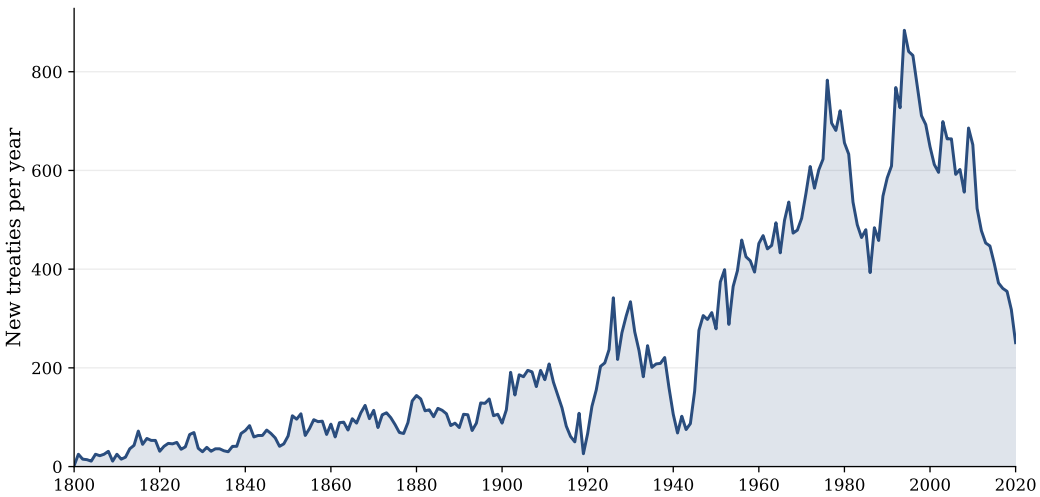
5.2 Two centuries of treaty-making

Figure 12 plots the annual number of treaties signed worldwide. Treaty-making expanded sharply during both the Pax Britannica and the Pax Americana, rising from fewer than five treaties per year before 1815 to around 80 in the 1870s and nearly 200 on the eve of WW1. After collapsing during both World Wars, treaty activity rebounded rapidly after 1945 and reached new peaks in the 1970s and 1990s. Participation also broadened: the share of sovereign states signing at least one treaty rose from below 30% in the 1830s to around 70% before WW1 and nearly 100% after WW2. Including treaties signed by colonies leaves these patterns largely unchanged.

A striking feature of the figure is the sharp decline in treaty-making after 2001, comparable in magnitude to the declines during the World Wars. This pattern does not appear to reflect reporting lags or changes in coverage: it is also present in the UN Treaty Series, national treaty collections, and specialized datasets on trade agreements. The decline is particularly pronounced for multilateral treaties, whose number is now at its lowest level since WW2 (Appendix Figure A3).

These patterns provide quantitative support for recent work documenting the erosion of multilateral cooperation and international law (e.g. Cooley and Nexon, 2020; Goldsmith and Posner, 2021). They are also consistent with a central implication of our theory: periods of hegemonic dominance coincide with broader international policy alignment, while periods of geopolitical fragmentation coincide with its retreat.

Figure 12: Global treaty-making, 1800-2020



Note: Number of newly signed treaties per year.

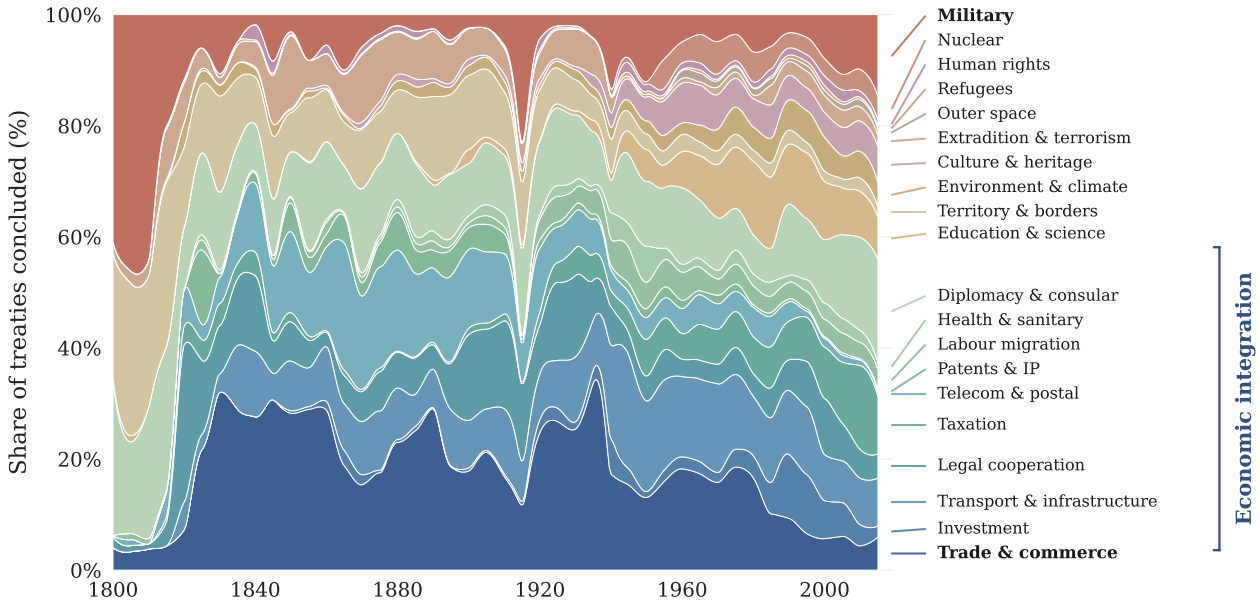
5.3 Treaties and the architecture of economic integration

We next examine the substantive content of treaty-making. Trade theory provides a useful guide for organizing treaties by domain. A key insight from Anderson and van Wincoop (2004) and related work is that barriers to economic integration extend well beyond transportation costs and tariffs. Cross-border exchange is also impeded by information costs, weak contract enforcement, and differences in legal and regulatory regimes. Accordingly, we classify treaty categories as supporting economic integration when they reduce trade barriers or coordinate the broader "behind-the-border" policies and rules governing cross-border exchange. These categories include trade and commerce, diplomacy and consular relations, transport and infrastructure, telecommunications, investment, taxation, legal cooperation, labor mobility, health, and intellectual property.[19] Appendix B.3 discusses the classification and its empirical basis in greater detail.

Figure 13 shows the composition of treaty-making over time. The predominance of economic integration is striking: close to two-thirds of treaties fall into these categories, a share that has remained remarkably stable over two centuries. By contrast, trade agreements and military alliances—the treaty types most commonly studied in the literature—together account for only about 20% of the sample. The database thus reveals a much broader architecture of deep policy integration and the institutional rules underpinning globalization.

[19] This classification is closely related to the empirical literature on deep trade integration; see, for example, Mattoo, Rocha, and Ruta (2020).

Figure 13: Types of treaties, 1800–2020



Note: Share of newly concluded treaties by category, 1800–2020, five-year averages. Trade and commerce and military treaties are highlighted in bold. Economic-integration categories account for 66 percent of classified treaties across 200 years (see Table A3 in Appendix B.3).

6 Hegemonic globalization in the data

We now turn to the empirical predictions of the theory using two centuries of data on treaties, hegemony, and trade. Section 6.1 examines whether international policy alignment shifts toward hegemons as their power rises, both globally and within country pairs. Section 6.2 then asks whether greater alignment predicts more bilateral trade and whether this effect extends beyond direct ties: do countries aligned with the same hegemon also trade more with one another?

6.1 Do hegemons induce alignment?

This section explores whether hegemons induce alignment. We first trace treaty realignments during three major shifts in the global distribution of power. We then turn to panel regressions that quantify the relationship between hegemony and treaty-making, first at the aggregate level and then within country pairs.

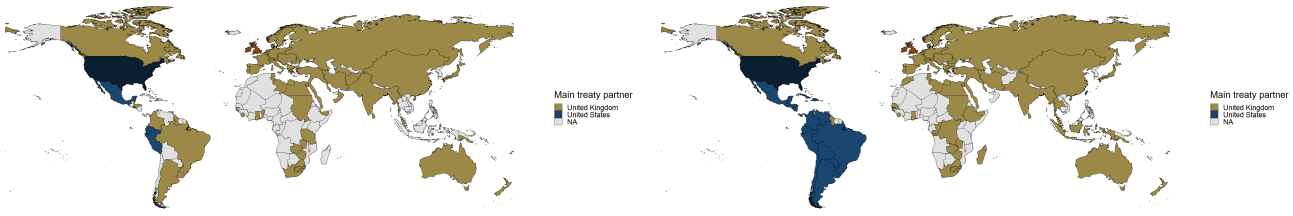
Historical episodes of realignment

We begin with three episodes of global power shifts: the rise of the US relative to the UK between the 1870s and the 1900s, the relative decline of the Soviet Union between the 1950s and the 1970s, and the rise of China relative to the US between the 1990s and the 2010s. For each country and episode, we count the treaties it signs with the two leading hegemons over the relevant decades. We then color each country by the hegemon with which it signs more.[20] The resulting maps (Figures 14–16) are purely descriptive, but they illustrate the mechanism emphasized by the theory: countries redirect their policy alignment, as captured by treaty-making, toward rising hegemons.

Figure 14 depicts global treaty alignment with the US and the UK in the 1870s and 1900s. Over this period, the US rose rapidly in global power to match that of the UK. At the same time, many countries shifted their treaty-making from the UK toward the US, most notably in South America, which moved decisively into the US treaty orbit.

Figure 14: Global treaty alignment – US vs. UK

Panel A: 1870-1879 Panel B: 1900-1909



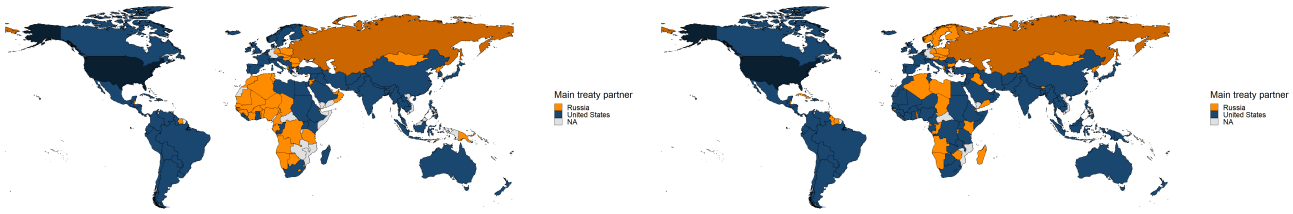
Notes: Each country is colored by whether it signed more treaties with the US (blue) or the UK (brown) in the decade; grey ("NA") if it signed no treaties with either (mostly colonies).

Figure 15 focuses on the Cold War, a period of intense rivalry between the United States and the Soviet Union. In the 1950s, treaty alignment was roughly divided between the two hegemons. By the 1970s, as the Soviet Union's relative power waned, alignment had shifted markedly toward the United States, especially in Africa.

[20] In the few cases where a country has signed the same number of treaties with both hegemons in a decade, we use the last (most recent) treaty to assign alignment.

Figure 15: Global treaty alignment – US vs. Soviet Union

Panel A: 1950-1959 Panel B: 1970-1979

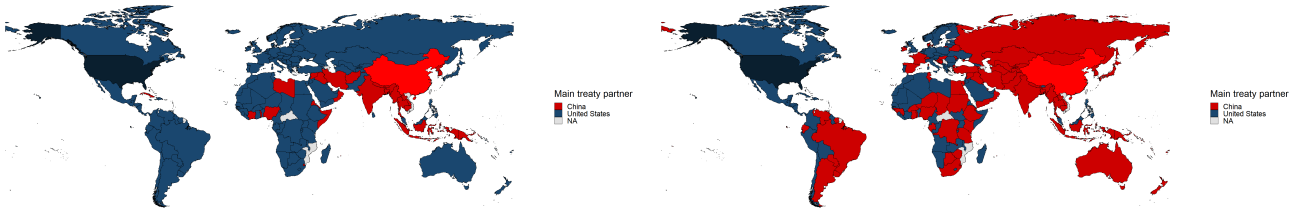


Notes: Each country is colored by whether it signed more treaties with the US (blue) or the Soviet Union (orange) in the decade; grey ("NA") if it signed no treaties with either.

As a third case study, Figure 16 documents the pronounced shift in treaty alignment from the United States toward China since the 1990s. After the fall of the Berlin Wall, the US was the dominant treaty partner across much of the world. By the 2010s, however, large parts of the global map had switched from blue (US) to red (China), especially across the Global South.

Figure 16: Global treaty alignment – US vs. China

Panel A: 1990-1999 Panel B: 2010-2019



Notes: Each country is colored by whether it signed more treaties with the US (blue) or China (red) in the decade; grey ("NA") if it signed no treaties with either.

Econometric evidence

The historical case studies illustrate that countries tend to redirect their policy alignment toward rising hegemons. We now evaluate this mechanism systematically by examining the relationship between treaty alignment and hegemonic power over the past two centuries.

