Territory Flows and Trade Flows between 1870 and 2008*

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Abstract

Countries gain and lose territories over time, generating *territory flows* that represent the transfer of territorial sovereignty. Countries also export and import goods, creating *trade flows* that represent the transfer of merchandise ownership. We find a substitution between these two international flows during the years 1870 and 2008; that is, country pairs with greater trade flows have smaller territory flows. This indicates how international trade enhances international security: reciprocal goods transactions discourage irreciprocal territorial exchanges.

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> Through commerce, man learns to deliberate, to be honest, to acquire manners, to be prudent and reserved in both talk and action. Sensing the necessity to be wise and honest in order to succeed, he flees vice, or at least his demeanor exhibits decency and seriousness so as not to arouse any adverse judgment on the part of present and future acquaintances; he would not dare make a spectacle of himself for fear of damaging his credit standing and thus society may well avoid a scandal which it might otherwise have to deplore.
>
> —Samuel Ricard (1781)

1 Introduction

Human beings are territorial. Most wars in recorded human history have arisen from escalating border tensions, and ended with agreements that either reaffirmed or revised borders. Territorial exchange represents the transfer of territorial sovereignty, just like international trade represents the transfer of merchandise ownership. Like goods, territories can flow in and out of a country. Unlike goods flows, which stem from reciprocal international trade, territorial exchanges usually provide gains for one side but losses for the other.

This study endeavors to estimate the impact of trade flows on territory flows. Territorial exchanges are primarily driven by political forces. We are not building an economic theory of international geopolitics, but instead estimate empirically whether economic forces can explain some portion of territorial exchanges. Our empirical results show that trade flows and territory flows were substitutes for each other in the last 139 years of world history. That is, if a country exported more goods to another country, it lost less territory to that country; or equivalently, if a country imported more goods from another country, it took less territory from that country. Quantitatively, a 10-percent larger trade flow is associated with a three to five percent smaller territory flow.

Our finding is robust throughout checks with different measures, margins, directions of flows, multiple econometric methods, and various specifications commonly used in the international trade literature. We have controlled for country and country pair level factors that covary with territory flows and trade flows, including geographical, linguistical, legal, and industrial characteristics. The substitution between territory flows and trade flows still holds.

Establishing causality is challenging in this context. Country pairs with territory flows are inherently different from those without them. The fact of having territory flows already indicates some form of antagonism, because territorial exchanges are rarely necessary if two countries are inseparable allies or have no sovereign conflicts at all (e.g., two small island countries located in two different oceans). In this study, we consider only country pairs having territory flows and exploit the variations across them in exchanged territory sizes. Limiting our focus to actual territorial exchangers mitigates but does not eliminate endogeneity, of course. Country pairs that ever exchanged territories have many reasons not to trade much with each other. To identify a causal effect of trade flows on territory flows, researchers have to ascertain that the variations in trade flows arise from factors beyond pairwise diplomacy and other bilateral factors. To this end, we instrument bilateral trade flows with three different external forces: remoteness, containerization, and opening and closure of canals. These forces, being neither bilateral nor political, have been found as independent trade flow shifters in the recent trade literature. Our 2SLS results demonstrate that the association between trade and territory flows is likely to be causal. Specifically, trade flows turn out to reduce territorial flows, and the magnitude of their effect is close to what OLS estimates reveal. Econometrically, even if endogeneity exists in the OLS results, it is not severe enough to bias our interpretation.

International trade has influenced modern political institutions through several channels, including property-right protection (Acemoglu, Johnson, and Robinson, 2005), contract enforcement (Ranjan and Lee, 2007; Anderson, 2009), democratiza-

tion (Galiani and Torrens, 2014), rent-seeking in policymaking (Levchenko, 2013), and cronyism in lawmaking (Puga and Trefler, 2014). Nation states, as basic units of modern political institutions, are territorial. Borders distinguish the jurisdiction of one state from another, the natural resources regulated by one government from those by another, the transactions liable for local taxes from those liable for import tariffs, and the military units that defend a place from those who invade it. The effectiveness of borders holds regardless of the political regimes used by countries, lasting until the countries on different sides revise them voluntarily or involuntarily. Political scientists view borders as a fundamental institution of the modern age due to an economic mechanism: clear borders between countries reduce uncertainties, thereby fostering potential for future cooperation (Keohane, 1984; Simmons, 2005; Gavrilis, 2008; Schultz, 2015).

Economists have not previously explored this mechanism, and as economists, we undertake this task. Our contributions are threefold. First, as our results illustrate, among country pairs with territory flows, trade flows and territory flows are substitutes. Notice that trade flows and territory flows, in theory, could be either substitutes or complements. Trade creates reciprocity, which tends to reduce territorial disputes; however it also fosters greed, which tends to induce territorial disputes. According to our empirical results, if both forces exist, the former outweighs the latter. Second, we find that the negative association between trade flows and territory flows is likely to be causal, going from (larger) goods flows to (smaller) territory flows. Our finding is reassuring and encouraging, since there exist plenty of effective means to promote trade, from infrastructure improvements to multilateral trade policy negotiations, whereas the means for assuaging territorial disputes are, at best, moderately effective.

Third, as predicted by the incentive mechanism, we find that countries having smaller territory flows with each other are more likely to sign trade agreements in the future. Commerce smooths out human relations through joint gains, as noted by French jurist Samuel Ricard in 1781 (excerpted at the beginning of this paper). Con-

sistent with his reasoning, when countries benefit each other through commerce, they become reluctant to take each other's large territories and ruin the relationship. This process is self-reinforcing, as the reciprocal attitude helps foster future cooperation. The resulting virtuous circle potentially explains the remarkable decline in the frequency of territory flows during the seven decades of post-WWII globalization.

The rest of the paper is organized as follows. In Section 2, we describe our sample and demonstrate basic data patterns. In Section 3, we present our econometric specification and main results. In Section 4, we examine the underlying causality. In Section 5, we investigate the potential mechanism. In Section 6, we extend our study to the case of independence. In Section 7, we conclude.

2 Data

Our major data source is the Correlates of War (COW) Project, which is a database constructed and maintained by political scientists to conduct studies of international relations.[1] Three datasets in the database constitute our working sample: the territorial exchange dataset compiled by Jaroslav, Schafer, Diehl, and Goertz (1998) (hereafter, JSDG), the bilateral trade dataset compiled by Barbieri, Keshk, and Pollins (2009) (hereafter, BKP), and the National Material Capabilities (hereafter, NMC) dataset initially compiled by Singer (1987) that has evolved since then.

The JSDG dataset we use covers the years 1816-2008, while the BKP bilateral trade dataset covers the years 1870-2009.[2] We use their overlapping years 1870-2008 as the time span for our working sample.[3] The JSDG provides data on territory

[1] The website for the COW Project is http://www.correlatesofwar.org.

[2] The majority of the post-WWII data in Barbieri, Keshk, and Pollins (2009) are from the International Monetary Fund's *Direction of Trade Statistics*. See their paper for detailed sources.

[3] The non-overlapping years 1816-1869 do not have trade-flow data. Also, it is difficult to find country and country pair level data for that period serving as control variables in the regression

flows. Each observation in the dataset is a territory flow, with an origin country that cedes the territory's sovereignty, and a destination country that assumes the territory's sovereignty. Note that the JSDG only covered formal territorial changes resulting from conquest, annexation, cession, secession, unification, or mandates by the League of Nations or the United Nations. In cases of conquest, the territory's sovereignty had to be formalized after the war; otherwise, it was not included.[4]

The NMC provides us with data on population and national powers, including iron and steel production and primary energy consumption. All three datasets are updated periodically using a consistent format mandated by the COW Project. In addition, we obtained characteristics of country pairs, such as whether two given countries share borders, languages, or legal systems. These characteristics were obtained from the CEPII gravity database compiled by Head, Mayer, and Ries (2010) (hereafter HMR), which has been widely used in the international trade literature.[5]

Table 1 is a summary of our sample. In our sample, there are 308 territory flows occurring within 201 country pairs, composed of 82 origin countries and 81 destination countries. Notice that only country pairs with territory flows and data on basic gravity variables (defined later in Section 3.1) are included in our sample.[6] In general, territory flows have become less frequent worldwide, while global total trade flows have increased over time (especially after the birth of the GATT/WTO). Figure 1 illustrates both patterns.

Notice that our interest is not in the relationship between trade flows and the

analysis.

[4]The cases of independence were excluded in the baseline results and we investigate this issue as an extension in Section 6.

[5]The COW project also includes a Direct Contiguity (DC) dataset on contiguity relations between countries in the international system from 1816 through 2016. We compared the sharing border variable in Head, Mayer, and Ries (2010) with the DC dataset and found no change in contiguity within the country pairs in our sample. That is, the sharing border variable in Head, Mayer, and Ries (2010) is applicable to the bilateral territory flows documented in the JSDG dataset during our sample period.

[6]The full list of those country pairs, along with the JSDG IDs of their exchanged territories linkable to the original JSDG dataset, is provided in Appendix Table A1.

