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International Politics and Import Diversification

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Abstract

This paper examines how international politics affects trade in the absence of empires or wars. We first show that deterioration of relations between the United States and another country, measured by divergence in their United Nations General Assembly voting patterns, reduced U.S. imports from that country during 1962–2000. Though statistically significant, the magnitude of the effect of political distance on trade is small. Indeed, we show that except for petroleum and some chemical products, U.S. imports are not affected by international politics. American firms, however, diversify their oil imports significantly away from political opponents of the United States. Oil trade is often associated with backward vertical foreign direct investment that is subject to the expropriation risk. In contrast to the usual claim that oil is a strategic commodity, we provide suggestive evidence that trade in products when rents are appropriable is more likely to be affected by international politics.

1. Introduction

A growing consensus has emerged from the empirical trade literature that economic expansion and trade liberalization significantly promote international trade and thereby improve welfare. Recent findings suggest that economic factors

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have been the major driving force behind postwar international trade growth (for example, Baier and Bergstrand 2001, 2004). Historically, however, political influence has played an important role in shaping world trade patterns as well (see, for example, Findlay and O'Rourke 2007). If economic determinants explain most of the postwar world trade growth, is the recent Iranian oil embargo a rather isolated political event? More generally, with efficiency-driven trade liberalization and technology-led declines in communication and transportation costs, is the process of globalization inherently irreversible?

This paper examines whether international politics affects trade in the contemporary world and, if so, what kinds of products are affected. In particular, we ask the following questions: (1) Do interstate political tensions reduce trade in the current postwar period? If so, how does the trade cost created by such a political distance compare with the cost of the frictions imposed by other trade barriers? (2) Does political distance hinder imports of some goods more than others? For example, does political distance have a larger impact on import of crude oil, which is widely thought to be a strategic commodity over this period? (3) Does the magnitude of the political effect on bilateral trade vary across trading partners? In particular, is trade more sensitive to political distance when one of the trading partners is a dictatorial government? What is the mechanism by which international politics affects trade in the absence of empires or wars?

Our simple answer is that in the contemporary world international politics still affects trade, but only for products when rents are appropriable. It is our contention that in the contemporary world the presence of heterogeneity in the response of trade to international politics is pervasive, and such heterogeneity takes many forms (for example, across countries, goods, and time), so extrapolating estimates from one population to another can be misleading.

Using voting records for the United Nations (UN) General Assembly to measure the degree of misalignment in political interests between country pairs, we first examine if the United States, the world's largest importer, diversifies its imports away from its political opponents over almost 4 decades (1962–2000). Our data confirm the famous maxim “a week is a long time in politics.” The substantial time variation in political distance within each country pair allows us to exploit the panel structure of our data to control for persistent historical factors that affect both political distance and bilateral trade. Controlling for exporting country fixed effects and other trade determinants in a standard gravity model, we find that the United States imports less from its political opponents, although the estimated impact is only modest in economic terms. According to our preferred Poisson pseudo-maximum-likelihood (PPML) estimation (Santos Silva and Tenreyro 2006), for instance, we find that a 1-standard-deviation decrease in political distance is associated with an increase in U.S. imports of less than 13 percent, whereas a regional trade agreement increases trade by almost 50 percent.¹ This finding supports the notion that, unlike the first wave of

¹ As a reference, the political distance between the United States and Venezuela increased by

globalization in the 19th century, political factors are less important determinants of international trade than economic factors are in the current wave of globalization.

The result for aggregate trade, however, masks the significant heterogeneity of the political effects on trade in the contemporary world. Using disaggregated trade data by sector, we show that for most traded goods, there is little statistically and economically significant correlation between international politics and U.S. imports. However, political distance has a distinct effect on import of petroleum. In particular, the estimated political effect on U.S. petroleum imports is almost four times larger than the effect on total imports.

The case of petroleum trade deserves special attention. There is more trade internationally in crude oil than in any other commodity (Ruta and Venables 2012). Concerns about energy security have motivated policy researchers to quantify the externalities as an oil-security premium (Leiby 2007).² Because petroleum includes crude oil and other refinery products, and oil reserves change over time because of new discoveries and depletion, a more careful empirical analysis requires better measurements in trade flows and endowments. Focusing on import of crude oil and controlling for oil reserves, we find that a 1-standard-deviation reduction in political distance increases U.S. oil imports by more than 100 percent, an effect similar to two countries belonging to the same empire during the 19th century. Interestingly, U.S. oil imports respond to international politics even after we account for government policies, including sanctions and tariffs. Our results are also robust to controlling for militarized interstate disputes, which suggests that the political impact on oil import diversification exists even during times of peace.

Why should international politics affect import decisions of U.S. private oil companies but not those of other importing firms? To better understand this sector-specific trade pattern, we examine two possible explanations. First, under the strategic-commodity hypothesis, import decisions of strategic commodities, such as oil, are not driven solely by profit-maximizing motives because of strategic and security considerations imposed by governments. Alternatively, under the holdup risk hypothesis, oil imports are affected by political risk because oil trade is often associated with backward vertical foreign direct investment (FDI), which

approximately 1 standard deviation (.18) after Hugo Chávez became the president. The distance between the United States and the Soviet Union on average was .64, or more than three times the standard deviation, for the period 1962–90. It was reduced by approximately 1 standard deviation (to .47) between the United States and Russia in 1990–2000.