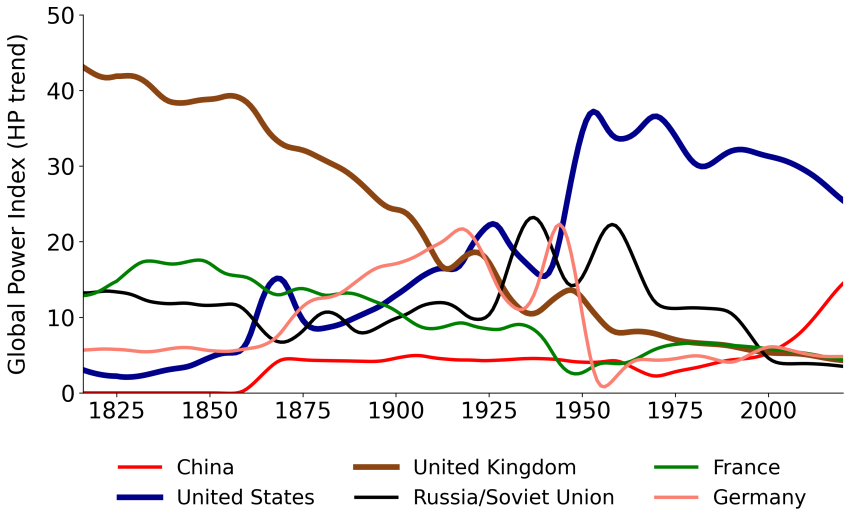
To measure hegemonic power over time, we use the Global Power Index (GPI) of Moyer et al. (2024). As discussed above, we think of a hegemon as a leading power with the capacity to influence other states (Gunitsky, 2017). The GPI provides a useful empirical proxy for this concept, as it combines dozens of time series on economic size, military capabilities, and technological leadership into a single annual index of global power by country, scaled from 0 to

100. The GPI has two main advantages. First, it captures a broad range of power indicators, including technological capabilities, rather than relying on a narrow set of material proxies, such as troop size and steel production, as in the Correlates of War CINC index. Second, it offers broad historical coverage, spanning up to 188 countries from 1816 to 2022.

Using this index, we define a hegemon as a country that accounts for at least 10% of global power. This threshold is in line with Moyer et al. (2024) and yields a sample that closely matches the standard classification of leading powers in the political science and history literature (e.g. Gunitsky, 2017; Kennedy, 1987).[21] In the analysis, we use this definition as our baseline, but also report robustness to alternative definitions of hegemony (e.g. UK and US only).

Figure 17 plots the long-run GPI trends of the most powerful countries (those crossing the 10% threshold at some point since 1815). To remove short-term fluctuations, e.g. due to wars, we separate cycle from trend using the Hodrick–Prescott filter.[22] The figure traces the rise and fall of hegemons emphasized by Kennedy (1987) and others: British predominance through the nineteenth century, its decline alongside the rapid rise of the United States, the emergence and subsequent decline of the Soviet Union, and the recent rise of China.

Figure 17: Share of global power, 1815-2020



Note: Data from Moyer et al. (2024) Global Power Index Database. The GPI is an index that combines a broad range of military, technological, diplomatic and economic indicators of power. We show HP-filtered trends in country-level power indices over time.

[21] The 10% GPI threshold identifies the United States, Russia/the Soviet Union, the United Kingdom, France, Germany, and, more recently, China as hegemons at some point since 1815. This closely corresponds to the classic set of "great powers" emphasized in historical accounts such as Kennedy (1987).

[22] We set the smoothing parameter to 6.25, as the GPI data are annual.

Using the GPI, we examine the relationship between hegemonic power and treaty alignment in two ways. At the aggregate level, we ask whether hegemonic status is associated with a larger share of global treaty-making and with being the main treaty partner of more countries, conditional on economic size. At the dyadic level, we ask whether countries sign more treaties with a partner when that partner is a hegemon, again controlling for the partner's economic size. The aggregate regressions capture the concentration of alignment around hegemons, while the dyadic regressions assess whether this pattern also appears within country pairs over time.

Table 1: Hegemons and treaty-making – aggregate and dyadic regressions

	Aggregate		***Dyadic***	
Dependent variable:	(1) Share of treaties worldwide signed by country i (%)	(2) Share of countries with country i as their main treaty partner (%)	(3) Number of treaties country i signs with j	(4) Country j is i's main treaty partner
Country i is hegemon (country i's GPI>10)	6.271***	6.598***		
	(1.699)	(2.431)		
Partner j is hegemon (partner j's GPI>10)			0.258***	0.055**
			(0.075)	(0.024)
Estimator	OLS	OLS	PPML	OLS
Unit of observation	country × decade		country pair × decade	
Controls	country i's share of world (i)population, (ii)exports		partner j's share of world (i)population, (ii)exports	
Fixed effects	country, decade		country i×decade, pair	
Sample	all countries		pairs with ≥ 1 treaty	
Observations	1,492	1,492	19,514	19,514

Note: Columns (1)–(2) estimate, at the country–decade level, $y_{it} = \beta H_{it} + \gamma' X_{it} + \alpha_i + \delta_t + \varepsilon_{it}$ by OLS with robust standard errors, where H_{it} indicates whether country i is itself a hegemon, X_{it} is i's share of world population and exports, and α_i, δ_t are country and decade fixed effects. In Column (1) y_{it} is i's share of all treaties signed worldwide, while in Column (2) it is the share of the world's countries whose largest treaty partner is i. Columns (3)–(4) estimate, at the directed pair–decade level, $T_{ijt} = \beta H_{jt} + \gamma' S_{jt} + \alpha_{it} + \phi_{ij} + \varepsilon_{ijt}$ with standard errors clustered by pair, where H_{jt} indicates whether the partner j is a hegemon, S_{jt} is the partner's world share of population and exports, α_{it} are country i×decade fixed effects, and ϕ_{ij} are country-pair (dyad) fixed effects. In Column (3) T_{ijt} is the number of treaties i signs with j, estimated by PPML, while in Column (4) it is an indicator for j being i's largest treaty partner, estimated by OLS. Columns (3)–(4) use the ordered pairs (i, j) that sign at least one treaty in the decade, since a pair that never signs has no treaty count and no largest partner. The pair fixed effects ϕ_{ij} absorb time-invariant bilateral gravity (distance, language, contiguity) and the country i×decade effects α_{it} absorb i's size; partner j×decade fixed effects would absorb H_{jt} and are therefore not included. We control, however, for partner j's share of world exports and its share of world population. $^{***}p < 0.01$, $^{**}p < 0.05$, $^{*}p < 0.10$.

Table 1 reports both sets of estimates. Columns 1–2 use a country–decade panel, while Columns 3–4 use a directed country-pair–decade panel. At the aggregate level, hegemon status is strongly associated with a country's position in the global treaty network. Conditional on its shares of world population and exports, a hegemon accounts for 6.3 percentage points more of global treaty-making (Column 1) and is the main treaty partner of 6.6 percentage points more countries (Column 2). These magnitudes are substantial: the average country accounts

for only about 3% of treaties signed worldwide.

The dyadic estimates show a similar pattern within country pairs over time. Conditional on country-pair fixed effects and the partner's shares of world population and exports, countries sign about 29% more treaties with a partner when that partner is a hegemon (Column 3). Hegemon status is also associated with a 5.5 percentage point higher probability of being the country's main treaty partner (Column 4). The estimates are robust to alternative measures of hegemonic power, including the continuous GPI share, and also hold on the extensive margin of treaty formation (Appendix Table A4).

Taken together, the evidence is consistent with the model's mechanism, in which international policy alignment becomes increasingly concentrated around hegemonic states. This relationship appears both in the global structure of treaty-making and within country pairs over time, and is not accounted for by differences in economic size alone.

6.2 Does alignment foster trade?

We now ask whether policy alignment predicts bilateral trade, conditional on the usual gravity forces. To do so, we combine our treaty data with bilateral trade data from 1830 to 2020 and estimate a gravity model by PPML (Santos Silva and Tenreyro, 2006). The dependent variable is annual exports in current US dollars, and the specifications include standard gravity controls and fixed effects.

Trade data are drawn primarily from TradeHist, complemented by RICardo for the nineteenth century and by IMF DOTS and World Bank data after 2015 (see Appendix Table A1). We harmonize historical country definitions using GeoPolHist. The estimation sample includes all countries and territories for which bilateral trade data are available, with no population or sovereignty threshold. It therefore includes small states and, in the historical period, colonial territories. We control throughout for colonial relationships, which are absorbed by country-pair fixed effects in the saturated specifications.

Our baseline measure of alignment is the number of treaties signed between two countries over the previous 20 years, capturing the recent *flow* of alignment. Treaties can also be viewed as an accumulated *stock* of past commitments that persist but may gradually lose relevance. To capture this dimension, we construct treaty stocks using the perpetual-inventory method familiar from the measurement of capital: newly signed treaties add to the stock, while older agreements depreciate over time. Specifically, we consider the cumulative stock of treaties since independence (or the beginning of the sample) and perpetual-inventory stocks with different depreciation rates. Appendix B.6.2 develops the construction and reports results for annual

depreciation rates ranging from 1% to 20%. The treaty–trade relationship is robust across these alternative measures.

Alignment and bilateral trade: gravity results

Policy alignment is strongly associated with bilateral trade flows. Column 1 of Table 2 shows this association when alignment between any two countries is proxied by the number of treaties signed between them over the preceding 20 years. The result is remarkably robust. Both economic and non-economic treaties are significantly associated with trade, but the effect of the economic-integration treaties is about twice as large (Columns 2 and 3). It also holds when alignment is measured using the cumulative stock of treaties rather than recent agreements (Column 4), and when older treaties are allowed to depreciate over time (Column 5). Appendix B.6 shows results for a battery of robustness checks and benchmarking exercises.

Table 2: Treaties and bilateral trade - main gravity model results

Dep. var.: bilateral exports								
	Full sample: 1830–2020						Pre-WW1	Post-WW2
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Treaties (newly signed) (sum of past 20 years, log)	0.251*** (0.087)					0.104*** (0.027)	0.102*** (0.036)	0.104*** (0.028)
Economic integration (sum of past 20 years, log)		0.380*** (0.064)						
Non-economic (sum of past 20 years, log)			0.160** (0.071)					
Treaties stock (total treaties, log)				0.436*** (0.067)				
Treaties stock (Yearly depreciation 5%, log)					0.379*** (0.108)			
Distance (Log)	-0.698*** (0.030)	-0.690*** (0.026)	-0.713*** (0.029)	-0.670*** (0.028)	-0.685*** (0.031)			
Common Language	0.186*** (0.060)	0.163*** (0.061)	0.184*** (0.061)	0.152** (0.061)	0.187*** (0.060)			
Common Border	0.530*** (0.062)	0.528*** (0.059)	0.536*** (0.062)	0.511*** (0.060)	0.517*** (0.062)			
Colonial Relationship	2.162*** (0.342)	2.220*** (0.335)	2.157*** (0.345)	2.229*** (0.337)	2.164*** (0.339)			
Country-year FE	Y	Y	Y	Y	Y	Y	Y	Y
Country-pair FE	N	N	N	N	N	Y	Y	Y
Observations	1,198,284	1,198,284	1,198,284	1,198,284	1,198,284	1,191,034	53,676	1,069,315
Pseudo R^2	0.943	0.944	0.943	0.944	0.944	0.988	0.976	0.988

Note: Column (1) presents the baseline model, using the number of newly signed treaties over the past 20 years. Columns (2) and (3) disaggregate treaties into economic-integration and non-economic categories, respectively. Column (4) uses the total stock of treaties, while Column (5) applies a 5% annual depreciation rate to the treaty stock between countries, thus assuming a treaty lifespan of 20 years. Columns (7) and (8) show results for the pre-WW1 (1830-1913) and post-WW2 (1946-2020) eras. All specifications include exporter-year and importer-year fixed effects, while in Columns (6)–(8) we additionally include country-pair fixed effects.

The magnitude of the estimated relationship is economically large. Consider a country mov-

ing from the 25th to the 75th percentile of treaties signed with the US in 2010—from about 25 to 47 treaties over the preceding 20 years. This is roughly equivalent to moving from Ethiopia to Belgium or Austria in terms of treaty engagement with the US. Based on the coefficient in Column 1, such a shift is associated with a 17% increase in bilateral trade.[23]

To address concerns about omitted bilateral factors, Columns 6 to 8 add country-pair fixed effects while retaining exporter-year and importer-year fixed effects to account for multilateral resistance. The treaty coefficient remains positive and significant, although smaller than in the baseline specification (Column 6). The result holds separately in the pre-WW1 and post-WW2 samples (Columns 7 and 8). We also estimate a first-difference specification, regressing 10-year changes in bilateral trade on treaties signed by each country pair over the same period and thus exploiting only within-pair variation. The results remain qualitatively unchanged (Column 3 in Table A5).

The findings in Table 2 are not driven by trade policy. Table 3 shows that the relationship remains after controlling for: (i) bilateral trade agreements (available since the 1830s; see Appendix B.5); (ii) regional trade agreements (available after WW2); (iii) WTO membership; and (iv) bilateral tariffs (available from Feodora Teti since 1988). All variable definitions and data sources are reported in Appendix Table A1.

The relationship is also robust to alternative measures of treaty-based alignment (Table A5). The estimated coefficients are similar when bilateral and multilateral treaties are considered separately and when alignment is measured by a binary indicator rather than the number of treaties signed.[24] The result also survives controls for widely used proxies of international alignment, including preferential trade agreements, military alliances, UN voting similarity, and common regime type (Table A6). Treaty alignment remains positive and statistically significant throughout, with little change in the coefficient across specifications. Our treaty measure therefore captures dimensions of alignment that go well beyond these existing proxies.