Table 1: Descriptive Statistics

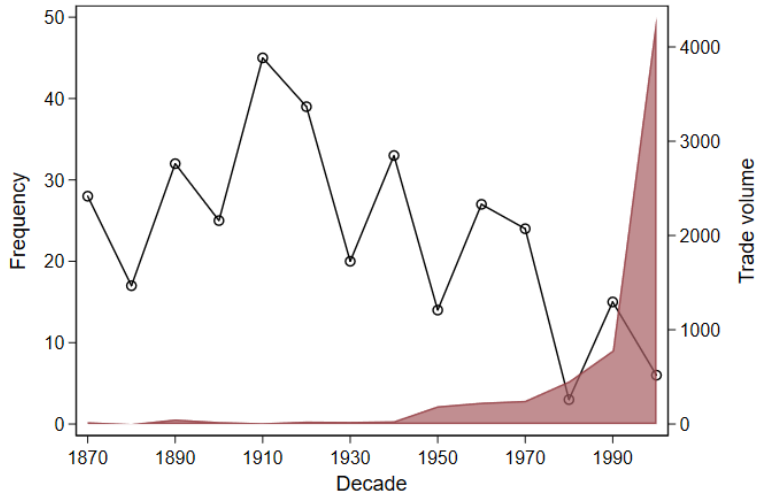
Variable	Source	Obs.	Mean	Std. Dev.
Area of territory flow (square km)	JSDG	308	114911.5	607369.3
Territory flow contiguous with orig. country	JSDG	308	0.6103896	0.4884555
Territory flow contiguous with dest. country	JSDG	308	0.7077922	0.4555174
Trade flow (million current USD)	BKP	308	122.1684	561.9902
Distance (km)	HMR	308	2719.635	3485.538
Sharing border dummy	HMR	304	0.4967105	0.5008136
Sharing language dummy	HMR	304	0.2467105	0.4318076
Sharing legal system dummy	HMR	304	0.5296053	0.4999457
Population of orig. country (1,000 persons)	NMC	308	63143.39	123678.8
Population of dest. country (1,000 persons)	NMC	308	75931.23	173258.1
Iron & steel production of orig. country (1,000 tons)	NMC	308	6755.942	19082.63
Iron & steel production of dest. country (1,000 tons)	NMC	308	5783.679	16140.35
Military expend. of orig. country (1,000 current USD)	NMC	308	3802694	1.60E+07
Military expend. of dest. country (1,000 current USD)	NMC	308	1955385	7902523
Petro. cons. of orig. country (1,000 coal-ton equivalents)	NMC	308	128198.1	387864.2
Petro. cons. of dest. country (1,000 coal-ton equivalents)	NMC	308	89486.76	246936

Destination (dest.) country is the side that receives the territory, while origin (orig.) country is the side that cedes the territory. Trade flow is defined as the volume of exports from the origin country to the destination country.

frequency of territory flows, but in the relationship between trade flows and the geographical sizes (areas) of actual territory flows. By limiting our attention to the 308 actual territory flows, the usability of our sample improves significantly. The areas of the flowed territories in the JSDG dataset are bottom-coded, meaning that small-size territories have their areas coded as one square kilometer. There are 40 such cases in our sample. When these territories are excluded, the areas of the flowed territories have a log-normal distribution. The distribution is displayed in Figure 2, where a normally distributed density curve is added for the purpose of comparison.

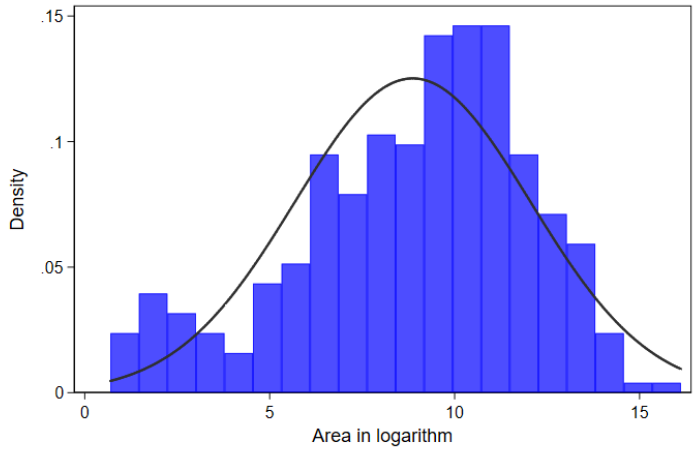
To preview the association between territory flows and trade flows, we divide bilateral trade flows from origin countries to destination countries into ten deciles. For each decile, we draw a box plot of the corresponding territory flow (area in

Figure 1: Territory Flows and Trade Flows over Time



Notes. Both territory-flow frequency and trade-flow volume are plotted against time in the figure.

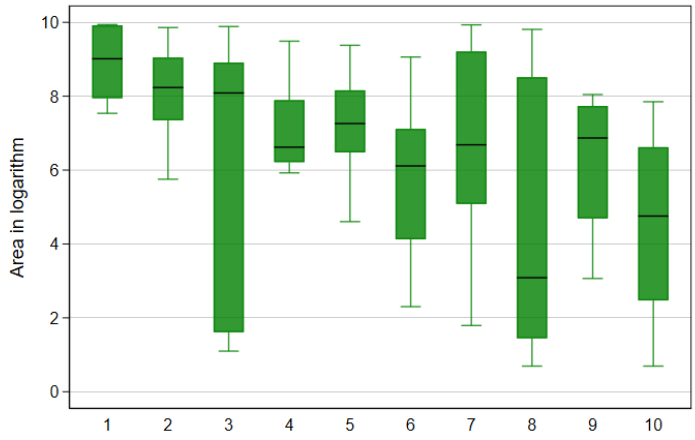
Figure 2: Histogram of Territory Flow (Areas)



Notes. Territory flows in the figure are measured by area of the exchanged territories between origin and destination countries.

logarithm). The box plots are demonstrated in Figure 3 against the deciles, where a downward pattern is revealed. This is a preview of the empirical association that

Figure 3: Territory Flows (by Area) versus Trade Flows (by Decile)



Notes. Bilateral trade flows from origin countries to destination countries are divided into 10 deciles. Each decile in the figure has a box plot of the territory flows (in area) between the corresponding origin and destination countries.

interests us, which does not control for other related factors. To investigate the marginal impact of trade flows on territory flows, we turn to regression analysis in the next section.

3 Empirical Findings

3.1 Specification

We hypothesize that having a large trade flow scales down the area of territory flow from the origin country to the destination country. Recall that origin and destination refer to the sovereignty of the territory flow. The destination country is the side that receives the territory, while the origin country is the side that cedes the territory. Aligned in the same direction, trade flows refer to the goods exported

by the origin country and imported by the destination country.[7] The idea is to examine the substitution (i) between importing goods from a country and taking its territory (viewed from the destination country's perspective), or equivalently (ii) between exporting goods to a country and losing a territory to it (viewed from the origin country's perspective).

Our regression analysis holds gravity factors constant. All else held equal, large countries have greater power to seize territories from other countries, and meanwhile more territories to lose. Furthermore, countries closer to each other are more likely to have territorial disputes. Thus, size and bilateral distance, or *basic gravity factors* as we call them, are correlated with territory flows between two countries. Basic gravity factors have long been known to be correlated with trade flows between countries.[8] They are also correlated with bilateral investments, migration, and tourism.[9] In our context, such gravity-driven phenomena stem from purely mechanical correlations uninteresting in their own right. To partial out the mechanical correlation from both territory and trade flows, we control for basic gravity factors. In other words, both territory flows and trade flows have non-gravity variations, and our ultimate interest is in whether the two non-gravity variations relate to each other.

We specify the main regression as

$$\begin{aligned}\ln TerriArea_{f,t} = \beta \ln TradeFlow_{i(f),j(f),t} \\ + \gamma_1 \ln Pop_{i(f),t} + \gamma_2 \ln Pop_{j(f),t} + \gamma_3 \ln Dist_{i(f),j(f)} \\ + X_{i(f),j(f),t}\overline{\delta} + \lambda_{i(f)t} + \lambda_{j(f)t} + \epsilon_{f,t}, \quad (1)\end{aligned}$$

where f indexes territory flows and t indexes years. The dependent variable

[7] As later shown in Table 7, the direction of trade does not matter: trade flows in the reverse direction have a similar effect.

[8] See Anderson (2011), Head and Mayer (2014), and Baltagi, Egger, and Erhardt (2017) for reviews. The gravity model in the international trade literature usually uses GDP instead of population to measure economic size, though country-level GDP statistics prior to WWII are rarely available.

[9] See Zhang (2020) for reviews of trade and migration studies.

$\ln TerriArea_{f,t}$ refers to the logged geographical size (area) of territory flow f that occurred in year t. We denote the origin country by $i(f)$ and the destination country by $j(f)$. The two countries have time-variant trade volume $\ln TradeFlow_{i(f),j(f),t}$, the coefficient of which (i.e., β) is our parameter of interest.[10] $\beta < 0$ (respectively, $\beta > 0$) indicates that territory flow and trade flow are substitutes (complements). We control for the time-variant populations of the two countries (i.e., $Pop_{i(f),t}$ and $Pop_{j(f),t}$) and their time-invariant bilateral distance (i.e., $Dist_{i(f),j(f)}$). We identify the continents of origin and destination countries (Africa, Asia, Europe, Latin America, North America, or Oceania) and divide the 139 years into 14 decades. Interacting continent dummies with decade dummies allows us to include origin continent-decade fixed effect $\lambda_{i(f)t}$ and destination continent-decade fixed effect $\lambda_{j(f)t}$, approximating origin country-year fixed effects and destination country-year fixed effects in the gravity model literature.[11] $\epsilon_{f,t}$ is a classical error term, and robust standard errors are used.

The vector $X_{i(f),j(f),t}$ in equation (1) represents a battery of other country and country pair characteristics, including whether the two countries share any border, language, or legal system. They covary with bilateral trade and are normally controlled for in gravity models (see Head, Mayer, and Ries (2010) for example). In addition, the JSDG dataset reports whether territory f is contiguous with the origin country or with the destination country. We control for them to hold constant the likelihood of border disputes. More subtle to control for are the variables related to national powers, including (i) iron and steel production, (ii) military expenses, and (iii) energy consumption. On the one hand, they should be included in the regression, since stronger national powers were usually associated with hegemonic expansions during our sample period. On the other hand, the production and con-

[10] We assume constant elasticity across country pairs. See Hu and Zhang (2021) for the estimation of heterogeneous elasticities in gravity models.

[11] Our sample space is a ft-matrix rather than an ijt-matrix. Notice that the ijt-matrix in our territory context would be much sparser, and thus far less usable, than those of multi-year trade gravity models. As noted earlier, because origin and destination countries have territory flows only in a small number of years, the territory-flow variation generated by them cannot afford country-year fixed effects.

sumption of metals, energy, and arms constituted a major part of trade flows, such that including them in the regression renders the coefficient of trade flows β (our parameter of interest) difficult to interpret. As a compromise, we use them but not in our preferred specifications.

3.2 Main Results

Our baseline results are reported in Table 2. Panel A reports ordinary least squares (OLS) estimates, where we start with a regression with only trade flow and basic gravity variables. As shown by column (1), a 10-percent increase in trade flow is associated with a 3.4-percent decrease in the area of territory flow. In other words, the substitution elasticity is approximately -0.34. In column (2), adding additional control variables slightly shrinks the sample size (from 308 to 304, owing to missing values of those additional control variables) and the elasticity rises in magnitude to about -0.44. In columns (3)-(5), we add a different national power measure one at a time and the previous finding remains. As noted earlier, we prefer not to include these measures since they are directly related to or even part of trade flows. The area of territory flow, if smaller than one square kilometer, is bottom-coded as one square kilometer and ends up being zero in logarithmic terms. To address potential issues arising from bottom-coding, we experiment with Tobit estimation. Panel B of Table 2 reports the Tobit estimates, which are similar to the OLS estimates reported in Panel A. In general, a 10-percent increase in trade flow is associated with a three to five percent decrease in territory flow.