² These externalities include economic losses due to disruptions in the oil supply and military spending in vulnerable supply areas. The idea of energy security can be traced back to the time when Winston Churchill changed coal to oil as a power source for the Royal Navy prior to the First World War. According to Churchill, “Safety and certainty in oil lie in variety and variety alone” (55 Parl. Deb., H.C. [5th ser.] [1913] 1465 [U.K.]). However, unlike some policy makers, many economists maintain that the world oil market is one great pool, because crude oil is fungible in an integrated oil exchange market (Nordhaus 2009). If oil is completely fungible, it moves to the nearest market to minimize transportation costs, and cost minimization prevents the market from distinguishing sources between friendly and hostile regimes.

is subject to the risk of selective discrimination, including indirect expropriation (for example, royalty renegotiation) and forced divestment.

Under the strategic-commodity hypothesis, political factors such as regime type of a trading partner and the strategic value of a good are key determinants of the political effects on trade, whereas the holdup risk hypothesis implies that the relationship between international politics and trade is a function of economic factors, such as relationship-specific investment and expropriation risk. To test these two hypotheses, we examine the heterogeneity in political impact on U.S. oil imports with respect to two institutional characteristics of the exporting countries, namely, the degree of democracy and the risk of expropriation. We also consider other oil-importing countries to see whether similar effects are observed for countries with large oil investments overseas. Our findings suggest that both political and economic forces are at work, although in the case of oil the economic force of holdup risk seems to be more important.

Mitchener and Weidenmier (2008) show that political ties, measured by membership in an empire, more than doubled bilateral trade during 1870–1913 (also known as the first wave of globalization), although Alesina, Spolaore, and Wacziarg (2000, p. 1294) argue that “the ‘globalization’ of markets goes hand in hand with political separatism.” Comparing the two waves of globalization, Jacks, Meissner, and Novy (2011) conclude that the dominant force of world trade growth has switched from political ties and other trade cost declines in the first wave to the postwar global output growth during 1950–2000 (also known as the second wave of globalization).³ A few empirical studies have examined the impact of interstate war on bilateral trade (for example, Blomberg and Hess 2006; Glick and Taylor 2010). Although international violence does restrict economic integration, interstate war is rare, especially after the Second World War. There are also important case studies in the postwar period. Berger et al. (2013) show that, during the Cold War, a foreign government imported more American products following a Central Intelligence Agency (CIA) intervention. Using more recent data, Michaels and Zhi (2010) find that the deterioration of relations between the United States and France from 2002 to 2003 reduced trade.⁴ In this paper, we provide the first systematic empirical analysis of the effect of international politics on imports of goods during the recent wave of globalization, which is also a period of decolonization with little international violence.

The paper proceeds as follows. Section 2 describes the data and illustrates several stylized examples in the case of oil trade. Section 3 presents our initial evidence on the effects of international politics on U.S. total imports and imports

³ In particular, Jacks, Meissner, and Novy (2011) show that the pro-trade effect of political ties (measured by imperial membership) has been diminishing over time. Similarly, Head, Mayer, and Ries (2010) document the erosion of colonial trade linkages after independence.

⁴ In addition, Summary (1989), an early contribution, identifies several political factors, such as arms transfers and the number of foreign agents registered in the United States, that affect bilateral trade flows between the United States and other countries. More recently, Acemoglu and Yared (2010) find that two countries jointly experiencing greater increases in militarism have lower rates of growth in bilateral trade. See also Bove, Elia, and Sekeris (2013).

by sector. Our main results using U.S. oil import data are presented in Section 4. Section 5 evaluates the strategic-commodity hypothesis and the holdup risk hypothesis by extending the analysis to different subsamples of exporting countries, other oil-importing countries, and various trade aggregates. Section 6 concludes.

2. The Data and Some Stylized Examples

We combine data from the following sources for our analysis. First, our disaggregated bilateral trade data are taken from the National Bureau of Economic Research–United Nations (NBER-UN) world trade data compiled by Feenstra et al. (2005). The NBER-UN data set provides bilateral trade data by commodity over the 1962–2000 period. We use this data set to construct total imports and other trade aggregates, according to Leamer (1984), Nunn (2007), and Fernandes and Tang (2012). Our main dependent variable is the value of crude oil imports, which is classified as “petroleum oils and oils obtained from bituminous minerals, crude” (Standard International Trade Classification [SITC] code 3330).

Data on political distance between country pairs are obtained from the Affinity of Nations index (Gartzke 2010), which provides a metric that reflects the similarity of state preferences based on voting positions of country pairs in the UN General Assembly since 1946. In particular, our measure of political distance, which lies between 0 and 1, is calculated as d/d_{\max} , where d is the sum of metric distances between votes by a country pair in a given year and d_{\max} is the largest possible metric distance for those votes.⁵ For instance, when two countries always cast the same vote for any proposal, their political distance is 0. Alesina and Dollar (2000) argue that UN votes are a reliable indication of the political alliances between countries, because the pattern of those votes is strongly correlated with alliances and similarity of economic and geopolitical interests.⁶ Unlike other indexes based on alliance portfolios, indexes based on UN voting provide significant time-series variation in political distance. Following Dreher and Sturm (2012) and the majority of the literature, we focus on all votes (that is, both key and nonkey votes), although we also report results using only key votes in the sensitivity analysis.