Taken together, these results show that countries that are more closely aligned trade substantially more with one another. Crucially, this relationship extends beyond trade policy: it remains after controlling for tariffs and trade agreements and is also present for non-economic treaties. The findings therefore support the broader mechanism at the center of our theory—that policy alignment across legal, regulatory, and institutional domains facilitates cross-border exchange.

[23]The move from 25 to 47 treaties raises the log treaty measure by $\ln(47) - \ln(25) = 0.63$; with the Column 1 coefficient of 0.251, bilateral exports change by $(47/25)^{0.251} - 1 = 0.17$, or about 17%.

[24]In the latter case, simply signing at least one treaty during the previous twenty years is associated with approximately 7% higher bilateral trade.

Table 3: Treaties and trade – controlling for tariffs and trade agreements

Dep. var.: bilateral exports							
	1830–2020	1946–2020		1988–2020			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Treaties	0.105***	0.102***	0.102***	0.067***	0.063**	0.064**	0.060**
(sum of past 20 years, log)	(0.027)	(0.028)	(0.028)	(0.028)	(0.027)	(0.027)	(0.026)
Preferential Trade Agreements	0.062***	0.056***	-0.018	-0.013	-0.013	-0.011	-0.014
(=1 if joint PTA)	(0.018)	(0.018)	(0.019)	(0.021)	(0.020)	(0.020)	(0.020)
Regional Trade Agreements			0.167***	0.086***	0.088***	0.087***	0.042
(=1 if joint RTA, data since WW2)			(0.026)	(0.027)	(0.027)	(0.027)	(0.026)
WTO					0.251**	0.253**	0.234*
(=1 if both in WTO)					(0.122)	(0.121)	(0.128)
Tariffs							-1.993***
(bilateral, log, data available since 1988)							(0.357)
Country-year FE	Y	Y	Y	Y	Y	Y	Y
Country-pair FE	Y	Y	Y	Y	Y	Y	Y
Observations	1,191,034	1,069,315	1,069,315	592,226	592,226	566,399	566,399
Pseudo R^2	0.988	0.988	0.988	0.990	0.990	0.990	0.990

Note: This table builds on our most demanding gravity specification shown in Column 6 of Table 2. Columns 1 and 2 add a dummy for bilateral preferential trade agreements (PTAs) that is available for the entire sample period 1830–2020. Columns 3 and 4 add regional trade agreements, for which data is available after WW2. Columns 5-6 add a dummy for WTO membership. Finally, Column 7 includes a measure of bilateral tariffs using data provided by Feodora Teti, which is available from 1988 onwards. All variable descriptions and data sources are presented in Appendix Table A1.

Timing and dynamics of alignment and trade

The gravity results show that countries that are more closely aligned trade more with one another, but they do not reveal whether alignment precedes trade or follows it. Appendix B.6 provides historical and econometric evidence on this timing. First, during major episodes of integration, including Western Europe after WW2 and Eastern Europe after 1990, treaty-making accelerated before trade took off. Second, when past and future treaty activity are included jointly in the gravity regression, lagged treaties are strongly associated with current trade, whereas future treaties are not (Table 4). Both patterns are consistent with alignment preceding trade, although they do not establish causality.

Table 4: Treaties as predictors of trade flows

Dep. var.: bilateral exports			
	1830–2020		By decade
	(1)	(2)	(3)
New Treaties	0.102***		
(sum of past 20 years, log)	(0.027)		
Lagged Treaties		0.069***	0.048***
(sum of 10–20 years ago, log)		(0.023)	(0.012)
Treaties		0.051**	0.030**
(sum of past 10 years, log)		(0.021)	(0.014)
Lead Treaties		0.019	0.011
(sum of next 10 years, log)		(0.013)	(0.013)
Country-year FE	Y	Y	Y
Country-pair FE	Y	Y	Y
Observations	1,191,034	1,045,188	175,515
Pseudo R^2	0.988	0.988	0.992

Note: Column 1 replicates the baseline Column 6 of Table 2. In Column 2, we include lagged and lead treaty variables, capturing treaties signed in the previous and subsequent decades, respectively. In Column 3 we collapse the data by decade using 10-year intervals for both trade and treaty activity.

Finally, following Boehm, Levchenko, and Pandalai-Nayar (2023), we use local projections to trace the evolution of bilateral trade following treaty-making; the method is developed in Appendix B.6. The estimated trade elasticity rises gradually over roughly a decade and eventually converges to our static gravity estimate. The local projections thus characterize the dynamics of the treaty–trade relationship and confirm the magnitude of the long-run association.

Hegemonic alignment and third-country trade

A distinct implication of the theory is that the effects of alignment extend beyond the bilateral relationship with the hegemon. Countries that align with a hegemon also become more aligned with other countries that are themselves aligned with the same hegemon. As a result, alignment should foster trade not only with the hegemon itself, but also among members of the same bloc.

To examine this implication empirically, we construct measures of US alignment based on treaties signed with the United States over the previous twenty years. We then ask whether countries that are more closely aligned with the US also trade more with other countries that are themselves closely aligned with the US, controlling for bilateral treaty intensity as well as country-year and country-pair fixed effects.

Table 5 provides strong support for this implication. In Column 1, US alignment is measured

continuously as the log number of treaties signed with the United States during the previous twenty years. The positive interaction coefficient implies that two countries trade more with one another when both are closely aligned with the US, even after controlling for the treaties signed directly between them.

Table 5: Treaties and trade - the role of hegemonic alignment

Dep. var.: bilateral exports				
	Full sample, 1830–2020			
	(1)	(2)	(3)	(4)
US treaties, log sum past 20 years (exporter) × US treaties, log sum past 20 years (importer)	0.020** (0.009)			
US alignment dummy (exporter) × US alignment dummy (importer)		0.104*** (0.036)		
US nonalignment dummy (exporter) × US alignment dummy (importer)			-0.104*** (0.038)	
US alignment dummy (exporter) × US nonalignment dummy (importer)				-0.102*** (0.039)
Treaties between exporter & importer (log, 20 years)	0.154*** (0.051)	0.102*** (0.033)	0.102*** (0.033)	0.102*** (0.033)
Country-year FE	Y	Y	Y	Y
Country-pair FE	Y	Y	Y	Y
Observations	1,191,034	1,191,034	1,191,034	1,191,034
Pseudo R^2	0.988	0.988	0.988	0.988

Note: All regressions include exporter-year, importer-year and country-pair fixed effects and use the full sample, 1830–2020, which offers the necessary variation to test for indirect effects. Column (1) includes an interaction term of the number of treaties that each country (importer and exporter) signed with the US in the preceding 20 years (log). Column (2) interacts dummies for US alignment of each country (exporter and importer). The dummies take the value of 1 if the share of treaties signed with the US is above the 66^{th} percentile of all country shares in the preceding 20 years. Columns (3) and (4) add a US non-alignment dummy that takes the value of 1 if the share of treaties signed with the US is below the 66^{th} percentile of all country shares in the preceding 20 years.

Column 2 reaches the same conclusion using a discrete measure of alignment. Countries are classified as US-aligned whenever the share of their recent treaties signed with the United States exceeds the 66th percentile of the annual distribution. Again, trade is significantly higher between pairs of countries that are both strongly aligned with the US. Columns 3 and 4 examine whether countries with opposite alignment patterns trade less with one another. We define a country as non-aligned whenever the share of treaties signed with the United States lies below the 66th percentile of the annual distribution. Regardless of whether non-alignment is measured for the exporter or the importer, the interaction between aligned and non-aligned countries is negative and statistically significant, indicating that countries belonging to different geopolitical spheres trade less with one another.

Taken together, these results provide support for the indirect effects of alignment implied by the theory. Countries that align more closely with the hegemon trade more not only with the hegemon itself, but also with other countries that are similarly aligned. In this sense, the effects of alignment extend beyond the bilateral relationship.

These findings also strengthen the interpretation of the previous gravity results. Unlike the bilateral regressions, the source of variation here is not the degree of alignment between the exporter and importer, but rather each country's alignment with the hegemon. The positive interaction therefore implies that countries trade more when they are more aligned "indirectly", i.e., jointly integrated into the same geopolitical bloc, even after controlling for the bilateral treaties signed directly between them. This makes it more difficult to interpret the correlation between alignment and trade as arising solely from bilateral reverse causality, and provides additional support for the view that policy alignment itself facilitates international exchange.

7 Concluding remarks

This paper develops a new framework to understand how hegemonic power shapes globalization. The central idea is simple. Countries differ in their preferred policies, yet cross-border trade is facilitated when those policies are more closely aligned. Because access to large markets is valuable, countries have incentives to align with hegemons. As a result, changes in the global distribution of power reshape patterns of international alignment, which in turn influence the extent and direction of international trade.

To evaluate this mechanism, we construct the Global Treaty Database, a new dataset covering the near-universe of international treaties signed over the past two centuries. We show that treaty-based alignment is economically meaningful: countries that sign more treaties with each other trade more with one another, treaty-making tends to precede major episodes of trade integration, and countries that sign more treaties with the same hegemon also trade more with each other. We further show that countries disproportionately direct their treaty activity toward rising hegemons, consistent with the central equilibrium prediction of the model.

Taken together, the theoretical and empirical results suggest that globalization is shaped not only by technological change or declining transportation costs, but also by institutional and policy convergence. As some hegemons decline and new ones emerge, countries reorganize their international relationships, with important consequences for the pattern of global economic integration.

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Online Appendix

Hegemonic Globalization

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A Theoretical appendix A2

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A Theoretical Appendix

A.1 Concept of robustness

Our concept of robustness captures the notion that the best response of individual agents should not, on average, be too sensitive to deviations by a small mass of agents from their equilibrium strategies. The following definition formalizes this intuition.

Definition 2 (Robustness) *Let $\{a_i^*\}$ denote an equilibrium of the game. Consider a sequence of "faulty" strategy profiles, where faulty profile n is given by $\{a_i^n\}$ and let ε^n denote the mass of countries for which $a_i^n \neq a_i^*$, i.e. $\varepsilon^n = \int_I \mathbb{I}_{\left[a_i^n \neq a_i^*\right]} \cdot di$. Let the distance between any two profiles $\{a_i\}$ and $\{a_i'\}$ be $\int_I d\left(a_i, a_i'\right) \cdot di$. Let $\{a_i^{*n}\}$ denote the profile of individual best responses to faulty profile n, i.e. $a_i^{*n} = argmax_{a_i} U_i\left(a_i, \{a_j^n\}_{j \neq i}\right)$. Equilibrium $\{a_i^*\}$ is robust if there does not exist any sequence of faulty profiles, with $lim_{n\to\infty}\varepsilon^n = 0$ such that $lim_{n\to\infty} \int_I d\left(a_i^{*n}, a_i^*\right) \cdot di > 0$.*

A.2 Proofs

Proof of Proposition 1. Given the set of policies $\{a_i\}_{i\in W}$, a resident of country i takes the delivered price of variety (j,s), $p_{js}^i = \tau_{ij}$, as given. The first-order condition for consumption of each differentiated variety yields

$$c_{js}^i = \chi^{\sigma-1}(\tau_{ij})^{-\sigma}.$$

Because the endowment of the homogeneous good is sufficiently large, the non-negativity constraint on its consumption does not bind. The budget constraint therefore implies

$$m^i = \omega - \int_{j\in I} \chi^{\sigma-1}(\tau_{ij})^{1-\sigma}\, dj - \sum_{j\in H} \int_0^{\eta_j} \chi^{\sigma-1}(\tau_{ij})^{1-\sigma}\, ds,$$

which is Equation (5). Substituting these demands into Equation (2), using

$$\tau_{ij}^{1-\sigma} = (1 - \beta d(a_i, a_j))^{\gamma(\sigma-1)}$$

and $T \equiv \chi^{\sigma-1}/(\sigma-1)$, gives Equation (6). □

Proof of Proposition 2. Because the hegemon's preferred policy is $h_U = 0$, it sets $a_U = 0$. Consider first the globalization equilibrium. If all other countries set their policy equal to zero, the marginal benefit to country i of moving its policy toward its ideal point is α, while

the marginal cost from reduced alignment with the rest of the world is $(1+\eta_U)\beta T$. Hence, globalization is an equilibrium if and only if

$$(1+\eta_U)\beta T \geq \alpha,$$

or, equivalently,

$$\eta_U \geq \frac{\alpha}{\beta T} - 1.$$

Consider next the fragmentation equilibrium. Under P2, the relevant deviation for a small country is to move its policy toward the hegemon. The marginal policy cost of doing so is α, while the marginal gain from greater alignment with the hegemon is $\eta_U \beta T$. Fragmentation is therefore an equilibrium if and only if

$$\eta_U \beta T \leq \alpha,$$

or

$$\eta_U \leq \frac{\alpha}{\beta T}.$$

There are also intermediate equilibria in which a fraction μ of small countries, evenly distributed over W, set $a_i = 0$, while the remaining fraction $1-\mu$ set $a_i = i$, where

$$(\eta_U + \mu)\beta T = \alpha.$$

Such equilibria are not robust according to Definition 2. At the candidate equilibrium, countries are indifferent between aligning and not aligning; an arbitrarily small perturbation to μ therefore leads all countries to strictly prefer one of the two choices. □