Historical trade data might be inaccurate since developing customs and statistical agencies is costly and takes time. Signs of trade flows are generally more reliable than their magnitudes, because misrecording a positive value as another is more likely than misrecording a positive value as zero. In Table 3, we first use a dummy variable that equals 1 for positive trade flows to replace the previous continuous trade flow variable (*Spec 1*). This 0-or-1 demarcation is usually referred to as the

Table 2: Baseline Results

	(1)	(2)	(3)	(4)	(5)
Dependent variable: ln(area of territory flow)					
	Panel A: OLS				
ln(trade flow)	-0.343*	-0.441***	-0.408**	-0.439***	-0.458***
	(0.175)	(0.165)	(0.170)	(0.166)	(0.174)
ln(pop. of dest. country)	0.703***	0.762***	1.015***	0.699***	0.470*
	(0.175)	(0.176)	(0.281)	(0.220)	(0.267)
ln(pop. of orig. country)	0.285	0.293	0.459	0.294	0.494*
	(0.197)	(0.194)	(0.340)	(0.209)	(0.257)
ln(bilateral distance)	-0.514*	-0.549*	-0.640**	-0.550*	-0.541*
	(0.295)	(0.296)	(0.296)	(0.318)	(0.317)
Sharing border dummy		0.695	0.765	0.669	0.690
		(0.752)	(0.746)	(0.772)	(0.753)
Sharing language dummy		1.255*	1.335*	1.284*	1.299*
		(0.756)	(0.748)	(0.741)	(0.772)
Sharing legal system dummy		-1.175*	-1.452**	-1.129*	-1.153*
		(0.599)	(0.655)	(0.621)	(0.654)
Territory flow contiguous with dest. country		-1.334	-1.681	-1.203	-0.988
		(0.990)	(1.038)	(1.047)	(1.046)
Territory flow contiguous with orig. country		-0.580	-0.660	-0.621	-0.821
		(0.831)	(0.825)	(0.843)	(0.848)
ln(iron & steel production of dest. country)			-0.164		
			(0.130)		
ln(iron & steel production of orig. country)			-0.127		
			(0.168)		
ln(military expenditure of dest. country)				0.0605	
				(0.146)	
ln(military expenditure of orig. country)				0.00599	
				(0.107)	
ln(petroleum consumption of dest. country)					0.226
					(0.160)
ln(petroleum consumption of orig. country)					-0.151
					(0.176)
Observations	308	304	304	304	304
R-squared	0.467	0.489	0.493	0.490	0.496
	Panel B: Tobit §				
ln(trade flow)	-0.371**	-0.482***	-0.441***	-0.481***	-0.496***
	(0.152)	(0.157)	(0.159)	(0.157)	(0.161)
Observations	308	304	304	304	304

Destination (dest.) country is the side that receives the territory, while origin (orig.) country is the side that cedes the territory. Trade flow is defined as the volume of exports from the origin country to the destination country. § Panel B uses the same specifications as those of the corresponding columns in Panel A, except that the estimation is conducted with Tobit. To save space, only the coefficients of territory flows are reported in Panel B. In both panels, continent × decade fixed effects are included in estimation. Constant terms are not reported. Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

extensive margin of trade statistics, as its variation comes only from whether trade occurs or not, with all continuous variations excluded. As shown, with all else held equal, having a positive trade flow is linked to a 120 to 160 percent smaller territory flow.

We then turn to the intensive margin of trade statistics that uses only continuous variations. Zero trade values might arise because the customs agency failed to record the trade for technical reasons (e.g., small-value transactions were rounded to zero) or artificial reasons (e.g., smuggling). Missing values have an even more ambiguous nature. The variations in positive trade records have the benefit of easy interpretation. Considering only the observations with positive trade flows (*Spec 2*), the substitution elasticity is still -0.3 to -0.5, as under the baseline specification.

We next consider average trade flows between origin countries and destination countries. Over the 139 years, most country pairs have more than one trade record. We take the average of those recorded trade flows, first considering only positive flows (*Spec 3*) and then including all flows (*Spec 4*). We provide the two sets of results, which lead to the same findings. Lastly, we use the maximum bilateral trade flows (*Spec 5*). The maximum measure is concerned only with positive flows, but has the advantage of capturing the largest capacity of the bilateral trade relation. The magnitude remains close to those in Table 2.

Table 3: Robustness I — Measurement

	(1)	(2)	(3)	(4)
Dependent variable: ln(area of territory flow)§				
Additional control variables∆	No	Yes	No	Yes
Estimation	OLS	OLS	Tobit	Tobit
Spec 1: Dummy of having positive trade flow	-1.189*	-1.395**	-1.349**	-1.600***
	(0.614)	(0.651)	(0.570)	(0.583)
Spec 2: ln(trade flow) if having positive trade flow	-0.335*	-0.441***	-0.364**	-0.482***
	(0.180)	(0.165)	(0.155)	(0.157)
Spec 3: ln(average trade flow over years) if having positive trade flow	-0.355**	-0.425***	-0.387**	-0.464***
	(0.157)	(0.158)	(0.150)	(0.151)
Spec 4: ln(average trade flow over years)	-0.365**	-0.424***	-0.396***	-0.463***
	-0.153	-0.158	-0.148	-0.151
Spec 5: ln(maximum trade flow over years)	-0.350**	-0.400***	-0.385***	-0.440***
	-0.144	-0.145	-0.14	-0.14

§ As before, trade flow is defined as the volume of exports from the territory-ceding country to the territory-receiving country. ∆ The specifications of columns (1) to (4) in this table correspond, respectively, to the following columns of Table 2: column (1) in Panel A, column (2) in Panel A, column (1) in Panel B, and column (2) in Panel B. To save space, only the coefficients of territory flows are reported. Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

Territory flows do not necessarily involve military conflicts. They could occur voluntarily, such as the Alaska Purchase, or they could be involuntary but result from non-military political negotiations, such as the return of Hong Kong to China. Trade is known to promote peace (see Hirschman (1982), Martin et al. (2008a,b), and Glick and Taylor (2010) among others) but the role of trade in reducing territorial exchange is not due to its role in reducing military conflicts. In fact, 226 out of the 308 territory flows in our sample occurred peacefully. In Table 4, we include only peaceful territory flows. Columns (1) to (2) (respectively, (3) to (4)) in the table correspond to Panel A (respectively Panel B) of Table 2. Our previous results still hold, with slightly greater magnitudes. In other words, when a country imports more goods from another country, it has a weaker demand for that country's territory regardless of the means it could use to obtain it.

Both trade and territory flows depend on the global political landscape. In Table 5, we interact trade with dummy variables corresponding to different global political phases: pre-WWI and WWI (before 1919), the interwar period and WWII (1919 to 1945), the Cold War (1945 to 1991), and post-Cold War (1991-2008). The first phase is known as the time of "first globalization" while the second phase was fraught with military disputes, trade protectionism, economic crises, and world power reconfigurations. These two groups appear to have slightly weaker results compared with the reference group (the post-Cold War phase).

Some country pairs have more than one territory flow, which renders panel-data methods applicable. In Table 6, we experiment with three panel-data methods: random effects of within-estimation, fixed effects of within-estimation, and between-estimation. The within-estimation methods use within-pair variations, while the between-estimation method uses cross-pair variations. The statistical magnitude and significance of the coefficient of interest $\hat{\beta}$ perform stably. In particular, the pair fixed effect estimation (columns (3) and (4)) addresses all pair-specific observables and unobservables, the results of which support the previous baseline findings.

We also check whether the reverse direction of trade flows produces similar re-

Table 4: Robustness II — Peaceful Territory Flows Only

	(1)	(2)	(3)	(4)
Dependent variable: ln(area of territory flow)				
Estimation	OLS		Tobit	
ln(trade flow)	-0.373*	-0.493***	-0.403**	-0.536***
	(0.201)	(0.175)	(0.160)	(0.158)
ln(pop. of dest. country)	0.449**	0.610***	0.500**	0.698***
	(0.219)	(0.221)	(0.208)	(0.205)
ln(pop. of orig. country)	0.290	0.311	0.290	0.297
	(0.245)	(0.217)	(0.208)	(0.204)
ln(bilateral distance)	-0.531	-0.494	-0.529	-0.490
	(0.342)	(0.342)	(0.326)	(0.327)
Sharing border dummy		1.513		1.803**
		(1.091)		(0.907)
Sharing language dummy		1.716*		1.968**
		(0.926)		(0.823)
Sharing legal system dummy		-1.833**		-2.081***
		(0.776)		(0.665)
Territory flow contiguous with dest. country		-2.225*		-2.489***
		(1.261)		(0.934)
Territory flow contiguous with orig. country		-0.818		-0.871
		(0.965)		(0.888)
Observations	226	222	226	222

Columns (1) to (2) correspond to columns (1) to (2) in Panel A of Table 2, while columns (3) to (4) correspond to columns (1) to (2) in Panel B of Table 2. Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

sults. Recall that the origin (destination) country has so far been defined as the side that exports (imports) goods and loses (gains) territories. This alignment is designed to detect potential substitution between goods and territory flows. That is, as the two flows have the same direction, one can find whether the recipient who receives more of one flow demands less of the other flow. Since trade has a tendency to be balanced, owing to balance of payments conditions, we do not expect reversing the trade flows—that is, redefining origin (destination) country as the side that *imports* goods and loses territories—to make a remarkable difference. Indeed, as shown in Table 7, countries that import more from a country lose less territory to that country. The interpretation of the findings hardly changes. Conceivably, economic interests associated with exports all have counterparts associated with imports (e.g.,