Data on standard gravity controls are taken from various sources. The Centre d'Etudes Prospectives et d'Informations Internationales provides data on bilateral distance, colonial historical links, General Agreement on Tariffs and Trade/World Trade Organization (GATT/WTO) membership, and regional trade agreements. Linguistic dissimilarity and religious distance data are provided by Hanson and Xiang (2011), whereas genetic distance data are taken from Spolaore and Wacziarg (2009). Gross domestic product (GDP) and population data are taken from

⁵ Votes are coded as either 1 (“yes” or approval of an issue), 2 (abstain), or 3 (“no” or disapproval of an issue).

⁶ Dreher and Jensen (2007) show that the number of conditions on an International Monetary Fund loan depends on a borrowing country’s voting pattern in the United Nations (UN) General Assembly.

the Penn World Table Version 6.3 (Heston, Summers, and Aten 2009).⁷ Political scientists believe that joint democracy increases bilateral trade (see, for example, Morro, Siverson, and Tabares 1998) and encourages peace (see, for example, Oneal and Russett 2001). Democracy data are taken from the Polity IV Project data set (Marshall and Jaggers 2007), which provides a composite index that combines measures of restraints on executive authority, political competition, executive recruitment, and so forth. Civil conflict, interstate violence, and warfare may disrupt trade. The Correlates of War Project provides data on civil war and militarized interstate disputes.⁸ Our oil reserves data are obtained from Colin Campbell at the Association for the Study of Peak Oil (ASPO). The ASPO data set covers most oil-producing countries. We obtained additional information on oil reserves for other countries from three sources: the *BP Statistical Review of World Energy*, the *Oil and Gas Journal*, and the CIA's *World Factbook* (see Cotet and Tsui 2013). In some specifications, we also control for tariff duties on U.S. oil imports and trade sanctions. These data are obtained from various issues of the Harmonized Tariff Schedule of the United States and the Tariff Schedule of the United States Annotated and from Hufbauer et al. (2007), respectively. Finally, data on expropriation risk in the oil industry are taken from Guriev, Kolotilin, and Sonin (2011), which provides a list of oil nationalizations, including formal nationalization, intervention, forced sale, and contract renegotiation, during 1960–2006.

In the full sample of total U.S. imports and imports of various trade aggregates, we have 4,977 observations from 158 exporting countries. We present in Table 1 the summary statistics for the variables that we use in our U.S. total imports and sectoral imports regressions. The variation in the size of imports for the United States is enormous. There is also significant variation in Political Distance, our variable of interest. Trade sanctions are rare, especially export sanctions imposed by other countries on the United States.⁹ Finally, civil war in exporting

⁷ Data for the Soviet Union and other former communist countries are obtained from version 5.6.

⁸ The raw data of the Militarized Interstate Disputes variable can take five values, depending on the hostility level of dispute: 1 is no militarized action, 2 is threat to use force, 3 is display of force, 4 is use of force, and 5 is war. Since the potential impact of hostility level on oil imports is not necessarily linear, in our regressions we generate dummy variables based on these different levels of hostility. There are also four types of civil war: 1 is civil war for central control, 2 is civil war over local issues, 3 is regional internal, and 4 is intercommunal. We create a dummy for each type of war in our regressions.

⁹ See Hufbauer et al. (2007) for an overview of the literature on economic sanctions. In terms of the economic determinants of sanctions, Hafner-Burton and Montgomery (2008) show that although more bilateral trade reduces sanctioning behavior, a higher gross domestic product for a potential sanctioner in the network of all preferential trade agreements increases the likelihood of initiating sanctions. Political factors also play a role. For example, Whang (2010) documents that countries that impose economic sanctions are predominantly democratic, whereas targets are much more diverse in terms of their regime type. In the case of the United States, the U.S. government often imposes economic sanctions when a target country's leader abolishes a democratic constitution or disregards civil or human rights, although during the Cold War the U.S. government was more reluctant to impose comprehensive embargoes if the target was a close ally.

Table 1
Summary Statistics for U.S. Imports, Distances, and Other Exporters' Characteristics

Variable	Mean	SD	Min	Max	N
Import Value	2,535,256	11,600,000	0	233,000,000	4,977
Political Distance	.534	.181	0	1	4,977
Import Sanctions	.030	.172	0	1	4,977
Export Sanctions	.007	.084	0	1	4,977
GATT/WTO Membership	.631	.483	0	1	4,977
Regional Trade Agreement	.007	.082	0	1	4,977
Log Geographical Distance	8.977	.503	6.307	9.692	4,807
Colonial Tie	.032	.177	0	1	4,807
Linguistic Distance	.867	.147	.504	1.000	4,807
Religious Distance	.712	.249	.324	1.000	4,807
Genetic Distance	.090	.079	.000	.229	4,807
Log Exporter's GDP	8.346	1.121	5.033	11.489	4,977
Log Exporter's Population	8.996	1.536	4.901	14.054	4,977
Exporter's Democracy	-.258	7.526	-10	10	4,977
Civil War	1.500	.717	1	4	576
Militarized Interstate Disputes	3.739	.481	2	4	111

countries is not common, and militarized disputes between the United States and potential exporting countries are even rarer. For instance, militarized disputes between the United States and potential exporting countries occur at a rate of only 2 percent (111 of 4,977) in our sample.¹⁰ We report in an online appendix similar summary statistics when we restrict our sample to country-years with positive oil reserves for our oil import regressions.