Proof of Lemma 1. Let $x \equiv d(i,0)$ denote country i's distance from the hegemon. Its welfare in the globalization and fragmentation equilibria is, respectively,

$$U_G^i = \omega + (1+\eta_U)T - \alpha x$$

and

$$U_F^i = \omega + \left(1 - \frac{\beta}{4}\right) T + \eta_U (1 - \beta x) T.$$

Thus,

$$U_G^i - U_F^i = \frac{\beta T}{4} - x(\alpha - \eta_U \beta T).$$

At the threshold $\eta_U = \alpha/(\beta T) - 1$, this becomes

$$U_G^i - U_F^i = \beta T \left(\frac{1}{4} - x \right).$$

The difference is positive for $x < 1/4$ and negative for $x > 1/4$, which yields the sets stated in the lemma. □

Proof of Lemma 2. In the fragmentation equilibrium, the average welfare of residents of small countries is

$$\omega + \left(1 - \frac{\beta}{4}\right)(1 + \eta_U)T,$$

while the total welfare of residents of the hegemon is

$$\eta_U \left[\omega + \left(\eta_U + 1 - \frac{\beta}{4} \right) T \right].$$

In the globalization equilibrium, the average welfare of residents of small countries is

$$\omega + (1 + \eta_U)T - \frac{\alpha}{4},$$

while the total welfare of residents of the hegemon is

$$\eta_U \left[\omega + (1 + \eta_U)T \right].$$

It follows that global welfare is higher under globalization if and only if

$$(1 + 2\eta_U)\beta T > \alpha,$$

or

$$\eta_U > \frac{1}{2} \left(\frac{\alpha}{\beta T} - 1 \right).$$

Combining this condition with Proposition 2 establishes both claims in the lemma. □

Proof of Proposition 3. The welfare of the rising hegemon C under fragmentation and globalization is, respectively,

$$U_F^C = \eta_C \left[\omega + \eta_C T + \left(1 - \frac{\beta}{4}\right) T + \left(1 - \frac{\beta}{2}\right) \eta_U T \right]$$

and

$$U_G^C = \eta_C \left[\omega + (1 + \eta_U + \eta_C)T - \frac{\alpha}{2}\right].$$

Therefore, C prefers fragmentation if and only if

$$\eta_U \leq \frac{\alpha}{\beta T} - \frac{1}{2}.$$

Suppose first that C prefers fragmentation. If it moves early and sets $\bar{a}_C = 0.5$, fragmentation is the unique equilibrium if and only if

$$(1 + \eta_U - \eta_C)\beta T < \alpha.$$

When this condition holds, C sets $\bar{a}_C = 0.5$ and the unique equilibrium is fragmentation. If it does not hold, there are multiple equilibria whether C sets $\bar{a}_C = 0.5$ or delays, $\bar{a}_C = D$. If fragmentation is ultimately played, C obtains the same welfare under either choice. If globalization is played, its welfare is

$$\eta_C \left[\omega + (1 + \eta_U + \eta_C)T - \frac{\alpha}{2}\right]$$

when $\bar{a}_C = D$, and

$$\eta_C \left[\omega + \eta_C T + \left(1 - \frac{\beta}{2}\right)(1 + \eta_U)T\right]$$

when $\bar{a}_C = 0.5$. Delaying is optimal whenever

$$(1 + \eta_U)\beta T > \alpha,$$

which holds when $(1 + \eta_U - \eta_C)\beta T \geq \alpha$. This proves part 1 of the proposition. The proof of part 2 is analogous: when C prefers globalization, it aligns early with the incumbent if doing so eliminates fragmentation; otherwise it delays and conditions its policy on the equilibrium selected by the sunspot. □

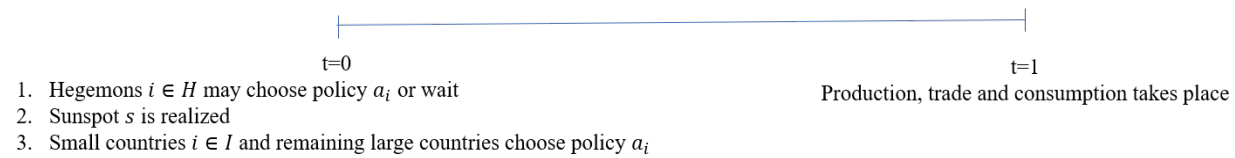
Model structure with coercion. We modify the model in two dimensions. First, at $t = 1$ countries can trade only with their "trading partners." Countries i and j are trading partners if they both establish and maintain a bilateral trading link at $t = 0$. After policies have been chosen, links are created and destroyed in two stages. In the first stage, countries choose at zero cost which links to create, possibly contingent on policies. In the second, or sanction, stage, they choose at zero cost which links to break, again possibly contingent on policies and on the

links created in the first stage. Countries i and j are trading partners if both create the link and neither breaks it. They then trade subject to the friction τ_{ij} in Equation (3); otherwise, they cannot trade. This modification alone does not affect the previous analysis because, regardless of the policies chosen, establishing and maintaining links with all other countries is weakly dominant.[25]

Second, at the beginning of $t = 0$, the largest hegemon U can—in addition to choosing its policy a_U early—commit to sever its trade link with any country i that sets $a_i \neq a_U$ or is linked, directly or indirectly through a chain of trading partners, with any country i' such that $a_{i'} \neq a_U$. We refer to this commitment as a "threat." If U threatens, countries must not only align with U and the other members of its trading bloc; they must also refrain from establishing links with countries outside the bloc. Trade restrictions therefore cannot be bypassed through third countries.[26]

The timeline of the model with coercion is as follows:

Figure A1: Timeline



Proof of Proposition 4. Under P2 and the argument in the proof of Proposition 2, every small country that does not align with the hegemon sets its preferred policy, $a_i = i$. Moreover, if country i aligns with the hegemon, then every country j satisfying $d(j, 0) < d(i, 0)$ must also align. To see this, suppose otherwise and let μ denote the share of small countries aligned with the hegemon. Country i's payoff from alignment must then satisfy

$$(\eta_U + \mu)T - \alpha d(i, 0) > (1 - \beta \bar{d}_i)T(1 - \mu),$$

where $\bar{d}_i$ denotes the average distance between country i and all countries outside the hegemon's bloc. For country j, instead,

$$(\eta_U + \mu)T - \alpha d(j, 0) \leq (1 - \beta \bar{d}_j)T(1 - \mu).$$

Because $\bar{d}_j - \bar{d}_i \leq d(i, 0) - d(j, 0)$, these inequalities cannot both hold under P2.

[25] To rule out unappealing no-trade equilibria, we assume that countries establish and maintain links whenever they are indifferent.

[26] Threats are non-discriminatory: either all countries are threatened on the same terms or none are.

It follows that the bloc consists of the fraction μ of small countries closest to the hegemon. For a given μ, define the gain to the marginal country, located at distance $\mu/2$ from the hegemon, from joining the bloc:

$$g(\mu) \equiv \begin{cases} (\eta_U + \mu)T - (1-\mu)T + \dfrac{\beta T}{4} - \dfrac{\beta \mu^2 T}{2} - \dfrac{\alpha \mu}{2}, & \mu \leq \dfrac{1}{2}, \\ (\eta_U + \mu)T - (1-\mu)T + \dfrac{\beta (1-\mu)^2 T}{2} - \dfrac{\alpha \mu}{2}, & \mu > \dfrac{1}{2}. \end{cases}$$

An equilibrium with $\mu = 0$ exists if and only if $g(0) \leq 0$, or

$$\eta_U \leq 1 - \frac{\beta}{4}.$$

An equilibrium with $\mu = 1$ exists if and only if $g(1) \geq 0$, or

$$\eta_U \geq \frac{\alpha}{2T} - 1.$$

An interior robust equilibrium satisfies

$$g(\mu^*) = 0 \qquad \text{and} \qquad g'(\mu^*) < 0.$$

The second condition guarantees local stability: if the bloc becomes slightly larger, marginal members prefer to leave, whereas if it becomes slightly smaller, marginal outsiders prefer to join. A necessary condition for $g'(\mu) < 0$ at some μ is $\alpha \geq (4 - \beta)T$. Interior equilibria can therefore exist only for intermediate values of η_U: if η_U is too high, $g(\mu) > 0$ for all μ, while if it is too low, $g(\mu) < 0$ for all μ. This establishes the proposition. □

Proof of Proposition 5. If the hegemon uses coercion and a share μ of small countries joins its bloc, the welfare of its residents is

$$\eta_U \left[\omega + (\eta_U + \mu)T\right].$$

Without coercion, its expected welfare is

$$\eta_U \left[\omega + p(\eta_U + 1)T + (1-p)\left(\eta_U + 1 - \frac{\beta}{4}\right)T\right],$$

where p is the probability that globalization is played. Comparing the expected value of the first expression with the second shows that the hegemon threatens if and only if

$$\mathbb{E}[\mu] > p + (1-p)\left(1 - \frac{\beta}{4}\right),$$

which is Equation (8). □

Proof of Lemma 3. Consider the onset of coercion, when the hegemon is just indifferent between using coercion and relying on the equilibrium without it. At this point, the additional gains from greater trade within the bloc exactly offset, for the hegemon, the loss of trade with excluded countries. A small country that joins the bloc obtains the same trade gains as the hegemon per unit of population, but unlike the hegemon it incurs a policy cost whenever $i \neq 0$. It is therefore worse off. A country that remains outside the bloc loses access to the hegemon and to every country that joins its bloc, while continuing to choose its preferred policy; it is therefore also worse off. Hence, at the onset of coercion, the welfare of every small country falls, while the hegemon is indifferent. □

B Empirical Appendix

B.1 Data preliminaries

This section lists the variables used in the empirical analysis, their definitions, coverage, and sources.

Table A1: Variable definitions and data sources

Variable	Description	Source(s)
Bilateral trade flows (1830–2020)	Export flows in nominal USD terms. Data for 1830–2014 are drawn from TradeHist and RICardo; values for 2015–2020 are sourced from the IMF's Direction of Trade Statistics.	Fouquin and Hugot (2016); Dedinger and Girard (2017); IMF DOTS
GeoPolHist (1830–2020)	Country identifiers and their historical evolution.	Dedinger and Girard (2021)
Global Power Index (GPI) (1830–2020)	Continuous variable ranging from 0 to 100 that represents a state's relative power share. HP-filtered trend, using a smoothing parameter of 6.25.	Moyer et al. (2024)
Hegemony dummy 1 (1830–2020)	Binary variable equal to 1 if a country's average HP-filtered Global Power Index (GPI) exceeds 10 in a given decade, using a smoothing parameter of 6.25.	Moyer et al. (2024)
Hegemony dummy 2 (1830–2020)	Binary variable equal to 1 for the UK 1830-1919 and for the US 1940-2020.	Own coding based on historical narratives
Population share (1830–2020)	Average share of the global population accounted for by each country over each decade.	Fouquin and Hugot (2016); World Bank WDI
GDP share (1830–2020)	Average share of global GDP contributed by each country per decade.	Fouquin and Hugot (2016); World Bank WDI
Distance (log) (1830–2020)	Logarithmic transformation of the capital distance (in kilometers) between country pairs.	Fouquin and Hugot (2016)

Variable	Description	Source(s)
Common language (1830–2020)	Binary variable equal to 1 if both countries in the dyad share an official or primary language.	Fouquin and Hugot (2016)
Common border (1830–2020)	Binary variable equal to 1 if countries in the dyad share a land border.	Fouquin and Hugot (2016)
Colonial relationship (1830–2020)	Binary variable equal to 1 if one country in the dyad colonized or was colonized by the other.	Fouquin and Hugot (2016)
Trade agreement (1830–2020)	Binary variable equal to 1 if the dyad is part of a Preferential Trade Agreement (PTA).	DESTA (Dür, Baccini, and Elsig, 2014); Pahre (2007); Ptashkina (2022)
Regional trade agreements (1950–2023)	Binary variable equal to 1 if both countries belong to the same RTA.	Egger and Larch (2008)
Tariffs (1988–2021)	Average tariff between country i and j in logs.	Teti, Feodora A. (2024)
WTO membership (1987–2020)	Binary variable equal to 1 if both partners are WTO members.	Fouquin and Hugot (2016); Yotov et al. (2017)
Military alliance (ATOP) (1830–2020)	Binary variable equal to 1 if the countries share a formal military alliance, as defined by the ATOP dataset.	Leeds et al. (2002)
Co-Voting (UNGA) (1947–2020)	Continuous score reflecting the similarity of voting behavior in the UN General Assembly. Higher values indicate stronger alignment.	Voeten (2013)
Same regime type (1947–2020)	Binary variable equal to 1 if both countries in the dyad share the same regime type (Democracy, Dictatorship, or Hybrid).	Marshall (2020)

B.2 The Global Treaty Database

B.2.1 Contribution

Since the late eighteenth century, international treaties have been a principal instrument through which states align their policies, a role long established in law, history and international relations (Bull 1977; Keohane 1984; Koremenos, Lipson and Snidal 2001; Simmons 2010). When two governments wish to coordinate, they write a treaty, whose formality and legal force make the commitment credible to the other side (Abbott and Snidal 2000). Our database records these acts of alignment across two centuries.