Table 5: Robustness III — Global Politics

	(1)	(2)	(3)	(4)
Dependent variable: ln(area of territory flow)				
	OLS		Tobit	
ln(trade flow)	-0.942***	-0.784**	-0.983***	-0.791**
	(0.354)	(0.374)	(0.344)	(0.355)
ln(trade flow) × Dummy(before 1919)	0.771	0.397	0.833*	0.404
	(0.548)	(0.614)	(0.467)	(0.517)
ln(trade flow) × Dummy(1919 to 1945)	0.752	0.370	0.791*	0.350
	(0.477)	(0.498)	(0.424)	(0.450)
ln(trade flow) × Dummy(1945 to 1991)	0.699	0.553	0.649	0.453
	(0.468)	(0.496)	(0.439)	(0.462)
ln(pop. of dest. country)	0.681***	0.744***	0.733***	0.813***
	(0.174)	(0.183)	(0.171)	(0.175)
ln(pop. of orig. country)	0.275	0.289	0.291*	0.299*
	(0.192)	(0.194)	(0.171)	(0.176)
ln(bilateral distance)	-0.322	-0.434	-0.325	-0.457
	(0.295)	(0.336)	(0.327)	(0.352)
Sharing border dummy		0.800		0.877
		(0.765)		(0.672)
Sharing language dummy		0.968		1.190
		(0.795)		(0.780)
Sharing legal system dummy		-1.160*		-1.310**
		(0.645)		(0.579)
Territory flow contiguous with dest. country		-1.329		-1.478*
		(0.975)		(0.819)
Territory flow contiguous with orig. country		-0.527		-0.535
		(0.847)		(0.741)
Observations	308	304	308	304

Columns (1) to (2) correspond to columns (1) to (2) in Panel A of Table 2, while columns (3) to (4) correspond to columns (1) to (2) in Panel B of Table 2. Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

Table 6: Robustness IV — Different Methods

	(1)	(2)	(3)	(4)	(5)	(6)
Dependent variable: ln(area of territory flow)						
Method:§	Within-estimation				Between-estimation	
	Pair random effects		Pair fixed effects			
ln(trade flow)	-0.350**	-0.450***	-0.440**	-0.477**	-0.442**	-0.537***
	(0.157)	(0.164)	(0.204)	(0.187)	(0.192)	(0.204)
ln(pop. of dest. country)	0.697***	0.751***	-0.245	-0.608	0.751***	0.836***
	(0.181)	(0.186)	(1.438)	(1.382)	(0.214)	(0.225)
ln(pop. of orig. country)	0.273	0.285	-0.392	-0.243	0.230	0.310
	(0.183)	(0.191)	(1.493)	(1.431)	(0.215)	(0.226)
ln(bilateral distance)	-0.521	-0.539		n/a	-0.790**	-0.765*
	(0.321)	(0.337)			(0.375)	(0.388)
Sharing border dummy		0.692		n/a		0.0847
		(0.726)				(0.872)
Sharing language dummy		1.349*		n/a		1.713*
		(0.796)				(0.885)
Sharing legal system dummy		-1.010*		n/a		-0.710
		(0.611)				(0.712)
Territory flow contiguous with dest. country		-1.365		-1.562		-0.0956
		(0.846)		(1.016)		(1.504)
Territory flow contiguous with orig. country		-0.687		-1.976**		-1.488
		(0.775)		(0.929)		(1.260)
Observations	308	304	308	304	308	304

§With each method, the specifications used here correspond to the columns (1) and (2) of Table 2, respectively. As before, trade flow is defined as the volume of exports from the territory-ceding country to the territory-receiving country. Constant terms are not reported. Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

producers who seek suppliers are as eager as producers who seek buyers).

It should be noted that the results from reversed trade flows in Table 7 also help check whether the following accounting issue contaminates our previous findings. In some months during the year of the territory flow, territory-ceding countries might no longer count the goods exported by their lost territories to the territory-receiving countries as their exports. Although the goods produced by a single territory are unlikely to generate a substitution elasticity as large as -0.3 to -0.5 (as reported in previous tables), we would like to ascertain whether such a mechanical correlation drove our results. As shown in Table 7, the previous findings re-

main in terms of magnitude as well as sign. The substitution elasticity is still in the -0.3 to -0.5 range. Also in this vein, we revised specification (1) by lagging and forwarding $TradeFlow_{i(f),j(f),t}$ along the t dimension. $TradeFlow_{i(f),j(f),t-k}$ and $TradeFlow_{i(f),j(f),t+k}$ are highly correlated with $TradeFlow_{i(f),j(f),t}$ but do not have any ambiguity in dealing with the timing of the territory flow. Specifically, for a given territorial exchange between i and j in year t, $TradeFlow_{i(f),j(f),t-k}$ attributes the exports by the focal territory f to the origin side, while $TradeFlow_{i(f),j(f),t+k}$ attributes them to the destination side. Replacing $TradeFlow_{i(f),j(f),t}$ with either $TradeFlow_{i(f),j(f),t-k}$ or $TradeFlow_{i(f),j(f),t+k}$, the correlation captured by the coefficient of trade flow is not confounded by the ambiguity in the accounting of the territory's merchandise. The results for $k = 1, 2, 3$, and 4, as reported in Table 8, retain the previous negative correlation in both sign and magnitude.[12]

The last robustness check in this section stems from an audacious experiment. The empirical specification we have used aims to examine the relationship between territory flow and trade flow conditional on the presence of territory flow. Econometrically speaking, what interests us is a conditional correlation: given a territorial exchange, how the size of the exchanged territory depends on the bilateral trade between the two countries. It is tempting to incorporate the "idle time" of the territorial exchangers. That is, country pairs having territory flows in certain years, although not having territory flows in other years, could stay in the sample as zero territory flow observations. This experiment extrapolates our thesis to an additional margin but does have a technical merit: it lets zero territory flows speak.[13]

To undertake this experiment, we insert zero territory flows into our sample.

[12]The coefficients of forwarded trade flow are slightly smaller than those of lagged trade flow, though the differences remain in each other's standard errors.

[13]The gravity model literature emphasizes the rationalization of zero trade flows because standard trade theories cannot explain zero trade flows without resorting to concepts such as fixed costs and chock prices (see Anderson and Zhang (2022) for a review). In other words, given the reciprocity of international trade, the absence of trade between countries constitutes a grave puzzle. In contrast, so long as borders are well-defined and consensus-based for two countries, territorial exchange is bound *not* to occur between them. In other words, territorial exchange is rarely reciprocal, so that the absence of territorial exchange between countries is normal.

First of all, inserting a zero territory flow observation for every idle year of every country pair in our data would over-expand the sample space. In that scenario, a country pair that appears only once (one out of the 139 years) in our data would receive 138 zero territory flow observations. There are 201 country pairs in our data, such that the sample size would rise to at least $201 \times 139 = 27,939$ even though the valid observations (actual territory flows) remain as few as 308. Filling zeros in that superfluous fashion would result in severe inference errors.[14] We find it more reasonable to insert a zero territory flow for each given pair per idle *decade*. That is, a country pair that appears only once (one out of the 14 decades) receives 13 zero territory flow observations. Decadal averages of time-variant country characteristics are used to generate explanatory variables for those inserted observations. Since some country pairs have multiple territory flows, the resulting sample size is $3,055$, slightly larger than $201 \times 14 = 2,814$.

The results from this artificial sample is reported in Table 9. As expected, the substitution elasticity shrinks in magnitude to the range of -0.14 to -0.21. That is, a 10-percent increase in trade flow is associated with a one to two percent decrease in territory flow. In addition, we run a Probit model that uses only the extensive margin of the artificial sample. Large trade flows turn out to be associated with more zero territory flows. These findings are consistent with our expectation and previous results, even though one should keep in mind that the fashion of zero insertion may heavily influence these findings. Owing to this caveat, we limit the practice of zero insertion to this last robustness check. Elsewhere in this paper, we maintain that our thesis is conditional on having actual territory flows.

[14] In theory, both type-I or type-II errors may arise, depending on the relative rates of trade flows and territory flows growing sparse when zero territory flow observations are being inserted.

Table 7: Robustness V — Reversed Trade Flows

	(1)	(2)	(3)	(4)	(5)
Dependent variable: ln(area of territory flow)					
	Panel A: OLS				
ln(trade flow)	-0.390**	-0.474***	-0.464***	-0.493***	-0.511***
	(0.174)	(0.165)	(0.167)	(0.175)	(0.173)
ln(pop. of dest. country)	0.739***	0.805***	1.105***	0.763***	0.485*
	(0.181)	(0.181)	(0.288)	(0.232)	(0.270)
ln(pop. of orig. country)	0.240	0.232	0.448	0.182	0.433
	(0.207)	(0.205)	(0.346)	(0.223)	(0.270)
ln(bilateral distance)	-0.569**	-0.620**	-0.731***	-0.667**	-0.616**
	(0.279)	(0.280)	(0.276)	(0.307)	(0.295)
Sharing border dummy		0.642	0.721	0.578	0.628
		(0.746)	(0.738)	(0.766)	(0.745)
Sharing language dummy		1.251	1.350*	1.290*	1.293
		(0.774)	(0.761)	(0.758)	(0.791)
Sharing legal system dummy		-1.164*	-1.504**	-1.091*	-1.118*
		(0.598)	(0.648)	(0.619)	(0.653)
Territory flow contiguous with dest. country		-1.306	-1.723*	-1.195	-0.913
		(0.986)	(1.034)	(1.046)	(1.049)
Territory flow contiguous with orig. country		-0.544	-0.670	-0.569	-0.815
		(0.834)	(0.825)	(0.841)	(0.850)
ln(iron & steel production of dest. country)			-0.191		
			(0.129)		
ln(iron & steel production of orig. country)			-0.157		
			(0.165)		
ln(military expenditure of dest. country)				0.0530	
				(0.150)	
ln(military expenditure of orig. country)				0.0506	
				(0.112)	
ln(petroleum consumption of dest. country)					0.253
					(0.161)
ln(petroleum consumption of orig. country)					-0.150
					(0.178)
Observations	308	304	304	304	304
R-squared	0.469	0.490	0.497	0.492	0.499
	Panel B: Tobit §				
ln(trade flow)	-0.407**	-0.500***	-0.486***	-0.526***	-0.534***
	(0.157)	(0.162)	(0.162)	(0.166)	(0.168)
Observations	308	304	304	304	304

Destination (dest.) country is the side that receives the territory, while origin (orig.) country is the side that cedes the territory. That is, destination and origin are defined in terms of territory flow. Unlike in previous tables, the trade flow here is defined as the volume of exports from the destination country to the origin country. § Panel B uses the same specifications as those of the corresponding columns in Panel A, except that the estimation is conducted with Tobit. To save space, only the coefficients of territory flows are reported in Panel B. In both panels, continent × decade fixed effects are included in estimation. Constant terms are not reported. Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

Table 8: Robustness VI — Backward and Forward Trade Flows

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Dependent variable: ln(area of territory flow)								
				Panel A: OLS				
ln(trade flow), lagged by 4 years	-0.446***							
	(0.168)							
ln(trade flow), lagged by 3 years		-0.395**						
		(0.183)						
ln(trade flow), lagged by 2 years			-0.417**					
			(0.162)					
ln(trade flow), lagged by 1 year				-0.462***				
				(0.155)				
ln(trade flow), forwarded by 1 year					-0.393**			
					(0.153)			
ln(trade flow), forwarded by 2 years						-0.303*		
						(0.156)		
ln(trade flow), forwarded by 3 years							-0.400***	
							(0.151)	
ln(trade flow), forwarded by 4 years								-0.352**
								(0.152)
Observations	304	304	304	304	304	304	304	304
R-squared	0.488	0.484	0.486	0.491	0.489	0.486	0.479	0.487
				Panel B: Tobit				
ln(trade flow), lagged or forwarded, as in Panel A	-0.494***	-0.428***	-0.445***	-0.513***	-0.430***	-0.329**	-0.436***	-0.390***
	(0.162)	(0.162)	(0.162)	(0.154)	(0.152)	(0.159)	(0.150)	(0.149)

Specifications follow column (2) in Table 2, except trade flows are either lagged or forwarded (noted in the table). As before, trade flow is defined as the volume of exports from the territory-ceding country to the territory-receiving country. To save space, only the coefficients of trade flows are reported. The coefficients reported in Panel B correspond to the same lagged or forwarded settings in Panel A. ** p<0.05, * p<0.1.