Before presenting our regression results, we first consider the following illustrative case studies. Figure 1 depicts the time series of the political distance between the United States and Libya and the fraction of U.S. oil imports from Libya. Although there has never been a formal alliance between the United States and Libya according to the Correlates of War Formal Alliance data set (Gibler and Sarkees 2004), a sharp increase in political distance is observed in the late 1970s, when the U.S. government designated Libya a state sponsor of terrorism. The U.S. dependence on Libyan oil comoves negatively with political distance, as the U.S. government imposed trade sanctions against Libya over the 1979–2004 period. Figure 2 shows a similar pattern in the case of U.S.–Iran relations: U.S. dependence on Iranian oil has declined dramatically since the late 1970s, when Ruhollah Khomeini led the Iranian Revolution. Unlike Libya, however, Iran had been in a formal alliance with the United States before 1979.

The examples of Libya and Iran illustrate that sharp deterioration in inter-

¹⁰ In the online appendix, we also report the pairwise correlations between different measures of distances. Consistent with intuition, Political Distance is positively correlated with Import Sanctions, Geographical Distance, Linguistic Distance, Religious Distance, Genetic Distance, and Militarized Disputes and negatively correlated with International Trade Agreement and Regional Trade Agreement as well as Colonial Ties, although none of the correlations are particularly strong (the magnitude never exceeds .4). The GATT/WTO Membership term is negatively correlated with Militarized Disputes, whereas Import Sanctions and Militarized Disputes are positively correlated.

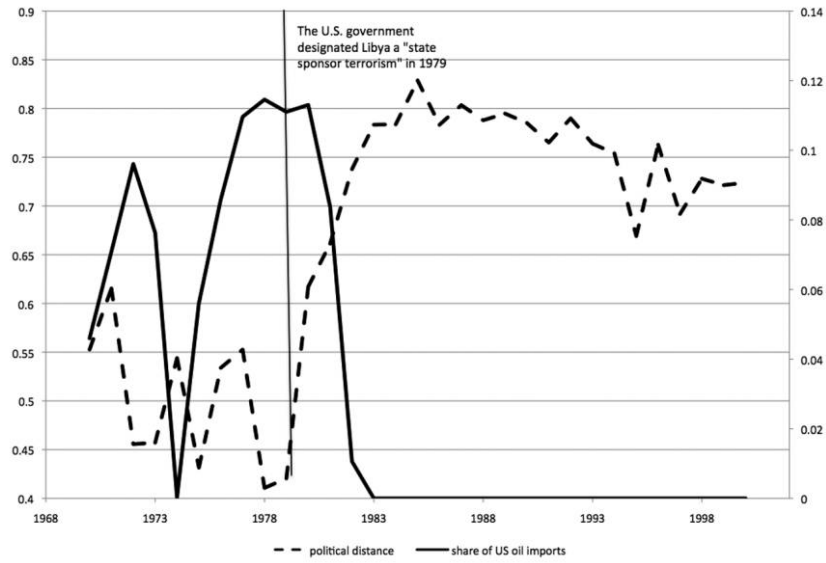


Figure 1. Political distance and U.S. oil imports from Libya

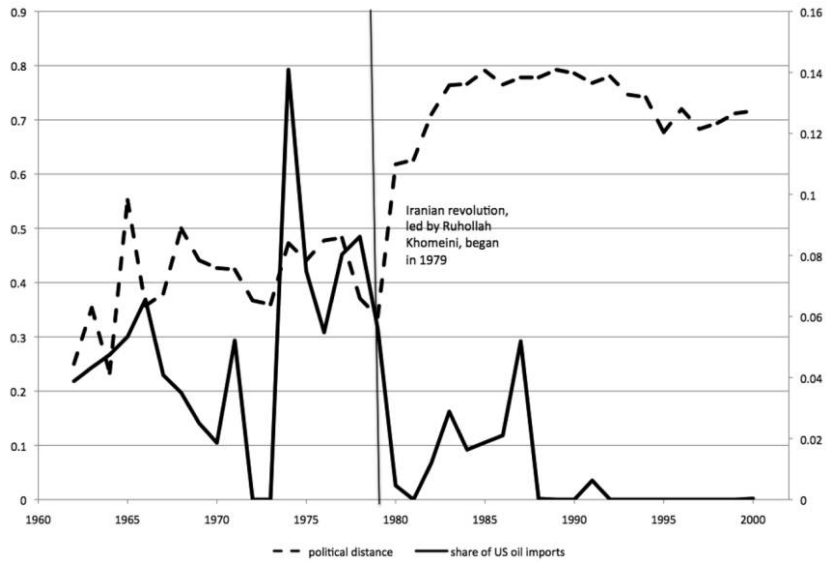


Figure 2. Political distance and U.S. oil imports from Iran



Figure 3. Political distance and U.S. oil imports from Venezuela

national relations leads to trade sanctions and a subsequent decline in trade on the extensive margin. Figure 3 shows that, even in the absence of sanctions against Venezuela, misalignment in political interests appears to influence the intensive margin of U.S. oil imports. Indeed, more recent data indicate that U.S. dependence on Venezuelan oil was declining as the political distance was increasing during the past decade under the presidency of Hugo Chávez (Mityakov, Tang, and Tsui 2011).