To our knowledge, this is the first comprehensive global database of international treaties spanning more than two centuries. Previous collections focus on particular classes of agreements, such as trade, investment, military, or human rights treaties, or on specific countries or periods (e.g. Mitchell 2003; Gibler 2009; Simmons 2009; Keene 2012; Acharya, Estevadeordal, and Goodman 2023). Building on this rich qualitative and quantitative literature (Hollis, 2012; Shaffer and Ginsburg, 2012), we code all treaty types consistently from 1800 onward, providing a unified measure of international alignment across a broad range of policy domains.

Spanning 1800 to 2020, the database aims at near-universal coverage of the formal treaty record across all domains, rather than concentrating on a single policy domain or period as earlier collections do. For every treaty we record the date of conclusion, the participating states, the title, the subject terms, the instrument type, and a subject category, which lets us measure policy alignment between any pair of countries, year by year, across the entire modern era. Throughout, our analysis focuses on *alignment treaties*, those through which states coordinate or harmonize their policies, and sets aside pure transfers such as loans and development aid.

B.2.2 Sources

We combine the leading collection for each era—Oxford Historical Treaties and the Multilateral Agreement and Treaty Record Set (Denemark and Hoffmann, 2008) before 1918, the League of Nations Treaty Series for 1918–1944, and the United Nations Treaty Series after 1945—supplemented by national archives for the United Kingdom, the United States, and China, and by the specialized historical trade-agreement datasets of Pahre (2007) and Ptashkina (2022).

Pre-1917 (1800–1917). For the nineteenth and early twentieth centuries, our principal sources are the *Multilateral Agreement and Treaty Record Set* (MARTS) compiled by Denemark and Hoffmann (2008) and Oxford Historical Treaties, which digitizes Clive Parry's *Consolidated*

Treaty Series. The latter provides the core coverage of bilateral treaties during this period. We complement these sources with specialized collections for the United Kingdom (United Kingdom Treaties Library) and the United States (Bevans' treaty collection hosted by the Library of Congress), as well as the historical trade-agreement datasets of Pahre (2007) and Ptashkina (2022). The resulting database contains 9,754 treaties.

Interwar period and World War II (1918–1944). Our primary source for this period is the *League of Nations Treaty Series*, which records treaties registered with the League of Nations under Article 18 of its Covenant. We supplement this collection with additional treaties from the US treaty collection, Oxford Historical Treaties, and other specialized historical sources whenever these provide agreements not registered with the League. This yields a comprehensive record of treaty activity during the interwar period and World War II, containing 5,265 treaties.

Postwar period (1945–2020). For the postwar era, our principal source is the *United Nations Treaty Series*, which provides systematic coverage of treaties deposited with or registered at the United Nations. We complement these records with national and regional collections whenever necessary to ensure complete coverage across countries and policy domains: a further 2,013 United States treaties (from the Bevans collection, from United States Treaties and Other International Agreements (UST), and from the Treaties and Other International Acts Series (TIAS)); 2,309 treaties for the United Kingdom; and 916 for China from its Ministry of Foreign Affairs. In total, for the post-1945 period, the database contains 61,830 treaties. More than four fifths of all treaties in the database were signed after 1945, reflecting the rapid expansion of international cooperation in the postwar decades.

Table A2: Treaty data sources

Period	Main sources	Treaties
1800–1917	Oxford Historical Treaties (Parry, *Consolidated Treaty Series*); MARTS (Denemark et al.); UK Treaties Library; Bevans / US Library of Congress; Pahre; Ptashkina et al.	9,754
1918–1944	League of Nations Treaty Series (Art. 18); US and Oxford collections	5,265
1945–2020	UN Treaty Series; US (Bevans, UST, TIAS); UK Treaties Library; China Ministry of Foreign Affairs	61,830

Note. The Global Treaty Database combines the leading treaty archive for each historical period into a single harmonized, country level dataset. Sources are merged with a fuzzy matching procedure (threshold 0.6, exact match on year and category) followed by manual verification of thousands of candidate matches. Counts are original treaties between sovereign states after the sample restrictions described in the text.

B.2.3 Merging, cleaning and final sample

We also limit our scope to "original treaties" as defined by the UN, thus excluding 12,297 "subsequent agreements," which typically contain minor changes to existing treaties such as editing individual clauses. Furthermore, we exclude approximately 2,000 treaties due to missing essential details, such as date, participants, or title. The resulting dataset contains 76,849 treaties signed between 1800 and 2020.[27]

Harmonization and duplicate removal. Combining many archives raises two challenges: reconciling states whose names and borders change over time, and avoiding the double counting of treaties that appear in more than one source. We address the first by harmonizing every participant through the GeoPolHist database, which tracks countries consistently through state formation, dissolution, territorial change, and political union. We address the second with a fuzzy matching procedure followed by *extensive manual verification.* Treaties are matched across sources on their titles and country names, allowing for differences in formatting and terminology, while requiring an exact match on the year of conclusion and on the treaty category; we deliberately set the matching threshold low (0.6) to minimize false negatives that would

[27] To avoid double counting when merging treaty data from various sources, we adopt a fuzzy merge technique and double-checked the matching results manually for thousands of treaties. We matched treaty titles and country names across different sources, accounting for variations in formatting or terminology. We set the matching threshold at 0.6—a relatively loose parameter to minimize the risk of having false negative that may lead to double counting — while ensuring a perfect match for the treaty year and category.

leave duplicates in the data, and we retain the most complete record for each treaty. Because a loose threshold can also produce false positives, we did not rely on the algorithm alone: research assistants manually reviewed thousands of candidate matches, confirming or rejecting each one, so that the final result reflects human judgment rather than a mechanical rule.

Sample restrictions. To obtain a consistent country level dataset we make a small number of deliberate exclusions. We keep only treaties between sovereign, independent states, dropping roughly 3,000 treaties signed by minor entities that are not sovereign states, such as tribes or villages, and 821 signed by colonies. Following the practice of the United Nations Treaty Series, we keep only "original treaties" and set aside 12,297 "subsequent agreements", the protocols and exchanges of notes that amend or extend a treaty already in the data and would otherwise be counted more than once. Adding these subsequent agreements back to the sample leaves our results unchanged (Table A5). Finally, we drop approximately 2,000 treaties that lack an essential field such as the date, the participants, or the title.

The resulting database. The result is a uniquely detailed record of international cooperation. Whereas existing datasets typically cover a single domain, such as trade, investment, alliances, or human rights, or a single period, the Global Treaty Database provides one consistent, participant level measure of policy alignment that spans the entire modern era and the full range of policy domains. It records not only whether two countries concluded a treaty in a given year but also its subject, its form, and its parties, which is what allows us to trace the substance of alignment, and its economic content, across two hundred years.

From the database to the regression sample. The counts reported here and in the figures describe the full database of 76,849 treaties over 1800–2020. The gravity regressions use a subset of these treaties, and it is useful to state the relationship explicitly. We restrict attention to the 1830–2020 period, for which the bilateral trade and gravity data are available; we drop treaties that involve colonies. The remaining treaties are then analysed at the country pair (dyad) level: each treaty is expanded into the pairs of its signatories, so that a bilateral treaty contributes one pair and a multilateral treaty contributes one pair for each pair of parties. Collapsing to the dyad-year level and matching to bilateral trade yields the gravity estimation sample of 1,198,284 dyad-year observations.

B.2.4 Classifying treaties by topic: large-language-model coding and validation

We assign each treaty to one of the categories above with a large language model, and we validate the assignment against independent, hand-coded data. We build on the taxonomy of Miles and Posner (2008) and extend it with subject terms from the World Legal Information Institute and the United Nations Treaty Series. The classification is carried out with GPT-4 Turbo through the OpenAI API. The model is given the treaty title together with whatever additional information the source provides, namely subject terms, keywords, or, for the 2,804 United States treaties that lack titles, detailed descriptions. Through a prompt that lists and illustrates each category with examples, it is instructed to assign exactly one category and to choose "Other" whenever the available information is insufficient. We set the model's temperature to zero, which removes randomness and makes the classification deterministic and reproducible, and we require a single category per treaty; both choices sharply reduce the scope for misclassification.

We assess the reliability of the classification in three complementary ways. *First*, the classifier is internally consistent when the same treaty is described in different ways. Many treaties appear in more than one of our source collections, often under different titles or subject terms, and are therefore classified independently from each input. For thousands of these treaties the model returns the same category from every description; the agreeing records are then merged, while the smaller number that disagree are set aside for manual review. The agreement provides a consistency check that spans every multiply-sourced treaty, rather than a hand-picked sample. *Second*, the merges themselves were reviewed by hand: research assistants examined thousands of candidate matches, confirming or rejecting each one, so that the final record reflects human judgment and not a mechanical threshold. *Third*, and most directly, we benchmark the classification against the specialized, hand-coded databases that serve as a gold standard in the one domain where such data exist at scale, trade agreements. The overlap is near-exact: we recover every one of the 948 trade agreements in DESTA since 1948 and almost all of the historical agreements coded by Ptashkina (2022) (1,278) and Pahre (2007) (1,654), missing only 123, which we add ex post for completeness. A machine classification working from titles and subject terms thus identifies the same agreements that domain experts identify by hand. The comparison also shows that the classification adds information rather than merely reproducing it: it uncovers 5,383 further trade-related treaties, from sanitary standards for food exports to customs and transit rules, that are directly relevant to cross-border trade but fall outside the GATT definition earlier collections used and so had never been coded. Appendix B.5 reports the full benchmarking exercise, extending it to military alliances and to UN voting.

B.3 Treaties mostly concern economic integration

We now take the 22 categories and consider more closely what these treaties are about. As orientation we draw on economic theory, which has long emphasized that the cost of trading across a border lies as much behind the border as at it. That the border itself imposes large costs on trade is a central finding of the modern trade literature: McCallum (1995) documented a striking border effect, and Anderson and van Wincoop (2003) showed that such effects reflect the many costs of transacting across a frontier, of which differences in regulation, legal systems, taxation, and the security of property form a large part (North 1990; Anderson and Marcouiller 2002). As tariffs fell, the substance of integration moved behind the border into regulatory harmonization, so that a modern "deep" agreement bundles provisions on investment, competition, intellectual property, standards, and legal cooperation (Bagwell and Staiger 2001; Baldwin 2011; Horn, Mavroidis and Sapir 2010; Mattoo, Rocha and Ruta 2020; Grossman, McCalman and Staiger 2021).

Most of our categories map onto one of these behind-the-border margins, from the transport and information costs of moving goods to the enforcement of contracts and the security of property. We group the alignment treaties into those that are economic and trade-cost-reducing and those that are not. As the composition figure in the main text shows, the economic categories account for close to two-thirds (67 percent) of treaty-making, a share that has held remarkably steady across two centuries of globalization. Classic trade agreements are only one part of this core: diplomacy and consular relations, transportation, taxation, legal cooperation, telecommunications, and investment together account for a larger share still.

Economic and trade cost reducing categories. Each of these categories lowers one of the behind the border components of trade costs.

- **Trade agreements** (7,555). The instruments a reader recognizes at once as trade policy. The classic preferential agreements (2,446), which prior databases code, are free trade agreements, customs unions, common markets, and the historical treaties of commerce and navigation; they grant tariff preferences and market access. The additional trade and commerce treaties (5,109) are the wider commercial instruments we code but prior databases did not, including sectoral and commodity arrangements and bilateral commercial agreements governing specific flows of goods.

- **Diplomacy and consular relations** (6,017). Consular conventions, establishment treaties, and the mutual recognition of diplomatic and consular status, which give a state's

firms and nationals a protected standing abroad and cut the fixed cost of a commercial presence in another country.

- **Transportation and infrastructure** (5,831). Air services and air transport agreements, maritime and shipping conventions, road and rail transit, the navigation of shared rivers, and joint infrastructure, the physical backbone that moves goods and lowers their transport cost.
- **Cross border legal disputes, civil and criminal** (3,480). Mutual legal assistance, the recognition and enforcement of foreign judgments and arbitral awards, and judicial cooperation, which lower the cost of enforcing contracts across jurisdictions.
- **Taxation** (3,223). Conventions for the avoidance of double taxation and the exchange of tax information, which remove the fiscal wedge on cross border income and investment.
- **Telecommunication and postal services** (2,739). Postal conventions, telegraph, telephone and later telecommunication arrangements, which harmonize the standards and settlement rules that carry information across borders.
- **Investment, expropriation and arbitration** (2,060). Bilateral investment treaties and guarantees against expropriation, which secure the property of foreign investors.
- **Labour migration and remittances** (1,652). Agreements on labour mobility, the coordination of social security, and the recognition of qualifications, which lower the cost of moving labour.
- **Health care** (1,045). Sanitary conventions and the mutual recognition of health measures, which keep public health rules from operating as hidden barriers to trade.
- **Patents, trademarks and innovation** (708). The recognition and protection of patents and trademarks, which harmonize the rules over the knowledge embodied in traded goods.

Other categories. These treaties align states in domains that are not primarily economic. They matter for the alignment story of the paper, since a country that signs a security or environmental treaty alongside the hegemon reveals its alignment, but as a rule they do not act on the cost of a private cross border transaction.