Table 9: Robustness VII — With Zero Territory Flows Included

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	OLS			Tobit			Probit		
Dependent variable:	ln(area of territory flow)			ln(area of territory flow)			Having territory flow (1) or not (0)		
ln(trade flow)	-0.137***	-0.191***	-0.209***	-1.079***	-1.491***	-1.669***	-0.0981***	-0.134***	-0.151***
	(0.0285)	(0.0298)	(0.0317)	(0.211)	(0.234)	(0.249)	(0.0183)	(0.0190)	(0.0204)
ln(pop. of dest. country)		0.166***	0.172***		1.132***	1.154***		0.0906***	0.0933***
		(0.0342)	(0.0355)		(0.272)	(0.275)		(0.0233)	(0.0238)
ln(pop. of orig. country)		0.156***	0.167***		1.121***	1.198***		0.101***	0.108***
		(0.0367)	(0.0379)		(0.270)	(0.279)		(0.0242)	(0.0252)
ln(bilateral distance)		-0.0189	-0.0409		-0.202	-0.524		-0.0205	-0.0461
		(0.0519)	(0.0680)		(0.386)	(0.442)		(0.0335)	(0.0402)
Sharing border dummy			0.151			0.345			0.0272
			(0.155)			(1.122)			(0.0988)
Sharing language dummy			0.109			0.682			0.0719
			(0.137)			(1.089)			(0.0976)
Sharing legal system dummy			-0.125			-0.324			-0.0375
			(0.111)			(0.853)			(0.0744)
Territory flow contiguous with dest. country			-0.257			-3.132**			-0.283**
			(0.194)			(1.303)			(0.123)
Territory flow contiguous with orig. country			-0.127			0.0410			0.0304
			(0.176)			(1.144)			(0.106)
Observations	3,055	3,023	2,993	3,055	3,023	2,993	3,055	3,023	2,993

Destination (dest.) country is the side that receives the territory, while origin (orig.) country is the side that cedes the territory. Trade flow is defined as the volume of exports from the origin country to the destination country. Continent × decade fixed effects are included in estimation. Constant terms are not reported. Robust standard errors in parentheses. *** p<0.01, ** p<0.05.

4 Correlation or Causality?

In the previous section, a robust negative correlation has been established between territory flow and trade flow. A natural question arises as to whether the correlation indicates causality. Identifying a causal relationship in a cross-country pair setting is always challenging, since there are numerous confounding factors at the global scale and natural experiments across countries are never as clean as those within a country, city, or town. In this section, we describe the identification experiments we conducted, report our findings, and discuss why they may signify a causal effect of trade flows on territory flows.

To put the identification challenge into perspective, consider diplomatic relations within country pairs as an example of confounding factors in our context. All else held equal, country pairs with close diplomatic ties tend to exchange less territories, because they are more likely to reach an amicable solution—for instance, clarifying one or two ambiguous border segments to avoid handing over a significant amount of land. In the meantime, country pairs with closer diplomatic ties tend to trade more with each other, because their governments may facilitate, or at least impose fewer barriers on, their bilateral commerce. Endogeneity arises because diplomatic relations between country pairs, which correlate with both territorial flow and trade flow, are omitted from the regression. This prevents us from interpreting previous results as the causal effects of trade flows on territorial flows. Other sources of endogeneity, such as ethnic conflicts and religious hatred, are similar to diplomatic relations.[15]

To address identification challenges, we implement four different identification strategies. The first strategy (henceforth, strategy A) is to use "trade remoteness" of

[15] Not all omitted variables cause endogeneity; only those that generate spurious correlations between bilateral territory flow and bilateral trade flow do. For instance, a country with plentiful good seaports tends to trade more with the rest of the world than other countries, but those seaports cause no identification problem here unless they influence the geopolitical situation of the country with respect to some other countries.

country i and country j, respectively, to instrument their bilateral trade flow. Countries with relatively worse trade cost conditions are referred to in the international trade literature as being remote from the rest of the world. Such country-specific (rather than pair-specific) trade amenity can instrument the trade flow between two countries, as it is correlated with bilateral trade flow but unrelated to bilateral non-trade relations such as territory flows.[16]

We follow Redding and Venables (2004) to construct inverse remoteness measures for the exporting side (aka., *supply capacity* or SC) and the importing side (aka., *market potential* or MP). Specifically, we estimate a gravity equation using the trade flows among countries during our sample period (1870 to 2008):

$$\ln TradeFlow_{ij,t} = \rho \ln Dist_{ij} + SC_{i,t} + MP_{j,t} + \varepsilon_{ij,t}, \tag{2}$$

where $Dist_{ij}$ is the bilateral distance between country i and country j, $SC_{i,t}$ and $MP_{j,t}$ are the exporter-year and importer-year fixed effects, respectively, and $\varepsilon_{ij,t}$ is the error term. The estimated fixed effect $\widehat{SC_{i,t}}$ is the supply capacity of the exporting country i in year t, while the estimated fixed effect $\widehat{MP_{j,t}}$ is the market potential of the importing country j in year t. Intuitively, the two estimated fixed effects capture, respectively, the export-side proximity to the rest of the world and the import-side proximity to the rest of the world. They are expected to be related to the territory flow between the two countries solely through the trade flow between them, and therefore are used in this study to instrument $\ln TradeFlow_{ij,t}$ in our 2SLS estimation.

Our second strategy (henceforth, strategy B) is to use the timing of containerization of country i and country j, respectively, to instrument their bilateral trade flow. The technology of containerization (i.e., sealing traded goods in standardized metal boxes for transport) is a major factor contributing to the tremendous growth in international trade after WWII (Bernhofen, El-Sahli, and Kneller, 2016). The use

[16] Similar instrument strategies have been used in Romer and Frankel (1999) and Hanson (2005).

of containers minimizes the costs of intermodal changes during freight transportation, such as from ships to rail, ships to trucks, rail to trucks, and vice versa. Containerization also reduces the pilferage, damage, and theft that were common in the pre-container era of international trade. Given the same transport equipment and infrastructure, containerization substantially improves port efficiency, and the improvement is further compounded by national and global adoption of the technology. The diffusion of containerization technology took more than half a century, beginning in the US and gradually expanding to the rest of the world, creating variations for each country between its pre- and post-containerization periods.[17] Specifically, we construct $AD_{i,t}$ as a dummy variable denoting whether country i has adopted containerization by year t, and $AD_{j,t}$ denoting that for country j in year t. As civil transport cost shifters, $AD_{i,t}$ and $AD_{j,t}$ are expected to be correlated with territory flow only through the trade flow between the two countries, and therefore are used to instrument $\ln TradeFlow_{ij,t}$ in our 2SLS estimation.

Our third strategy (henceforth, strategy C) is to use the accessibility of the Suez Canal and the Panama Canal to instrument the trade between country i and country j. The Suez Canal was opened in 1869 and closed between 1967 and 1975 due to the Six-Day War. The Panama Canal was opened in 1920 and remained open through the end of our sample period except for a one-day closure in 1989.[18] Both canals greatly facilitated world trade (Hugot and Dajud, 2016; Feyrer, 2021). They might or might not be relevant to the trade route between given country i and country j, and if either canal was relevant to them, the relevance exists only if their year t (when the two countries exchanged territory) is after the opening of the canal and not a closure year thereof. Specifically, we define $Suez_{ij,t}$ (or $Panama_{ij,t}$) such that it equals 1 if the shortest trade route between countries i and j is through the Suez (or Panama) Canal and the canal was open in year t, and 0 otherwise.[19] Since $Suez_{ij,t}$

[17] Our data source is Appendix Table 3 of Bernhofen, El-Sahli, and Kneller (2016), which provides the years of 157 countries when they processed container cargo via port or railway for the first time.

[18] The Panama Canal was opened in 1914, but was not fully opened to commercial traffic until 1920.

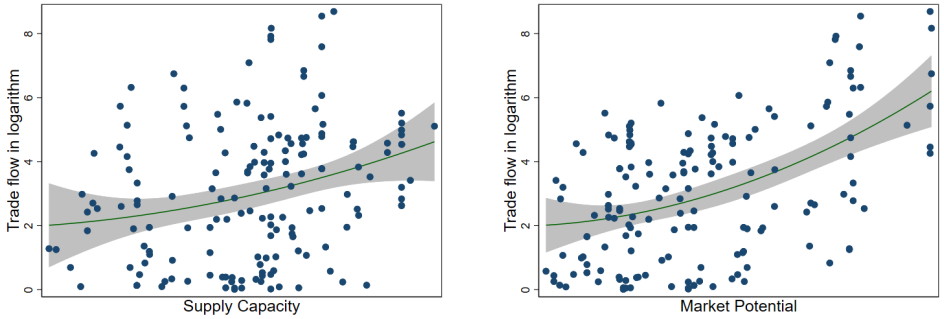
[19] We determine trade routes using the current and historical trade route maps in Rodrigue (2020).

and $Panama_{ij,t}$, resting on the shortest route between the two countries and the opening or closure timing of the canals, is unlikely to influence the territory flow between the two countries except through their trade flow, we use them to instrument $\ln TradeFlow_{ij,t}$ in our 2SLS estimation.