3. Political Limits on U.S. Imports

3.1. Distances and U.S. Total Imports

In our analysis we employ the standard workhorse model in international trade: the gravity equation, which links trade flows between countries to distance between them and their (economic and/or demographic) sizes. Distance in this model is understood quite generally. It not only includes geographical distance but also could account for other factors that reduce trade: language barriers, cultural differences, bilateral animosity, and so forth. In our paper we focus on political relations as impediments to trade.

In its multiplicative constant-elasticity form, the gravity equation for trade states that the value of imports from country i to the United States in year t , denoted $M_{i,t}^{US}$, is inversely proportional to their distance $D_{i,t}^{US}$ and proportional

to the product of the two countries' GDPs, denoted $Y_{i,t}$ and Y_t^{US} :

$$M_{i,t}^{\text{US}} = e^{\alpha(D_{i,t})^\beta(Y_{i,t})^\gamma(Y_t^{\text{US}})^\delta} e^{\eta_{i,t}^{\text{US}}}, \quad (1)$$

where α , β , γ , and δ are unknown parameters and $\eta_{i,t}^{\text{US}}$ is an error term.

Since bilateral trade flows $M_{i,t}^{\text{US}}$ in many cases have the value of 0, we show the results from several estimation techniques used in the trade literature. Ignoring trade observations with values of 0, one can take logs of equation (1) to obtain the following log-linear relation:

$$\ln M_{i,t}^{\text{US}} = \alpha + \beta \ln D_{i,t} + \gamma \ln Y_{i,t} + \delta \ln Y_t^{\text{US}} + \eta_{i,t}^{\text{US}}. \quad (2)$$

Coefficient β in this specification measures the impact of bilateral distance on the so-called intensive margin; that is, it shows by what percentage trade would increase when distance changes, conditional on positive trade between the two countries.

To assess the impact of international trade on the likelihood of any trade at all between countries (or the so-called extensive margin), we consider the following probit regression:

$$1(M_{i,t}^{\text{US}} > 0) = \alpha + \beta \ln D_{i,t} + \gamma \ln Y_{i,t} + \delta \ln Y_t^{\text{US}} + \eta_{i,t}^{\text{US}}, \quad (3)$$

where $1(M_{i,t}^{\text{US}} > 0)$ is a dummy variable equal to unity if trade $M_{i,t}^{\text{US}}$ between the United States and country i is positive in year t . So in this specification β shows the probability of an increase in trade if the distance is 1 percent less.

Finally, one can directly estimate the multiplicative form of equation (1) using the PPML estimator suggested by Santos Silva and Tenreyro (2006), which provides a natural way to deal with zeros in the dependent variable, essentially combining intensive and extensive margins in one specification.¹¹

Our point of departure from the traditional gravity model is the focus on international politics, and hence $D_{i,t}^{\text{US}}$ also measures political distance.¹² To take into account that contract arrangements cover many international transactions and also to alleviate concerns about reverse causality, $D_{i,t}^{\text{US}}$ measures the 1-year lag of political distance between the United States and country i . The coefficient of interest is β , the estimated impact of U.S. foreign relations on the log of the value of imports to the United States.

To follow the trade literature, other control variables are measured in year t . In our first specification, we control for country i 's GDP and population, as well as other standard trade resistance measures, including international and regional trade agreements, geographical distance, and various measures of cultural distance. We also control for civil war and year fixed effects, to capture potential

¹¹ Another advantage of Poisson pseudo-maximum likelihood (PPML) estimation is that the estimates will be consistent even in the presence of heteroskedasticity. One caveat of any estimation technique that incorporates zeros, however, is that it may generate biased estimates if some trade flows are incorrectly reported as zeros. As such, we report both ordinary least squares (OLS) and PPML estimates.

¹² Unlike geographical distance, our measure of political distance lies between 0 and 1, and hence in the regressions we use the level of political distance instead of the log of it.

supply interruption and other time-specific characteristics (for example, global oil price, as well as U.S. GDP and political distance to the rest of the world). The year fixed effects also capture the possible dramatic differences in the types of votes cast each year, because the years with the greatest political distance are years when there are many votes about Israel and Palestine. To examine the incentives to diversify at the intensive margin in the absence of government intervention, we also control for trade sanctions.