- **Education and science** (3,625). Scientific and technical cooperation, joint research, the recognition of diplomas and degrees, training centres, and academic and cultural exchange.

- **Military alliances and peace treaties** (3,397). Alliances and mutual defence pacts, peace settlements, the status of forces, access to military facilities and bases, the transfer of equipment, and defence ministry cooperation.
- **Territory and borders** (2,268). Boundary delimitation and demarcation, the delimitation of continental shelves and marine areas, border regimes, transit and navigation on shared waters, and cessions. By settling where one legal order ends and another begins they concern sovereignty rather than the cost of a private cross border transaction.
- **Culture and heritage** (2,125). Cultural agreements and conventions, cultural exchange and cooperation, cultural institutes, film co-production, cooperation in tourism, and the protection and return of cultural heritage.
- **Environment, climate and animal protection** (1,831). Conservation of nature and wildlife, fisheries conventions, the regulation of whaling, the control of pollution, the management of shared water and other resources, and climate and animal protection.
- **Terrorism and extradition** (1,608). Extradition treaties and conventions, the surrender of offenders, and cooperation against terrorism and organized crime.
- **Nuclear energy, weapons and non-proliferation** (1,438). Cooperation in the civil uses of atomic energy, the supply of fissionable material and reactors, safeguards agreements with the International Atomic Energy Agency, civil liability for nuclear damage, and non-proliferation and arms control.
- **Human rights** (562). A varied category spanning the nineteenth-century treaties for the abolition of the slave trade, the wide network of bilateral social security agreements, conventions on the protection of workers and of minorities, and later arrangements with the United Nations human rights bodies.
- **Outer space** (360). Cooperation on space activity, satellites and launch services, and launch and tracking facilities.
- **Refugees and asylum** (206). Refugee relief, the repatriation and readmission of persons, asylum, and resettlement.

Excluded categories. We set aside three groups: lending and financing (16,446) and development aid (6,110), which transfer resources across borders rather than harmonize the rules governing private transactions; a residual *other* category (2,563) of treaties we cannot classify with confidence; and the subsequent agreements that amend or extend treaties already

recorded and would otherwise be double-counted (Appendix B.2). Adding the transfers back to the sample leaves our results unchanged (Table A5).

Table A3 summarizes the full breakdown: it lists every category with its treaty count, groups them into economic-integration and non-economic alignment treaties, and marks the transfers set aside from the analysis.

Table A3: Treaties by category

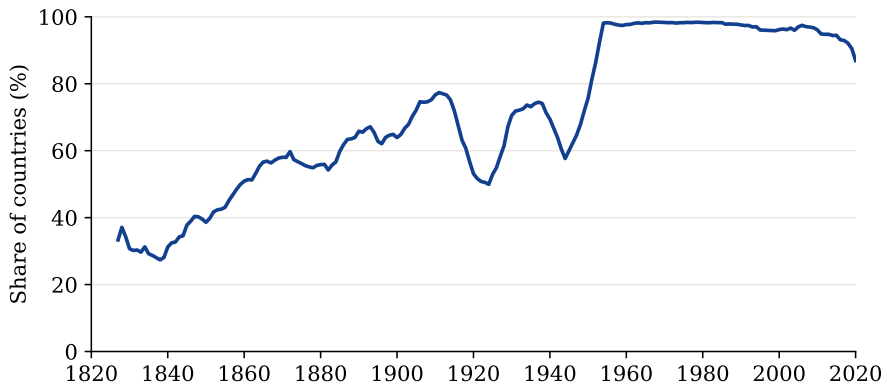
Category	Treaties
Alignment treaties	
Economic integration	
Trade agreements, of which	7,555
... 2,446 classic preferential trade agreements	
... 5,109 additional trade and commerce treaties	
Diplomacy and consular relations	6,017
Transportation and infrastructure	5,831
Cross-border legal disputes, civil and criminal	3,480
Taxation	3,223
Telecommunication and postal services	2,739
Investment, expropriation and arbitration	2,060
Labour migration and remittances	1,652
Health care	1,045
Patents, trademarks and innovation	708
Subtotal	*34,310*
Non-economic	
Education and science	3,625
Military alliances and peace treaties	3,397
Territory and borders	2,268
Culture and heritage	2,125
Environment, climate and animal protection	1,831
Terrorism and extradition	1,608
Nuclear energy, weapons and non-proliferation	1,438
Human rights	562
Outer space	360
Refugees and asylum	206
Subtotal	*17,420*
Unclassified	2,563
Total	**54,293**
Transfers *(excluded from main sample)*	
Loan treaties	16,446
Development aid treaties	6,110
Subtotal	*22,556*

B.4 Treaty-making patterns: descriptives and robustness

This appendix presents additional figures on treaty-making patterns and robustness analysis for our results on hegemony and treaty-making, complementing Table 1 in the main text.

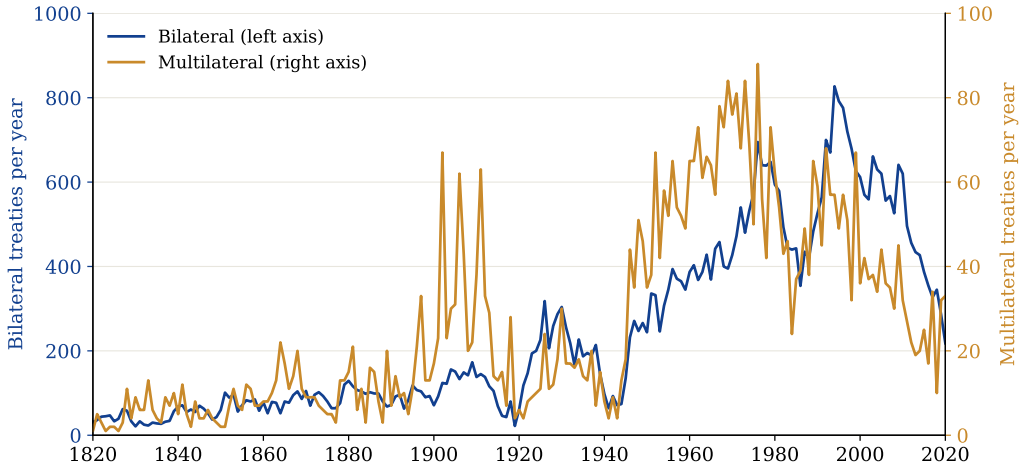
Figure A2 shows the share of countries engaged in treaty-making over time; Figure A3 differentiates bilateral from multilateral treaty-making. Table A4 then builds on Table 1, reporting results for alternative definitions of a hegemon and for the intensive and extensive margins of treaty-making.

Figure A2: Share of countries engaged in treaty-making, 1820–2020



Note: Percentage of countries in the estimation panel that signed at least one treaty in a given year (10-year moving average).

Figure A3: Bilateral and multilateral treaty-making per year, 1820–2020



Note: Newly signed bilateral treaties (blue, left axis) and multilateral treaties (orange, right axis) per year, excluding lending and development aid: 48,878 bilateral and 5,415 multilateral alignment treaties (54,293 in total).

Table A4: Hegemons and treaty-making – alternative definitions of a hegemon

	Aggregate		***Dyadic***		
	(1)	(2)	(3)	(4)	(5)
Dependent variable:	Share of world treaties signed by country i (%)	Share of countries with i as their main partner (%)	Number of treaties i signs with j (intensive margin)	Country j is i's single largest treaty partner	i signs any treaty with j (extensive margin)
Panel A. Hegemon dummy when GPI above 10%					
Country i is hegemon	6.271***	6.598***			
	(1.699)	(2.431)			
Partner j is hegemon			0.258***	0.055**	0.127***
			(0.075)	(0.024)	(0.017)
Panel B. Hegemon dummy: UK until 1910s and US from 1940s					
Country i is hegemon	8.314***	8.492			
	(2.804)	(5.755)			
Partner j is hegemon			0.497***	0.107***	0.134***
			(0.117)	(0.038)	(0.033)
Panel C. Continuous GPI share					
Country i's GPI share	0.363***	0.370			
	(0.120)	(0.243)			
Partner j's GPI share			0.0234***	0.0077***	0.0093***
			(0.0033)	(0.0018)	(0.0015)
Estimator	OLS	OLS	PPML	OLS	OLS
Unit of observation	country × decade		country pair × decade		
Controls	country i pop., exports		partner j pop., exports		
Fixed effects	country, decade		country i×decade, pair		
Sample	all countries		pairs with ≥ 1 treaty		all pairs (incl. zeros)
Observations	1,492	1,492	19,514	19,514	130,944

Note: Each panel re-estimates the specifications of Table 1 under a different definition of the hegemon: in Panel A, a hegemon is a country whose GPI share exceeds 10; in Panel B, the United Kingdom through the 1910s or the United States from the 1940s; and in Panel C, the hegemon dummy is replaced by the continuous GPI share. The panels are separate sets of regressions. In each panel, the first row reports the aggregate regressor (country i's own hegemon status, Columns 1–2) and the second row the dyadic regressor (partner j's hegemon status, Columns 3–5). Columns (1)–(2) use a country–decade panel; Columns (3)–(5) use a country-pair–decade panel. Columns (3)–(4) comprise the ordered pairs (i, j) that sign at least one treaty in the decade; Column (5), the extensive margin, instead includes every ordered pair among the countries active in the decade, so the pairs that do not sign enter as zeros. Estimation, fixed effects, controls, and standard errors are as in Table 1: the dyadic columns hold the partner's world shares of population and exports fixed, so the hegemon coefficient is identified above and beyond the partner's economic size; standard errors are robust in Columns (1)–(2) and clustered by pair in Columns (3)–(5). Point estimates are positive throughout; the binary indicators (Panels A and B) are not directly comparable to the continuous GPI share (Panel C). $^{***}p < 0.01$, $^{**}p < 0.05$, $^{*}p < 0.10$.

B.5 Benchmarking the treaty dataset: military agreements, UN voting, and trade agreements

This section benchmarks our global treaty database to the most widely used existing datasets on treaty-making and political alignment. We start with the two classic measures of alignment: (1) military treaties and (2) voting in the UN General Assembly. We then assess the quality of our data extraction and classification approach by checking the overlap with existing, hand-coded datasets of (3) trade agreements.

A key takeaway is that treaties are a useful long-run measure of alignment, as they show considerable variation across space and time and span more than 200 years, thus starting much earlier than UN voting data, which is available only after WW2. The benchmarking exercise shows considerable overlap for military alliances, as countries that are militarily aligned also sign significantly more treaties on non-military issues. There is also a significant positive correlation with UN voting, especially during the Cold War, but the two measures are conceptually rather different (see below). For completeness, in Broner et al. (2025), we use these two established proxies of alignment (UN voting and military alliances) to show complementary evidence indicating that hegemons foster alignment.

Regarding trade agreements, we find an almost perfect overlap with existing datasets. We correctly identified every single one of the 948 trade agreements contained in the widely used DESTA database since 1948. The matching rate was also very high for the historical datasets going back to the early 19th century, as we correctly coded almost all of the trade agreements hand-coded by Ptashkina (2022) (1,278 trade agreements) and Pahre (2007) (1,654 trade agreements). More specifically, these two datasets contained only 123 trade agreements that we did not identify, so we add them to our main dataset ex post for completeness.

The overlap in the coverage of trade agreements is notable, given that we are benchmarking against highly-specialized datasets that have been carefully hand-coded and cross-checked. The result is reassuring that our collection of sources and our ChatGPT-based classification method are producing reliable results. In addition, our dataset adds important new insights. In terms of trade agreements, for example, we identify an additional 5,383 trade-related treaties that are not classical trade agreements according to the GATT definition used in previous data collection efforts. Instead, these treaties cover a broader range of issues that are highly relevant to cross-border trade in specific areas - such as sanitary standards for food exports or customs and transit rules. We consider these 'secondary' trade agreements to be a valuable complement to the traditional trade agreement dummies that have dominated the literature to date.

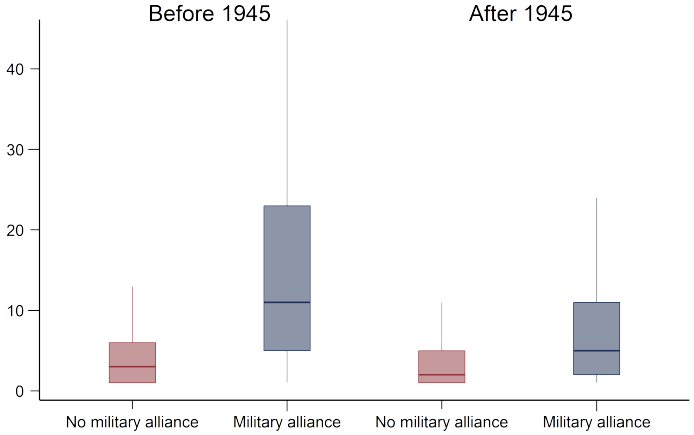
B.5.1 Military allies also sign more non-military treaties

We start by benchmarking treaty intensity with the incidence of military agreements. For this purpose we draw on the much-cited ATOP dataset by Leeds et al. (2002), which provides comprehensive data on military alliance agreements signed by all countries worldwide 1815-2018.[28] We then link the dyadic military alliance data with our dyadic "'share of treaties" variable between countries that we described in the previous section.