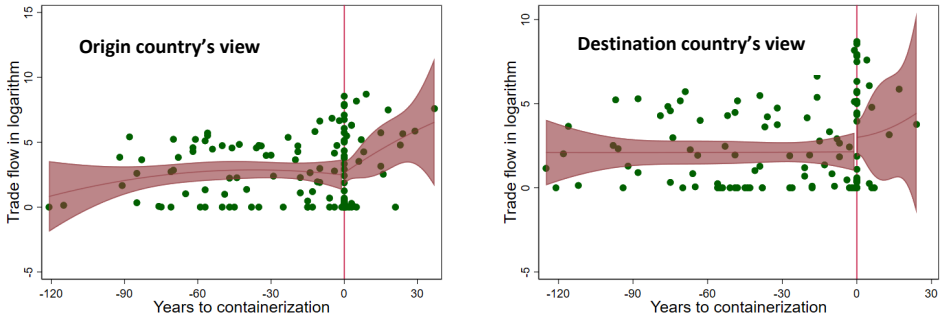
Our fourth strategy (henceforth, strategy D) is to use all the instruments employed in the three previous strategies. Needless to say, the validity of this fourth instrumental strategy relies on the validity of the previous three. To demonstrate the relationship between the three instruments with trade flow, we plot $\ln TradeFlow_{ij,t}$ against each of them in Figure 4. They all show positive associations with trade flows, meeting the relevance condition of valid instruments. Later we will formally test those relevance conditions. Since each instrumental strategy involves more than one instrument, the exclusion condition of our instruments can also be formally tested (through testing overidentifying restrictions) as we report later.

The 2SLS results are reported in Table 10. Columns (1) and (2) in the table reproduce columns (1) and (2) of Table 2 (OLS estimates) for the purpose of comparison. Their 2SLS counterparts are reported in columns (3) to (10), two at a time corresponding to each instrumental strategy. Three observations are in order. First and foremost, the 2SLS regressions, as shown in Panel A, produce results similar to the previous OLS results. This supports the causal interpretation of our previous OLS results. The 2SLS coefficients appear to have greater magnitudes, although the differences remain within one standard error. In particular, we conduct Durbin χ^2-test and Wu-Hausman test to detect endogeneity in the OLS results, and the test results, as shown in Panel B, do not find statistically noticeable endogeneity. Intuitively, as the OLS results and the 2SLS results are close to each other, endogeneity does not constitute a significant concern. Notice that these endogeneity tests rely on the validity of our instruments. We also test for weak instruments (first stage F-test) and exogeneity instruments (the Hansen J-test for overidentification), the p-values from which reject weak endogeneity and do not reject exogeneity in instruments under any of the four strategies, as reported in the rest of Panel B.

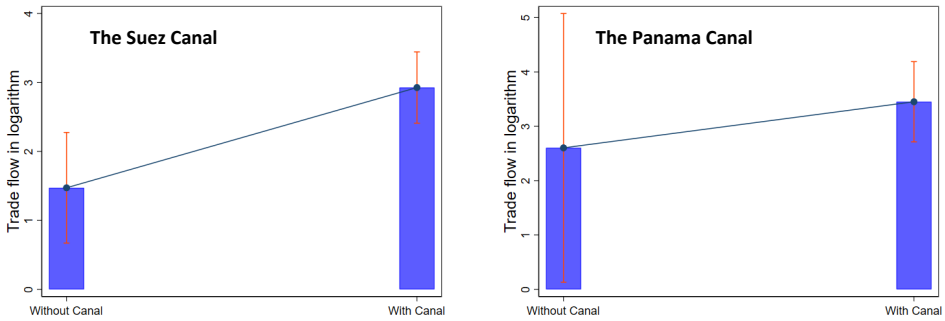
Figure 4: Relevance of Instruments to Trade Flows



Instrumental Strategy A: Inverse Remoteness



Instrumental Strategy B: Containerization



Instrumental Strategy C: Canals

Notes. *Upper Panel*: Trade flows in natural logarithm are plotted against inverse remoteness measures (supply capacity and market potential). Remoteness measures were estimated using a gravity model (see the text for details). Each dot represents an origin-destination-year pair. Quadratic predictions (with 95% confidence intervals) are included as fitting curves. *Middle Panel*: Trade flows in natural logarithm are plotted against years before and after containerization. The year of containerization is at the country level, and thus the left (right) plot considers each origin (destination) country as a country in question. Each dot represents a country-year. *Bottom Panel*: The Suez (Panama) Canal is considered in the left (right) plot. Origin-destination-year level observations are divided into without canal and with canal phases. Bilateral trade flow is compared between the two phases: solid bars represent ln(average trade flows), with 95% confidence intervals marked as line segments at the top of the solid bars.

To conclude this section, does a larger trade flow *cause* a smaller territory flow? On the one hand, our statistical tests give an affirmative answer. We follow frontline literature in international trade to address endogeneity in trade flows. The portion of trade flows attributed to exogenous forces demonstrates a negative association with bilateral territory flows. The results reported in Table 10 have reached the econometric criterion of today for identifying causality. We observe, practice, and trust this criterion. On the other hand, we would like to be conservative in interpreting the causality. Our sample is retrospective, has a limited size, and speaks to a political phenomenon at the global scale. No variation in our setting is as exogenous as lab- or field-controlled experiments, or as exogenous as natural disasters that are uncontrollable but largely unaffected by human activities. Another caveat we should be aware of is that trade flows can influence various macroeconomic and microeconomic aspects of the polities involved, in known and unknown ways and through partial equilibrium and general equilibrium channels, and so can territory flows. In our setting, all things considered, we find it fair to say that the correlation between trade flows and territory flows is more likely to be driven by a causality going from trade flows to territory flows than by a causality in the other direction around or by a spurious correlation.

Table 10: Correlation or Causality: An Investigation

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Panel A: Results										
Dependent variable: ln(area of territory flow)										
	OLS reproduced for comparison		Instrumental strategy A (Inverse remoteness)		Instrumental strategy B (Containerization)		Instrumental strategy C (Canals)		Instrumental strategy D (All instruments)	
ln(trade flow)	-0.343*	-0.441***	-0.571***	-0.641***	-0.890**	-0.834*	-1.789**	-1.186+	-0.570***	-0.639***
	(0.175)	(0.165)	(0.140)	(0.140)	(0.449)	(0.448)	(0.870)	(0.798)	(0.139)	(0.138)
ln(pop. of dest. country)	0.703***	0.762***	0.444***	0.447***	0.530**	0.505**	0.902***	0.872***	0.444***	0.447***
	(0.175)	(0.176)	(0.152)	(0.154)	(0.216)	(0.227)	(0.246)	(0.215)	(0.152)	(0.154)
ln(pop. of orig. country)	0.285	0.293	0.338**	0.387**	0.449*	0.445**	0.679**	0.495*	0.338**	0.387**
	(0.197)	(0.194)	(0.165)	(0.169)	(0.231)	(0.218)	(0.332)	(0.278)	(0.165)	(0.169)
ln(bilateral distance)	-0.514*	-0.549*	-0.283	-0.242	-0.373+	-0.316	-0.535+	-0.632**	-0.282	-0.241
	(0.295)	(0.296)	(0.217)	(0.240)	(0.241)	(0.295)	(0.327)	(0.320)	(0.217)	(0.240)
Sharing border dummy		0.695		0.592		0.593		0.598		0.592
		(0.752)		(0.688)		(0.686)		(0.671)		(0.688)
Sharing language dummy		1.255*		0.492		0.617		1.369*		0.491
		(0.756)		(0.712)		(0.807)		(0.702)		(0.712)
Sharing legal system dummy		-1.175*		-0.544		-0.577		-1.362**		-0.544
		(0.599)		(0.489)		(0.496)		(0.563)		(0.489)
Territory flow contiguous with dest. country		-1.334		0.0205		-0.0756		-1.529*		0.0212
		(0.990)		(0.755)		(0.775)		(0.905)		(0.755)
Territory flow contiguous with orig. country		-0.580		-1.284*		-1.373**		-1.229		-1.283*
		(0.831)		(0.662)		(0.696)		(0.976)		(0.662)
Observations	308	304	308	304	308	304	308	304	308	304
R-squared	0.467	0.489	0.229	0.238	0.205	0.224	0.264	0.439	0.229	0.238
Panel B: Diagnostics										
First stage F-test, p-value§	n/a		0.000	0.000	0.002	0.003	0.081	0.033	0.000	0.000
Durbin Chi2-test, p-valueΔ			0.507	0.149	0.383	0.473	0.122	0.379	0.507	0.146
Wu-Hausman test, p-valueΔ			0.529	0.155	0.406	0.499	0.195	0.461	0.529	0.153
Hansen J-test, p-value£			0.786	0.973	0.748	0.753	0.966	0.577	0.977	0.980

OLS results in columns (1) and (2) are reproduced from columns (1) and (2) in Table 2, for the purpose of comparison. Their 2SLS counterparts are reported in columns (3) to (10), respectively. As before, trade flow is defined as the volume of exports from the territory-ceding country to the territory-receiving country. Robust standard errors in parentheses. § First stage F-test tests for weak instruments (null hypothesis: instruments are irrelevant). Δ Durbin Chi2-test and Wu-Hausman test test for endogeneity (null hypothesis: no endogeneity in OLS estimates). £ Hansen J-test tests overidentifying restrictions (null hypothesis: instruments are exogenous, assuming that at least one instrument is exogenous).*** p<0.01, ** p<0.05, * p<0.10, + p<0.15.

5 Potential Mechanism

The analysis presented in the previous sections shows that trade flows reduce the sizes of territorial exchanges. We attribute this finding to the institutional role of borders. Borders, just like laws, norms, and values, define rules that govern how economic agents interact with each other. Regardless of political regimes, economic agents, including producers, consumers, and governments, have the geographical scope of their behaviors subject to national borders. Redefining sovereign boundaries, which produces territorial exchanges, can rarely, if ever, serve the best of interests of all involved parities.[20] In contrast, trading goods is nearly always reciprocal between countries, serving the interests of all involved parties. Thus, countries with more trade linkages are expected to seek non-territorial solutions. When alternative solutions are exhausted and countries must resort to a territorial exchange, countries within a good trade relationship will keep the territorial exchange limited and restrained in order to preserve the relationship. In our view, this is the mechanism through which trade flows reduce territory flows. In short, countries with large joint trade interests seek to avoid large territorial exchanges.