Columns 1 and 2 of Table 2 compare the effects of various measures of resistance to trade on U.S. total imports, at both the extensive and intensive margins. Political Distance is our variable of interest. First, using probit estimation to highlight the extensive margin, column 1 shows that Political Distance is negatively associated with U.S. imports.¹³ When we restrict to the subsample of positive imports, our simple ordinary least squares (OLS) estimates show that Political Distance is also negatively associated with U.S. imports on the intensive margin. A point estimate of $-.994$ implies that a 1-standard-deviation reduction in Political Distance (approximately $.18$)¹⁴ is associated with an increase in U.S. imports of less than 20 percent.¹⁵ According to this traditional gravity model, an estimated Log Geographical Distance coefficient of $-.414$ implies that a 1-standard-deviation decrease in this distance (approximately $.50$) increases trade by about 23 percent, which is slightly larger than the impact of Political Distance.

The negative cross-country correlation between colonial ties and U.S. imports raises the concern of omitted-variable bias, perhaps due to omitted variables such as factor endowment. We have seen from the examples of Libya and Iran that, unlike geographical distance, political distance can fluctuate significantly over time. Substantial within-country variation in political distance over time allows us to include exporter fixed effects to control for omitted factors that simultaneously affect both political distance and trade.¹⁶ The log-linear form of our baseline specification, therefore, can be written as

$$\ln M_{i,t}^{\text{US}} = \alpha_t + \alpha_i + \beta \ln D_{i,t} + \gamma \ln Y_{i,t} + \Gamma \mathbf{X}_{i,t} + \eta_{i,t}^{\text{US}}, \quad (4)$$

where the vector $\mathbf{X}_{i,t}$ includes controls that vary across countries and years. In our fixed-effects specification, $\mathbf{X}_{i,t}$ also includes country i 's democracy score and

¹³ We always report marginal effects in probit estimation, so the implied effects on the probability of importing can be computed as $\beta \times \Delta x$, where β is the reported marginal effect and Δx is the change in political distance. In particular, this suggests an increase in the probability of importing of $.02$ for a 1-standard-deviation decrease in transparency ($.18$).

¹⁴ To put this number in perspective, Political Distance between the United States and Russia changed by approximately 1 standard deviation as a result of the collapse of communism. Distances from the United States to its closest ally the United Kingdom and to Sweden also differ by approximately $.18$. At the same time the distance between the United States and current Iran is around four times larger.

¹⁵ Implied responses to changes in Political Distance are computed as $\exp(\Delta x \times \beta - 1)$, where Δx is the change in the distance measure in question and β is the estimated coefficient.

¹⁶ Including country fixed effects in our specification is also equivalent to including country-pair fixed effects, which capture many of the standard country-pair-specific measures that are standard in gravity regressions.

Table 2
Political Distance and U.S. Imports

	Probit (1)	OLS (2)	Probit (3)	OLS (4)	PPML (5)	PPML (6)
Political Distance	-.110** (.032)	-.994** (.253)	-.135** (.051)	-1.621** (.531)	-.672** (.255)	-.712** (.258)
GATT/WTO Membership	.032** (.007)	-.055 (.063)	.006 (.024)	.223 (.153)	.460** (.141)	.485** (.140)
Regional Trade Agreement		1.460** (.122)		.481* (.217)	.396** (.147)	.398** (.144)
Log Exporter's GDP	.012** (.003)	1.792** (.034)	.111** (.026)	1.723** (.232)	1.523** (.239)	1.530** (.237)
Log Exporter's Population	.043** (.003)	1.068** (.022)	.116** (.042)	.657 (.426)	.807** (.141)	.786** (.132)
Log Geographical Distance	-.025** (.008)	-.414** (.054)				
Colonial Tie		-.364** (.102)				
Import Sanctions						-.556 ⁺ (.304)
Export Sanctions						-1.056** (.308)
Additional controls:						
Exporter's Democracy	No	No	Yes	Yes	Yes	Yes
Militarized Interstate Disputes	No	No	Yes	Yes	Yes	Yes
Country fixed effects	No	No	Yes	Yes	Yes	Yes
Observations	4,616	4,384	1,848	4,552	4,977	4,977
Countries			55	149	158	158
R ²	.240	.716	.512	.895		

Note. Columns 1 and 2 also control for cultural distances, measured by linguistic, religious, and genetic distances. Civil War dummies and year fixed effects are included for all regressions. In columns 3–6, standard errors are also clustered at the country level. Robust standard errors are reported in parentheses. OLS = ordinary least squares; PPML = Poisson pseudo-maximum likelihood.

⁺ Significant at the 10% level.
^{**} Significant at the 5% level.
^{***} Significant at the 1% level.

militarized disputes between country i and the United States. We note that some of these low-frequency political events, such as regime transitions and militarized disputes, are potentially endogenous to international relations. The purpose of this more stringent and demanding specification is to test whether international politics still matters for trade even after controlling for these violent political events.

The rest of Table 2 reports our fixed-effect estimates. The negative partial correlation between Political Distance and U.S. imports is robust to controlling for exporter fixed effects. Indeed, the magnitude of the effect is increased by 60 percent in the OLS specification, once fixed effects are included in the regression.

The PPML regressions combine extensive and intensive margins in one specification. A point estimate of $-.672$ (SE of $.255$) implies that a 1-standard-deviation decrease in Political Distance ($.18$) is associated with an increase in U.S. imports of less than 12 percent. In contrast, a point estimate of $.396$ implies that Regional Trade Agreement increases trade by almost 50 percent, which is economically more significant than the impact of international politics. These findings support the new consensus that economic factors, including efficiency-driven trade liberalization, are major determinants of trade growth in the second wave of globalization. Finally, this conclusion is also robust to controlling for sanctions.