Figure A4 shows the resulting histogram of treaty shares for country pairs with and without a military agreement. To account for shifts in military alignment, we distinguish by historical era (pre and post WW2). This means that we collapse both the alliance and the treaty data in two sub-samples: 1800-1945 and 1946-2020. A country pair is coded as having a military alliance if this was the case at any point in these sub-periods (the results are similar if we use narrower time samples).

Countries that are military allies also tend to sign considerably more treaties. This is particularly true in the pre-1945 sample, where the median treaty share is more than three times higher for countries with a military alliance than for countries without. The difference is less pronounced but still large in the post-WW2 era, with military allies signing about twice as many treaties as non-allies. These findings are surprising, but give assurance that treaty-making is a useful alternative to existing measures of country alignment.

Figure A4: Military alliances and treaty incidence



Note: This figure shows a histogram of the average number of treaties signed between countries in the pre-WW2 or post-WW2 period, respectively. We differentiate between country pairs that had a standing military alliance pre- or post-WW2 (blue) and those that did not (red). Data on military alliances comes from the ATOP database.

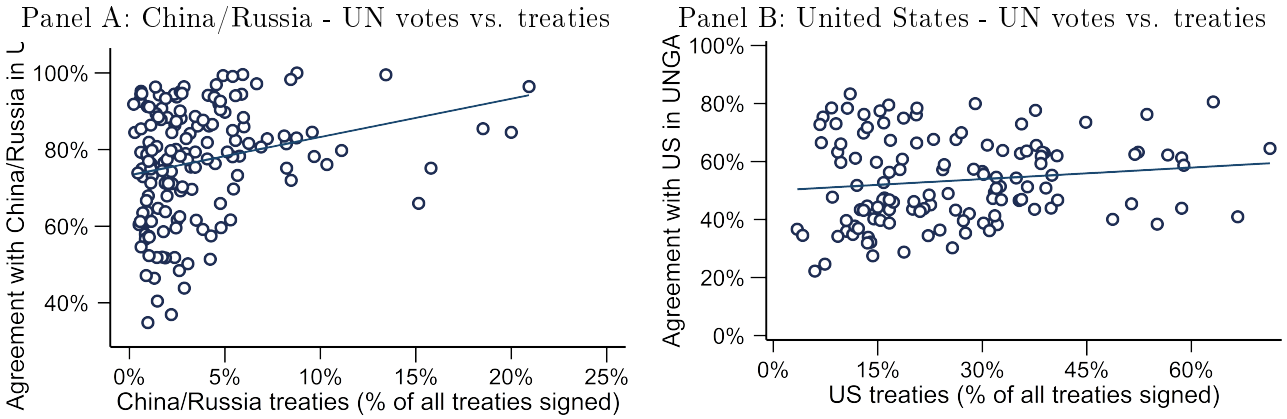
[28] ATOP measures military alliances as offense, defense, non-aggression, neutrality, and consultation pacts.

B.5.2 Treaties differ from UN voting

A second, useful and widely used indicator of alignment is joint voting in the United Nations General Assembly (UNGA), as discussed above. We next combine data on joint UN voting as collected by Bailey, Strezhnev, and Voeten (2017), with our measure of bilateral treaty shares.

Figure A5 shows a positive correlation between UN voting agreement and treaty intensity during the Cold War (1946-1990). Countries that tend to agree more with China and Russia in the UNGA also sign a higher share of treaties with China and Russia (Panel A). For the US, the correlation between UN voting overlap and treaty-making intensity is also positive, but not statistically significant (Panel B).

Figure A5: UN voting agreement vs. treaty shares, 1946-1990



Note: Scatter plot of UNGA voting agreement towards the US or China/Russia (horizontal axis) with treaty intensity towards these countries (on the vertical axis - share of treaties signed with the US or China/Russia as percent of total treaties). Each dot represents one country in the Cold War period (1946-1990).

Overall, however, the relationship between the two measures is weaker than in the comparison with military agreements. The correlation coefficient between UN voting and treaty shares is typically low, depending on the sample of years and countries chosen. The correlation coefficients are also often not statistically significant.

One explanation is that the two measures are conceptually very different. UN votes are a somewhat more narrow proxy of alignment because they capture country preferences on global issues, on which there tends to be more cross-country agreement, rather than on bilateral relations and tensions, as explained by (Voeten, 2013).[29] This can also be seen in the data: the UN voting overlap across countries is above 50%, on average, and even rival countries such as India and Pakistan or Eritrea and Ethiopia often vote similarly. In contrast, treaty intensity

[29]To illustrate that point, Voeten points out that more than a third of all UN votes of the past decades concern the Israel-Palestine conflict.

between countries (as the number or share of all treaty relationships) is much more dispersed. Moreover, treaties do not primarily relate to global foreign policy issues but span many domains including those that are predominantly domestic or regional.

B.5.3 Trade agreements: very high coverage overlap

To assess the reliability of our treaty selection and classification approach, we now benchmark our dataset, in particular all trade-related treaties, with widely used trade agreement datasets by other authors. Datasets on trade agreements have received much scrutiny and attention, especially by economists, because a large literature examines their determinants and effects. The most comprehensive dataset is the Design of Trade Agreements (DESTA) dataset, which includes 948 preferential trade agreements worldwide 1948-2023 (Dür, Baccini, and Elsig, 2014). Of these, 493 come from the WTO, while 455 are compiled from sources such as the World Trade Institute, the Organization of American States' Foreign Trade Information System, the Asia Regional Integration Centre, and national sources like the websites of foreign, trade, and economic ministries. DESTA only focuses on trade agreements that are either customs unions, free trade agreements, or partial free trade agreements from relatively big countries. Small countries or entities such as the Palestinian Authority are not included.

Pre-WW2, the most encompassing datasets on trade agreements are Pahre (2007); Ptashkina (2022), which cover the period 1815–1945. Ptashkina identifies 1,278 agreements and Pahre 1,654, with considerably overlap between the two. These two sources use similar datasets than we do and a similar coding approach, but they rely on hand-coding rather than ChatGPT. Ptashkina (2022), for example, codes treaties from the *Handbook of Commercial Treaties (HCT)* by Brauer and Kasten (1922) and the *Consolidated Treaty Series (CTS)*. Like we do, she classifies trade agreements using treaty titles, but we also rely on any additional treaty characteristics we could gather including keywords or treaty summaries and descriptions.

Our approach to classify trade-related treaties is broader than both that of DESTA and of the historical papers by Pahre (2007); Ptashkina (2022). These datasets use a rather narrow definition of trade agreements based on the classic GATT definition, i.e. focusing on market access provisions such as Most Favored Nation (MFN) clauses, tariff schedules, and exemptions on goods. We include not just trade agreements in a WTO or GATT sense, but also other relevant trade-related agreements e.g. on the management of fisheries exports, commodity extraction and exchange agreements, or sanitary standards for food exports. We further include not just agreements but also other documents that fulfill the UN treaty definition such as exchange notes or memoranda of understanding.

A rigorous comparison between these datasets and ours reveals that we successfully classified almost all trade agreements in history and today. More specifically, we correctly captured every single trade agreement included in the DESTA database. We therefore did not need to add any trade agreements in the post-WWW2 period (see Section 5). For the pre-WW2 period (1800–1939), we correctly classified more than 1500 trade agreements but miss 123 treaties, which we therefore add to our main dataset retroactively (see Section 5). In addition, our dataset has the advantage of including another 5,383 trade-related treaties that are not trade agreements in a classic sense but covering a broader range of narrower, more specific topics on cross-border trade that are not included in previous trade agreement datasets.

B.6 Additional results on treaties and trade: robustness and analysis

This appendix collects the additional evidence on treaties and trade referenced in Section 6.2. We first probe the robustness of the gravity estimates to alternative treaty measures and to bilateral ties (Tables A5 and A6), then construct a perpetual-inventory treaty stock as an alternative measure of accumulated alignment (Table A7). We then show that treaty-making leads trade in major historical episodes of integration (Figure A6), and trace the dynamic trade response with instrumented local projections (Figure A7 and Table A8).

B.6.1 Gravity robustness: other specifications and controls

The treaty–trade relationship is not an artifact of how we measure treaties, nor of omitted proxies for alignment. Table A5 varies the treaty measure—splitting bilateral and multilateral treaties, using extensive-margin indicators, an export-growth (first-difference) specification, and the two treaty-inclusion choices (adding lending and aid back, or adding the subsequent agreements)—and the elasticity remains positive and highly significant throughout. Table A6 then controls for widely used proxies for bilateral ties—preferential and regional trade agreements, military alliances, UN-voting similarity, and common regime type. Treaty alignment survives every one, and its coefficient is remarkably stable, so the treaty measure carries information well beyond these alternatives.

Table A5: Treaties and trade – alternative measures of treaty incidence and intensity

	Dep. var.: bilateral exports				export growth	treaty-inclusion	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Treaties (newly signed)	0.102***						
(sum of past 20 years, log)	(0.027)						
Bilateral treaties		0.034***					
(sum of past 20 years, log)		(0.012)					
Multilateral treaties		0.077**					
(sum of past 20 years, log)		(0.038)					
Treaty dummy I			0.066***				
(=1 if Bilateral/Multilateral $\geq$ 1 treaties in 20 years)			(0.018)				
Treaty dummy II				0.070***			
(=1 if Bilateral $\geq$ 1 treaties in 20 years)				(0.018)			
New treaties in decade					0.002***		
(sum of 10 years)					(0.000)		
+ aid & lending						0.101***	
(all treaties; sum of past 20 years, log)						(0.027)	
+ subsequent agreements							0.133***
(protocols/notes/amendments; 20 years, log)							(0.030)
Country-year FE	Y	Y	Y	Y	Y	Y	Y
Country-pair FE	Y	Y	Y	Y	N	Y	Y
Observations	1,191,034	1,191,034	1,191,034	1,191,034	617,927	1,190,296	1,190,296
Pseudo R^2	0.988	0.988	0.988	0.988	0.255	0.988	0.988

Note: PPML estimates of bilateral exports on alternative measures of treaty incidence and intensity, all on the country-pair fixed-effects specification of Column 6 of Table 2. Columns (1)–(4) vary how alignment is measured: the newly-signed count, its split into bilateral and multilateral treaties, and extensive-margin indicators. Column (5) follows Baier and Bergstrand (2007), regressing export *growth* on the change in treaty incidence in first differences (country-year fixed effects only). Columns (6)–(7) vary which treaties the stock includes: column (6) adds lending and aid back, so the stock counts all treaties; column (7) adds the 12,297 subsequent agreements (protocols, exchanges of notes, and amendments) the baseline follows the UN in excluding. Adding lending and aid barely moves the elasticity (0.102$\rightarrow$0.101)—about a third of the database but only $\sim$2% of dyad-year treaty counts—while the subsequent agreements strengthen it (0.102$\rightarrow$0.133), accumulating on already treaty-dense pairs. Standard errors clustered by country pair. $^{*}p < 0.10$, $^{**}p < 0.05$, $^{***}p < 0.01$.

Table A6: Treaties and trade – adding bilateral ties (trade, military, UN voting, democracy)

Dep. var.: bilateral exports									
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Treaties Nr.	0.103***			0.150***		0.079**		0.104***	
(sum of past 20 years, log)	(0.027)			(0.038)		(0.032)		(0.031)	
Treaty dummy		0.066***	0.068***		0.070***		0.036**		0.068***
(=1 if bil/mult $\geq$ 1 treaties in 20 years)		(0.018)	(0.018)		(0.019)		(0.018)		(0.019)
Trade Agreement	0.062***	0.063***	0.057***						
(=1 if PTA treaty in effect)	(0.018)	(0.018)	(0.018)						
Military Alliance-ATOP data				0.120***	0.126***				
(=1 if military alliance)				(0.030)	(0.029)				
Co-voting UNGA						0.007***	0.007***		
(% of agreement in UN)						(0.001)	(0.001)		
Same Regime Type								0.009	0.012
(Polity V Democracy Classification)								(0.028)	(0.028)
Country-year FE	Y	Y	Y	Y	Y	Y	Y	Y	Y
Country-pair FE	Y	Y	Y	Y	Y	Y	Y	Y	Y
Observations	1,191,034	1,191,034	1,069,315	888,717	888,717	865,613	865,613	951,805	951,805
Pseudo R^2	0.988	0.988	0.988	0.989	0.988	0.988	0.988	0.988	0.988

Note: This table benchmarks different treaty measurements, including both dummy variables and continuous variables (in logs). Columns (1)–(3) compare our primary treaty data with existing datasets, such as PTAs from Pahre (2007); Ptashkina (2022) and DESTA. Column (1) uses our main specification based on the log of the sum of treaties signed in the past 20 years. Column (2) applies a dummy variable version, as used in Table A5, while Column (3) restricts the sample to the post-WWII period using the same dummy specification. Columns (4) and (5) incorporate military alliance data from Leeds et al. (2002), where Column (4) uses a continuous measure and Column (5) uses a corresponding dummy variable. Columns (6) and (7) evaluate co-voting patterns at the UN General Assembly, using the data from Voeten (2013). Finally, Columns (8) and (9) include regime classifications from Polity V Marshall (2020), categorizing countries as democracies, anocracies, or autocracies.