It should be noted that the mechanism we speculate above is inspired by the political science literature rather than the economic literature. Studies by political scientists, including Keohane (1984), Simmons (2005), Gavrilis (2008), and Schultz (2015), contend that borders, as a unique type of international institutions, create the foundation for cooperation by reducing uncertainties. Implied by their thesis, as we argue, countries trading heavily with each other, thus having more joint economic interests, avoid overhauling existing borders and/or exchanging large pieces of territories. It may seem surprising that this incentive mechanism was not raised by economists. But as economists, we recognize clearly the reason why economists

[20] Even if two countries reach a territorial deal that seems mutually beneficial, one or the other (especially the territory-ceding country) may change their views later. A prime example is the Russian sale of Alaska to the United States. The Russian attitude toward this deal has been largely negative since the Soviet era (see Znamenski (2009) for a review).

have long sidestepped this issue: as explained in Section 4, the identification concern is compelling. The frontline studies in empirical international trade helped us overcome some of the identification challenges, even though we do not have a perfect cure for endogeneity.

Our pursuit of the potential mechanism goes beyond speculation. We next use contemporary trade flows and territory flows between two countries to predict whether they will have at least a trade agreement by the end of our sample period:

$$\mathbb{P}_{i(f),j(f),2008}(\text{having agreement}) = \Phi(\varkappa_1 \ln TradeFlow_{i(f),j(f),t} + \varkappa_2 \ln TerriArea_{f,t} + \varkappa_3 \ln TradeFlow_{i(f),j(f),t} \times \ln TerriArea_{f,t} + ...), \quad (3)$$

where $\mathbb{P}(\cdot)$ denotes probability, $\Phi(\cdot)$ represents a Probit model, and the ellipsis represents control variables (such as gravity factors) and the error term. We hypothesize $\varkappa_2 < 0$. That is, given a territory exchange, exchanging a smaller one is more conducive to signing future trade agreements. The interaction term is added to absorb any interplay of the two forces in impacting future economic cooperations–recall that the two flows, as two separate regressors here, are correlated as found earlier.

The results are reported in Table 11, where both preferential trade agreement (PTA) and free trade agreement (FTA) are considered.[21] As expected, larger territory flows reduce the probability of signing trade agreements in the future, indicating that they may result in long-lasting disruptions in bilateral relations. In this sense, borders, and more generally sovereign boundaries, should remain stable and secure. Redefining territorial sovereignty may be legitimate and even necessary under certain circumstances; nonetheless, letting territories flow risks worsening the trajectories of economic cooperation across countries.

[21] Our data source for trade agreements is Gurevich and Herman (2018). The trade agreement database is publicly available at https://www.usitc.gov/data/gravity/dgd.htm. This database follows the WTO's "Regional Trade Agreements Information System 2017" to define PTA as regional trade agreements recognized by the WTO, and FTA as a group of customs zones where tariffs for all products are suspended for all members of the agreement.

Table 11: Mechanism

	(1)	(2)
Dependent variable:		
having (1) or not having (0) at least one future →	Preferential trade agreement	Free trade agreement
ln(trade flow)	0.530***	0.557**
	(0.205)	(0.221)
ln(area of territory flow)	-0.129**	-0.120**
	(0.0538)	(0.0504)
ln(trade flow) × ln(area of territory flow)	-0.0276	-0.0354
	(0.0241)	(0.0236)
ln(pop. of dest. country)	0.0478	0.121
	(0.0935)	(0.0948)
ln(pop. of orig. country)	0.105	0.186**
	(0.0855)	(0.0810)
ln(bilateral distance)	-0.579***	-0.477**
	(0.190)	(0.189)
Sharing border dummy	1.070***	1.017***
	(0.355)	(0.366)
Sharing language dummy	1.265***	1.259***
	(0.447)	(0.429)
Sharing legal system dummy	-0.274	-0.535*
	(0.287)	(0.300)
Territory flow contiguous with dest. country	-2.163***	-1.064*
	(0.589)	(0.633)
Territory flow contiguous with orig. country	-0.165	-0.180
	(0.513)	(0.429)
Observations	216	199

Destination (dest.) country is the side that receives the territory, while origin (orig.) country is the side that cedes the territory. Trade (territory) flow is defined as the volume of exports (area of territory) from the origin country to the destination country. Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

6 Independence

Territory flows in previous sections all have origin countries and destination countries. A unique type of territory flow occurs when the lost territories become their own destination countries by declaring independence. The JSDG dataset records 156 independent countries over the 139 years, 150 of which have corresponding

trade-flow data. These cases of independence were excluded from the earlier sections and we now examine them as an extension of the previous study.[22]

Territories that declared independence often lacked economic data for an extended period after their independence. Such absence of data affects the main regressor ln(TradeFlow) and control variables in the previous regression specification (1). To address this issue, we modify the specification as follows: we consider the rest of the world as the corresponding destination. That is, when a territory of an origin country becomes independent, the origin country conceptually loses that territory to the rest of the world. Thus, ln(TradeFlow) is replaced by the total export of the origin country to the rest of the world. Destination population ln $Pop_{j(f),t}$ and bilateral distance ln $Dist_{i(f),j(f)}$ are no longer applicable.[23] The national power controls are now differenced between the origin countries and their respective rest of the world, accounting for the fact that an increase in national power of a country relative to the contemporary world helps reduce the tendency of its domestic territories to seek independence.

The above modification to the previous regression specification naturally extends the reasoning discussed in earlier sections. In cases of independence, the economic interests shared by the origin and destination countries take the form of exports by the origin country. All else being equal, origin countries that are larger exporters have fewer territories seeking and allowed independence, as such a break would possibly undermine, if not severely disrupt, the economic and political connections between the territories and the origin countries.[24] In other words, the spirit of the reciprocity explanation introduced earlier applies here as well, with the key difference being that the destination was not a foreign country but a part of the origin country prior to the territorial change.

[22]The full list is provided in Appendix Table A2.

[23]The population of the rest of the world is absorbed by the period-fixed effects.

[24]Using post-WWII data, Head et al. (2010) find that trade between ex-colonies and their origin countries declined by about 65 percent in the decades following independence, with trade between ex-sister colonies having a similar decline.

Table 12: Independence

	(1)	(2)	(3)	(4)	(5)
Dependent variable: ln(area of territory that becomes independent)					
ln(trade flow)	-0.236***	-0.130*	-0.336***	-0.273**	-0.384***
	(0.0590)	(0.0758)	(0.0976)	(0.108)	(0.110)
ln(pop. of orig. country)		-0.0898	-0.505*	-0.299	-0.663**
		(0.230)	(0.278)	(0.303)	(0.295)
ln(iron & steel production difference)†			-0.372***		
			(0.0989)		
ln(military expenditure difference)†				-0.195*	
				(0.0996)	
ln(petroleum consumption difference)†					-0.589***
					(0.156)
Observations	150	150	150	150	150
R-squared	0.075	0.096	0.161	0.123	0.158

Countries whose territories became independent are considered as origin (orig.) countries. † The differences in national power measures take the form of the ROW (rest of the world) value minus origin country value. Constant terms are not reported. Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

The results are presented in Table 12. It is clear that countries that export more to the rest of the world have smaller territorial losses due to independence. The results suggest that territories in countries with higher trade volumes tend to be more interdependent, making the idea of independence less appealing. In other words, the costs of losing access to the business network and the domestic market can outweigh the perceived benefits of independence.

7 Conclusions

For most, if not all, country pairs in the world, exchanging the ownership of merchandise is easier than exchanging the sovereignty of territories. Goods are reciprocal to trade, whereas exchanging the sovereignty of territories rarely occurs in an amicable and mutually beneficial way. We find that for countries involved in territo-

rial exchanges in the last 139 years, bilateral trade flows scale down bilateral territory flows. The exchange of a territory, even if it does not cause a feud, risks ruining a relation that may bring joint gains in the future. This concern would outweigh interests in acquiring land and other territorial motives when the trade relation with a partner is sufficiently important. In this respect, international trade enhances international security.

We would like to note three limitations of our study. First, our results are based on country pairs that have territory flows. The fact that the countries in our sample have territory flows simplifies the identification by ensuring that these countries explicitly use and thus have no resistance against territorial solutions. Generalizing the study by expanding the sample to all country pairs in the world is challenging and potentially problematic. We conducted a robustness check in this direction and reached similar findings. Regardless, not all countries are interested in acquiring foreign territories, and we should not force them into that interest by assuming they simply did not put their interest into action. This is our stance on the sampling issue, which inevitably and admittedly penalizes our sample size.

Second, our findings are specific to our sample period. In our view, the relationship between territory flows and trade flows evolves over time. For instance, during the peak of the colonial era prior to 1870, trade flows and territory flows might be complements rather than substitutes. This complementarity could date back to pre-modern history, when raiding powers such as the Vikings frequently engaged in both trade and conquests. Communal storage is known to be one reason why early human societies developed into territorial states, with stored goods that could be consumed, traded, or seized. The further back we look in history, the more likely we are to find different results from those reported here. Our data cover only a very recent portion of modern history, which should be considered when attempting to generalize the findings from this study.

Third, our data sources contain no information about human activities related to the exchanged territories. Losing inhabited territories might be detrimental to both

the political foundation and economic performance of a country. Most exchanged territories in our sample are small, such that those material losses are arguably small. Nonetheless, small territories may have critical economic value (e.g., areas of mining, quarrying, and oil and gas extraction) and political value (e.g., strategic locations for military defense). This study focuses on the "exchangers" rather than the "exchangees." We hope richer information on the exchanged territories, to be made available by economic historians and political scientists, will allow us to pursue that research direction in the future.