3.2. *Political Distance and U.S. Imports by Sector*

To our knowledge, little is known about the heterogeneity of the effects of international politics on trade in the contemporary world. Given that the number of commodities that are internationally traded is enormous, to avoid being arbitrary, we consider the 10 trade aggregates that are employed by Leamer (1984). These 10 aggregates (namely, petroleum; raw materials; forest products; tropical agriculture; animal products; cereals, etc.; labor intensive; capital intensive; machinery; and chemicals) are formed from the 61 two-digit SITC commodity classes on the basis of the idea that commodities within a class behave similarly in international trade. To show the most conservative estimates, we include exporter fixed effects and the full set of controls in our estimations.

We summarize our results for probit, OLS, and PPML estimations in Table 3. For convenience we report estimates for total imports as well. Probit regressions suggest that political distance seems to negatively affect the decision to import or not (that is, extensive margin) for some commodities. Once we take the intensive margin into consideration for most traded goods, in particular, Leamer's aggregates excluding petroleum, Table 3 shows that there is no systematic statistical association between trade costs created by political distance and U.S. imports.¹⁷

¹⁷ Raw materials have somewhat larger (though not statistically significant) point estimates in the OLS specification, but the implied effect is half of that for petroleum and chemicals, and the effect becomes much smaller than the effect for petroleum in the PPML specification when both margins are combined.

Table 3
Political Distance and U.S. Imports of Leamer's 10 Commodity Aggregates

	Probit	OLS	PPML
Total imports	-.135** (.051)	-1.621** (.531)	-.672** (.255)
Observations	1,848	4,552	4,977
Countries	55	149	158
Petroleum	-.390 (.248)	-1.344 (1.279)	-3.030* (1.477)
Observations	3,485	2,214	4,977
Countries	104	149	158
Raw materials	-.149 (.334)	-.741 (.659)	-.229 (.425)
Observations	2,988	3,208	4,977
Countries	93	143	158
Forest products	-.643* (.327)	.822 (.691)	.323 (.477)
Observations	2,654	2,874	4,977
Countries	82	128	158
Tropical agriculture	-.635 (.400)	-.281 (.537)	.214 (.271)
Observations	2,337	3,626	4,977
Countries	76	143	158
Animal products	-.275 (.280)	.267 (.570)	.467 (.409)
Observations	2,575	3,718	4,977
Countries	79	145	158
Cereals, etc.	-.768* (.371)	.968 (.676)	-.092 (.518)
Observations	2,861	3,176	4,977
Countries	89	137	158
Labor intensive	-.468** (.135)	.062 (.509)	.196 (.608)
Observations	2,338	4,232	4,977
Countries	72	149	158
Capital intensive	-.505 ⁺ (.262)	.015 (.784)	-.530 (.380)
Observations	2,967	3,175	4,977
Countries	91	146	158
Machinery	-.086 (.249)	.491 (.801)	-.636 (.427)
Observations	3,479	2,903	4,977
Countries	106	146	158
Chemicals	-.193 (.268)	-1.626** (.606)	-.739* (.374)
Observations	2,961	3,128	4,977
Countries	90	143	158

Note. Robust standard errors clustered at the country level are reported in parentheses. All fixed-effects regressions control for Political Distance, GATT/WTO Membership, Regional Trade Agreement, Log Exporter's GDP, Log Exporter's Population, Civil War, Exporter's Democracy, Militarized Interstate Disputes, and year and country fixed effects. OLS = ordinary least squares; PPML = Poisson pseudo-maximum likelihood.

⁺ Significant at the 10% level.

* Significant at the 5% level.

** Significant at the 1% level.

However, political distance has a distinct effect on import of petroleum. Interestingly, our preferred PPML estimate of -3.030 (SE of 1.477) from the petroleum imports regression implies an increase in oil imports of around 70 percent for a 1-standard-deviation decrease in Political Distance (.18), which is more than five times larger than the percentage increase in total imports (12 percent) for the same decrease in Political Distance. The OLS point estimate for petroleum is less precisely estimated but implies sizeable economic effects as

well. Effects for imports of chemical products are statistically significant in both OLS and PPML regressions, but the implied effects are five times smaller (an increase of 14 percent for the same 1-standard-deviation decrease in Political Distance) than for petroleum when both margins are combined (in the PPML specification).¹⁸

4. Political Limits on U.S. Oil Imports

We have seen that, unlike imports of most other traded goods, there is a strong negative relationship between political distance and petroleum imports to the United States. The objectives of this section are to establish the causation and to carefully quantify the impact of international politics on oil trade.

4.1. Estimation with Improved Measures of Oil Trade, Endowments, and Import Tariffs

We first extend our previous analysis by focusing on trade in crude oil (SITC code 3330) and controlling for oil reserves. Our baseline sample consists of all potential crude-oil exporters (that is, country-years in which oil reserves are strictly positive).

Table 4 presents the results from the pooled regressions. The United States is less likely to import oil from oil-producing countries at a larger political distance. When we restrict to the subsample of positive oil imports, the simple OLS estimate shows that American firms also diversify their oil imports away from the political opponents of the United States.