B.6.2 Stocks vs flows: treaties as perpetual inventory

Our baseline measure of alignment is the number of treaties signed between two countries over the preceding twenty years. This rolling window imposes a sharp cut-off: treaties inside it count fully, those outside do not count at all. As a robustness check we replace the sharp window with geometric decay, constructing a dyadic treaty stock by the perpetual inventory method (PIM; Goldsmith, 1951). For a country pair, the treaty stock in year t is

$$K_t = K_{t-1}\,(1-\delta)^{\Delta t} + I_t,$$

where I_t denotes the number of treaties concluded between the two countries at time t and Δt is the number of years since the pair's previous agreement, so that the depreciation correctly accounts for the irregular spacing of treaty events. We enter the stock as $\ln(1 + K)$.

Choosing δ is not straightforward. In the prominent application of PIM to capital stocks, δ is pinned down from used-asset prices, age-efficiency profiles, and service lives (Schreyer, 2009). None of these has an analogue for treaties, for which we do not observe prices or termination dates. The closest analog in terms of subject matter is Persson and Tabellini (2009), who apply the perpetual inventory method within political economy, accumulating a country's past democratic experience into a depreciated democratic capital stock. Like years of democracy, treaties are an institutional flow with no market price whose past values plausibly matter less than recent ones, which is precisely what the perpetual inventory logic captures. Persson and Tabellini (2009) estimate δ by maximum likelihood within their probit hazard model of regime exit, obtaining 1–6% annual depreciation. Lacking a comparable structural model, we instead calibrate δ over a plausible range anchored at their lower bound of 1% and report robustness for $\delta \in \{0.01, 0.05, 0.10, 0.15, 0.20\}$.

Table A7 reports the results. The treaty-stock coefficient is positive and significant at every rate, declining smoothly from ≈ 0.47 at $\delta = 0.01$ to ≈ 0.14 at $\delta = 0.20$. Throughout, the estimate remains economically sizeable and consistent with the rolling-window baseline.

Table A7: Treaty stock and trade – perpetual-inventory robustness

	$\delta = 0.01$	$\delta = 0.05$	$\delta = 0.10$	$\delta = 0.15$	$\delta = 0.20$
Treaty stock (PIM, log)	0.465***	0.368***	0.243**	0.177**	0.140**
	(0.086)	(0.114)	(0.096)	(0.080)	(0.069)
Distance (log)	-0.675***	-0.688***	-0.704***	-0.715***	-0.723***
	(0.029)	(0.032)	(0.031)	(0.030)	(0.028)
Common language	0.166***	0.188***	0.189***	0.185***	0.182***
	(0.061)	(0.060)	(0.060)	(0.060)	(0.060)
Common border	0.506***	0.515***	0.528***	0.535***	0.539***
	(0.061)	(0.063)	(0.063)	(0.062)	(0.062)
Colonial relationship	2.202***	2.160***	2.161***	2.165***	2.167***
	(0.339)	(0.340)	(0.342)	(0.344)	(0.344)
Country-year FE	yes	yes	yes	yes	yes
Country-pair FE	no	no	no	no	no
Observations	1,198,284	1,198,284	1,198,284	1,198,284	1,198,284
Pseudo R^2	0.944	0.943	0.943	0.943	0.943

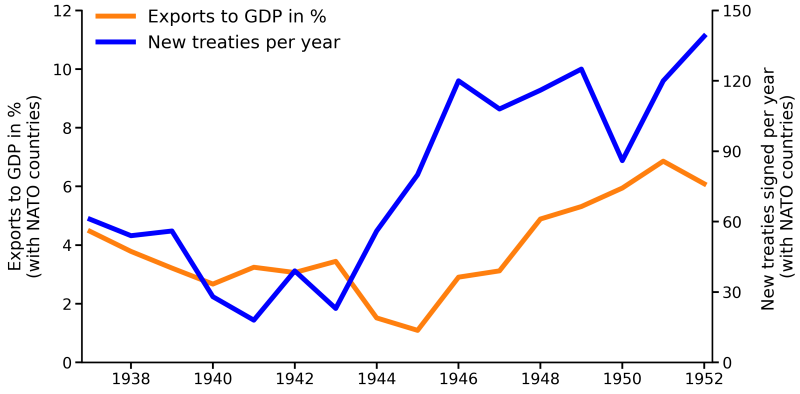
Note: PPML estimates of bilateral exports on the log bilateral treaty stock built by a perpetual-inventory method with annual geometric depreciation rate δ, $K_t = (1-\delta)^{\Delta t} K_{t-1} + I_t$, entered as $\ln(1+K)$. All columns include exporter-year and importer-year fixed effects and the gravity controls. Standard errors clustered by country pair in parentheses. $^{*}p < 0.10$, $^{**}p < 0.05$, $^{***}p < 0.01$.

B.6.3 Treaties as a leading indicator of trade flows

This section collects the evidence on timing and dynamics summarized in Section 6.2. Two patterns bear on whether treaty-making leads trade or merely follows it. First, in major historical episodes of integration, including postwar Western Europe, the developing-country liberalizations of the 1960s and 1970s, and the reintegration of Eastern Europe after 1990, treaty-making accelerates before trade takes off (Figure A6). Second, when past and future treaty activity enter the gravity equation together, lagged treaties predict current trade while future treaties do not, as reported in Section 6.2 (Table 4). Both are consistent with alignment leading trade, though neither establishes causality.

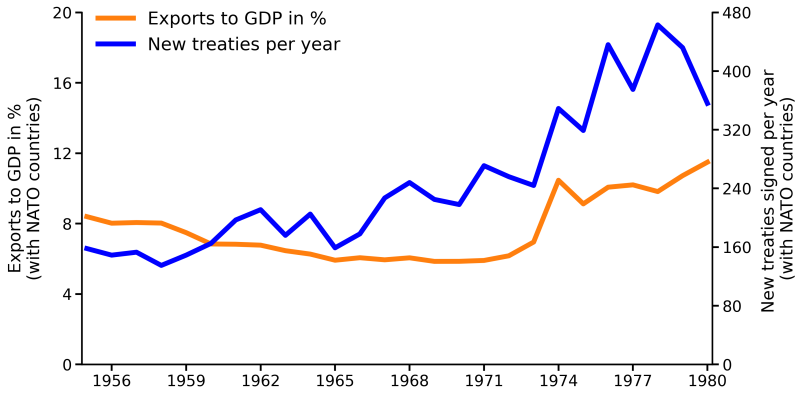
Figure A6: Treaties as a leading indicator of trade flows – selected historical episodes

Panel A: Western Europe after WW2



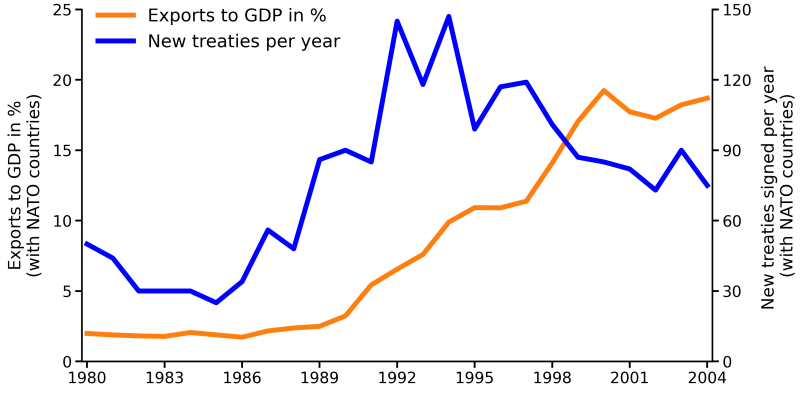
Note: The sample includes Germany, France, United Kingdom, Italy, Spain, Portugal, the Netherlands, Belgium, Austria, and Switzerland. We consider trade and treaties towards NATO members only (as of 1990).

Panel B: Developing countries in the 1960s and 70s



Note: The sample includes 127 developing countries based on the World Bank classification. We consider trade and treaties towards NATO members only (as of 1990).

Panel C: Eastern Europe around 1990



Note: The sample includes Albania, Bulgaria, Czechia and Slovakia (Czechoslovakia pre-1990), Estonia, Hungary, Latvia, Lithuania, Moldova, Poland, Romania, Ukraine, Russia, as well as Yugoslavia until 1992 and its successor states afterwards. We consider trade and treaties towards NATO members only (as of 1990).

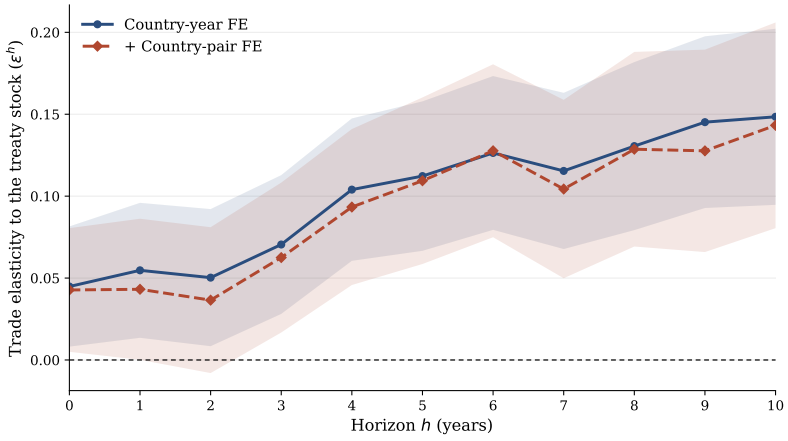
B.6.4 Dynamics: instrumented local projections

We quantify the dynamic magnitude with instrumented local projections following Boehm, Levchenko, and Pandalai-Nayar (2023), plotted in Figure A7 and tabulated in Table A8. Let i index the exporter, j the importer, and t the year; let $y_{ijt} = \ln X_{ijt}$ denote log bilateral exports and $s_{ijt} = \ln(1 + \text{stock}^{20}_{ijt})$ the log of the twenty-year rolling treaty stock. For each horizon $h \in \{0, \ldots, 10\}$ we take long differences relative to the pre-impulse year $t-1$, $\Delta_h x_{ijt} \equiv x_{ij,t+h} - x_{ij,t-1}$, and estimate

$$\begin{aligned} \text{(second stage)} \qquad & \Delta_h y_{ijt} = \varepsilon^h \, \widehat{\Delta_h s_{ijt}} + \delta^h_{it} + \delta^h_{jt} + \delta^h_{ij} + u^h_{ijt}, \\ \text{(first stage)} \qquad & \Delta_h s_{ijt} = \beta^h \underbrace{\left(s_{ijt} - s_{ij,t-1}\right)}_{Z_{ijt}\ \text{(initial impulse)}} + \delta^h_{it} + \delta^h_{jt} + \delta^h_{ij} + v^h_{ijt}, \end{aligned}$$

where δ^h_{it}, δ^h_{jt}, and δ^h_{ij} are exporter-year, importer-year, and country-pair fixed effects. The realized h-horizon change in the treaty stock is instrumented with the initial one-period impulse Z_{ijt}, following Boehm, Levchenko, and Pandalai-Nayar (2023), which addresses the autocorrelation of treaty changes; the coefficient of interest ε^h is the horizon-h elasticity of trade to the treaty stock plotted in Figure A7. Table A8 reports ε^h at every horizon, with and without country-pair fixed effects. Aid and lending treaties are excluded, and standard errors are clustered by country pair.

Figure A7: Dynamic trade elasticity to the treaty stock (local projections)



Note: The horizon-h trade elasticity to the treaty stock, estimated by instrumented local projection with exporter-year, importer-year and country-pair fixed effects. The treatment variable is the (log) twenty-year rolling window of treaties. Shaded bands are 95% confidence intervals; standard errors clustered by country pair.

Table A8: The horizon-h trade elasticity to the treaty stock (local projections)

Horizon h	ε^h (country-year FE)	ε^h (+ pair FE)	Observations	First-stage F
0	0.045** (0.019)	0.043** (0.019)	796,312	—
1	0.055*** (0.021)	0.043* (0.022)	766,519	131,964
2	0.050** (0.021)	0.037 (0.023)	743,632	58,981
3	0.070*** (0.022)	0.063*** (0.023)	722,077	36,693
4	0.104*** (0.022)	0.093*** (0.024)	701,976	25,127
5	0.112*** (0.023)	0.109*** (0.026)	683,127	18,361
6	0.126*** (0.024)	0.128*** (0.027)	665,334	15,524
7	0.115*** (0.024)	0.104*** (0.028)	648,136	13,142
8	0.131*** (0.026)	0.129*** (0.030)	631,009	11,368
9	0.145*** (0.027)	0.128*** (0.032)	614,472	10,798
10	0.148*** (0.027)	0.143*** (0.032)	598,686	9,976

Note: Instrumented local-projection estimates of ε^h, the elasticity of log bilateral exports to the log twenty-year treaty stock at horizon h, obtained by instrumenting the horizon-h change in the stock with its initial one-period innovation (Boehm, Levchenko, and Pandalai-Nayar, 2023). Both specifications include exporter-year and importer-year fixed effects; the second adds country-pair fixed effects. Observations are for the country-year-FE specification. Standard errors clustered by country pair in parentheses. First-stage F is the Kleibergen–Paap statistic, undefined at $h = 0$ where the horizon change coincides with the instrument. $^{*}p < 0.10$, $^{**}p < 0.05$, $^{***}p < 0.01$.

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