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Appendix (for online publication only)

(Starting from the next page)

Table A1: List of Territory Flows

Origin	Destination	JSDG ID*
United States of America	Mexico	726
United States of America	Honduras	777
United States of America	Nicaragua	765
United States of America	Panama	812
United States of America	Colombia	822
United States of America	Netherlands	555
United States of America	Japan	756, 655, 780
Mexico	France	560
Nicaragua	United States of America	459
Nicaragua	Honduras	688
Panama	Costa Rica	528
Colombia	Brazil	419
Venezuela	Colombia	536
Venezuela	United Kingdom	383
Ecuador	Peru	589
Ecuador	Brazil	406
Peru	Colombia	565
Peru	Chile	262
Brazil	Bolivia	403
Bolivia	Peru	426
Bolivia	Brazil	402, 420
Bolivia	Paraguay	568
Bolivia	Chile	265
Paraguay	Brazil	200, 351
Chile	Peru	557
Chile	Argentina	255, 395
Argentina	Paraguay	232
Argentina	Chile	254, 394
United Kingdom	United States of America	212, 399
United Kingdom	Canada	628
United Kingdom	Venezuela	380
United Kingdom	Belgium and Luxembourg	418, 431
United Kingdom	France	375, 408, 410, 407
United Kingdom	Portugal	223
United Kingdom	Germany	387, 329, 330
United Kingdom	Italy	545, 337
United Kingdom	Greece	447
United Kingdom	Norway	556
United Kingdom	Ghana	679
United Kingdom	Cameroon	711
United Kingdom	Nigeria	712
United Kingdom	Somalia	707
United Kingdom	Seychelles	806
United Kingdom	Egypt	675
United Kingdom	China, Mainland	871, 559
United Kingdom	Malaysia	732, 733, 731
United Kingdom	Australia	668, 687, 623
United Kingdom	New Zealand	551
Netherlands	United Kingdom	204
Netherlands	German Federal Republic	727
Netherlands	Indonesia	734
Belgium and Luxembourg	United Kingdom	429
Belgium and Luxembourg	France	347
Belgium and Luxembourg	Portugal	284, 334, 553

Belgium and Luxembourg	German Federal Republic	669
France	Mexico	360
France	United Kingdom	372
France	Spain	461
France	Germany	206, 435, 569
France	German Federal Republic	677
France	Italy	570, 566, 488
France	Morocco	432
France	Turkey	583
France	India	648, 660
France	Thailand	411, 424
Spain	United States of America	370, 367, 368, 369
Spain	Germany	388
Spain	Mauritania	804
Spain	Morocco	760, 671, 682, 807
Portugal	Belgium and Luxembourg	333552
Portugal	Benin	709
Portugal	China, Mainland	878
Portugal	India	717
Portugal	Indonesia	809
Bavaria	Germany	209
Germany	United Kingdom	475, 474, 381, 325, 382, 501
Germany	Belgium and Luxembourg	476, 543
Germany	France	479, 480, 482, 481, 478
Germany	Portugal	483
Germany	Poland	484, 539, 592
Germany	Russia	597
Germany	Denmark	517
Germany	Japan	456, 522
Germany	Australia	524
Germany	New Zealand	526
German Democratic Republic	Germany	837
Baden	Germany	207
Wuerttemburg	Germany	208
Poland	Germany	538
Poland	Czechoslovakia	506
Poland	Russia	598, 651
Austria	Germany	573
Austria	Poland	485
Austria	Hungary	531
Austria	Italy	490, 489
Austria	Yugoslavia	492
Hungary	Czechoslovakia	594, 507, 614
Hungary	Yugoslavia	510
Hungary	Romania	512
Czechoslovakia	Germany	574, 577
Czechoslovakia	Poland	503, 575
Czechoslovakia	Hungary	579, 576
Czechoslovakia	Russia	599
Czech Republic	Slovakia	870
Slovakia	Czech Republic	869
Italy	United Kingdom	361
Italy	France	612
Italy	Albania	615
Italy	Yugoslavia	546, 616, 509
Italy	Greece	617

Albania	Italy	453, 581
Yugoslavia	Austria	505
Yugoslavia	Italy	508, 544
Greece	Albania	454
Greece	Turkey	364
Cyprus	Turkey	789
Bulgaria	Yugoslavia	442, 491
Bulgaria	Greece	445, 493
Bulgaria	Romania	450
Moldova, Rep.of	Ukraine	873
Romania	Bulgaria	584
Romania	Russia	245, 618
Russia	Poland	530, 650
Russia	Romania	511
Russia	Estonia	876
Russia	Lithuania	582
Russia	China, Mainland	413, 260, 868
Russia	Japan	414, 415, 226, 676
Estonia	Russia	585, 875
Latvia	Russia	586
Lithuania	Germany	578
Lithuania	Poland	504
Lithuania	Russia	587
Ukraine	Moldova, Rep.of	874
Finland	Russia	619
Sweden	Finland	533
Denmark	United States of America	462
Mauritania	Morocco	820
Burkina Faso	Mali	833
Cameroon	Nigeria	882
Nigeria	Cameroon	883
Chad	Libyan Arab Jamahiriya	784
Zanzibar	Tanzania, United Rep. of	736
Ethiopia	United Kingdom	396
Ethiopia	Italy	571
South Africa	Namibia	865
Comoros	France	803
Morocco	France	405, 422
Tunisia	France	257
Libyan Arab Jamahiriya	France	664
Sudan	Egypt	880
Turkey	United Kingdom	377, 233, 500, 550, 417
Turkey	France	502
Turkey	Austria-Hungary	237, 235, 236
Turkey	Italy	439, 440
Turkey	Yugoslavia	239, 443
Turkey	Greece	258, 448, 446
Turkey	Bulgaria	449
Turkey	Romania	243
Turkey	Russia	246, 532
Iraq	Saudi Arabia	800
Iraq	Kuwait	864
Egypt	United Kingdom	261
Egypt	Israel	748
Syrian Arab Republic	Egypt	683
Syrian Arab Republic	Israel	749, 785

Jordan	Israel	750
Jordan	Saudi Arabia	741
Israel	Egypt	790, 799, 817, 639, 834
Israel	Syrian Arab Republic	808
Israel	Jordan	640, 867
Saudi Arabia	Iraq	798
Saudi Arabia	Jordan	740
Saudi Arabia	Yemen	884
Saudi Arabia	Kuwait	762
Yemen Arab Republic	Saudi Arabia	567
Yemen	Oman	859
Yemen People's Republic	Yemen Arab Republic	778
Yemen People's Republic	Yemen	836
Kuwait	Saudi Arabia	761
United Arab Emirates	Iran	766, 767
Oman	Yemen	858
Kazakstan	China, Mainland	872
China, Mainland	United Kingdom	373, 371
China, Mainland	Russia	392, 210, 376
China, Mainland	Japan	562, 564, 572, 354
China, Mainland	Pakistan	730
China, Mainland	Nepal	718
Taiwan	China, Mainland	667
Korea	Japan	416
Japan	United States of America	591
Japan	Russia	224, 600
Japan	China, Mainland	541, 602, 601
India	Pakistan	685, 758, 775, 646, 782
India	Bangladesh	860
India	Sri Lanka	791
Pakistan	India	781, 643, 684, 757, 774
Myanmar	China, Mainland	716
Thailand	United Kingdom	427
Thailand	France	409, 423
Republic of Vietnam	Viet Nam	801

* The JSDG IDs can be matched to the original dataset at http://www.correlatesofwar.org/data-sets/territorial-change. Some territories were exchanged more than once. For consistency, the latest names of countries are used in the table. For example, the United Kingdom in the table also refers to the British Empire during its imperial era.

Table A2: List of Independent Territories

Canada	Sao Tome-Principe	Egypt/United Arab Republic
Newfoundland	Guinea-Bissau (Portuguese Guinea)	Syria
Bahamas	Equatorial Guinea (Spanish Guinea)	Jordan (Transjordan)
Cuba	Gambia	Israel
Jamaica	Mali (French Sudan) (Upper Senegal and Niger)	Hejaz Sultanate
Trinidad and Tobago	Senegal	Asir
Barbados	Benin (Dahomey)	Yemen People′s Republic
Dominica	Mauritania	Kuwait
Grenada	Niger	Bahrain
St. Lucia	Ivory Coast	Qatar
St. Vincent and the Grenadines	Guinea (French Guinea) (Rivieres du Sud)	Turkmenistan
Antigua & Barbuda	Burkina Faso (Upper Volta)	Tajikistan
St. Kitts-Nevis	Sierra Leone	Kyrgyzstan
Belize (British Honduras)	Ghana (Gold Coast)	Uzbekistan
Panama	Togo (French Togoland)	Kazakhstan
Guyana (Br. Guiana)	Cameroun (French Cameroons)	Mongolia
Surinam	Nigeria	Korea, Dem People′s Rep. of
Ireland	Gabon	Korea, Republic of
German Democratic Republic	Central African Republic	India
Poland	Chad	Bhutan
Malta	Congo (Brazzaville) (French Congo (Middle Congo)	Pakistan
Albania	Zaire (Kinshasa) (Belgian Congo)	Bangladesh
Macedonia, Former Yugoslav Rep.	Uganda	Burma (Myanmar)
Croatia	Kenya (British East Africa Protectorate)	Sri Lanka (Ceylon)
Yugoslavia/Serbia	Tanzania (Tanganyika) (German east Africa)	Maldive Islands
Bosnia-Herzegovina	Zanzibar	Kampuchea (Cambodia)
Montenegro	Burundi	Laos
Montenegro	Rwanda	Vietnam, Democratic Rep.
Slovenia	Somalia	Vietnam, Republic of
Cyprus	Djibouti (Afar and Issas) (French Somaliland)	Malaysia (Malaya)
Bulgaria	Eritrea	Brunei
Moldova (Bessarabia)	Angola	Indonesia (Dutch East Indies)
Rumania	Mozambique	Australia
Estonia	Zambia (Northern Rhodesia)	Papua New Guinea
Estonia	Zimbabwe (Rhodesia) (Southern Rhodesia)	New Zealand
Latvia	Malawi (Nyasaland)	Vanuatu (New Hebrides)
Latvia	South Africa	Solomon Islands
Lithuania	Transvaal	Kiribati
Lithuania	South West Africa (German West Africa) (Namibia)	Tuvalu
Ukraine	Lesotho (Basutoland)	Fiji
Ukraine	Botswana (Bechuanaland)	Tonga
Byelorussia (Belarus)	Swaziland	Nauru
Armenia	Malagasy Republic (Madagascar)	Marshall Is.
Armenia	Comoros	U. S. Pacific Trust Territories
Georgia	Mauritius	Federated States of Micronesia
Georgia	Seychelles	Western Samoa
Azerbaijan	Morocco	Iraq (Mesopotamia)
Azerbaijan	Algeria	Cambodia
Finland	Tunisia	
Norway	Sudan (Anglo-Egyptian)	
Cape Verde	Sudan (Anglo-Egyptian)	

The names of the territories in the table represent the political entities most closely associated with the territories gaining independence. These names do not necessarily correspond to the entire countries under them. When a territory name appears multiple times in the table, it refers to different parts of the territory that gained independence at different times.