Our fixed-effects estimates, with the full set of controls, are reported in columns 3–6. Our probit and OLS results are robust to controlling for country fixed effects. Our fixed-effects OLS specification also indicates that over the sample period American firms diversified their countries' sources of imported oil, which is regarded as a highly homogenous commodity, over 65 (of 82) oil-producing countries. Figure 4 displays a negative relationship between political distance and U.S. oil imports implied by our linear model.¹⁹

In our preferred PPML estimation, a coefficient of -4.301 (SE of 1.614, and hence significant at the 1 percent level) implies that a 1-standard-deviation

¹⁸ When we disaggregate chemicals into nine subcategories, namely, (a) chemical elements, compounds; (b) mineral tar and crude chemicals from coal, petroleum, natural gas; (c) dyeing, tanning, coloring materials; (d) medicinal, pharmaceutical products; (e) essential oils, perfume materials; (f) fertilizers, manufactured; (g) explosives, pyrotechnic products; (h) plastic materials, cellulose, etc.; and (i) chemical materials n.e.s. (not elsewhere specified), we find that political distance has economically significant effects for the first three categories.

¹⁹ Figure 4 shows a partial residual plot of the specification data reported in Table 4, column 6.

Table 4
Political Distance and U.S. Oil Imports

	Probit (1)	OLS (2)	Probit (3)	OLS (4)	PPML (5)	PPML (6)
Political Distance	-.238 ⁺ (.130)	-2.267** (.741)	-.443 (.294)	-3.209* (1.403)	-4.301** (1.614)	-4.704** (1.365)
GATT/WTO Membership	.152** (.031)	.073 (.134)	.053 (.131)	-.267 (.375)	.266 (.291)	.343 (.292)
Regional Trade Agreement	-.120* (.053)	.492** (.188)	-.241 (.164)	.362 (.550)	.175 (.202)	.154 (.175)
Log Exporter's GDP	.079** (.021)	-.092 (.087)	.370* (.174)	.061 (.351)	.528 (.584)	.479 (.647)
Log Exporter's Population	.014 (.011)	-.057 (.041)	.143 (.288)	-.989 (.955)	.073 (1.025)	-.221 (1.135)
Log Exporter's Oil Reserves	.148** (.007)	.853** (.031)	.166** (.032)	.848** (.172)	1.135** (.268)	1.335** (.271)
Import Sanctions						-1.180** (.387)
Oil Import Tariffs						.001 (.056)
Additional controls:						
Exporter's Democracy	No	No	Yes	Yes	Yes	Yes
Military Interstate Disputes	No	No	Yes	Yes	Yes	Yes
Country fixed effects	No	No	Yes	Yes	Yes	Yes
Observations	2,307	1,116	1,875	1,151	2,421	1,725
Countries			57	65	82	81
R ²	.356	.673	.410	.768		

Note. Columns 1–5 also control for geographical distance and cultural distance, measured by linguistic, religious, and genetic distances. Civil War dummies and year fixed effects are included for all regressions. In columns 3–6, standard errors are also clustered at the country level. Robust standard errors are reported in parentheses. OLS = ordinary least squares; PPML = Poisson pseudo-maximum likelihood.

⁺ Significant at the 10% level.

* Significant at the 5% level.

** Significant at the 1% level.

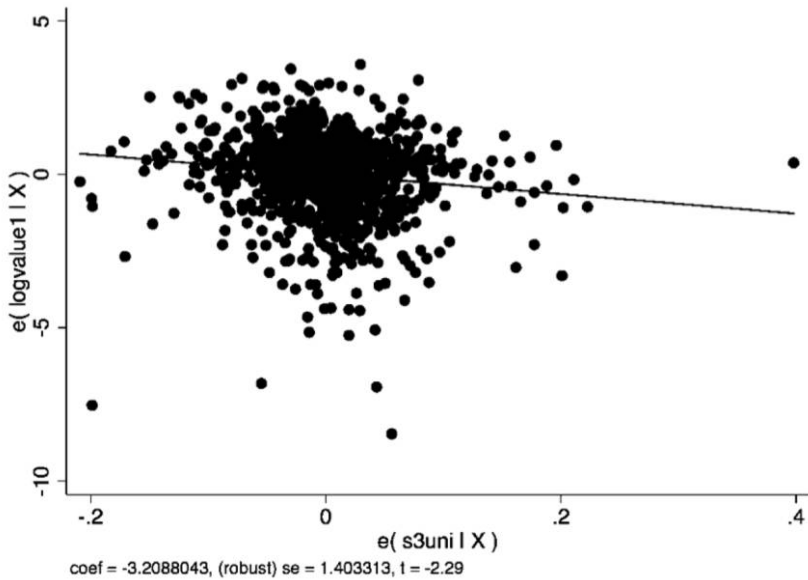


Figure 4. Political distance and U.S. oil imports: fixed-effects ordinary least squares estimate

decrease in Political Distance (.18) increases U.S. oil imports by more than 100 percent.²⁰

Our main result is also robust to controlling for sanctions and oil import tariffs. In addition, the online appendix contains a range of sensitivity checks. We briefly summarize our findings here. Similar political impacts on U.S. oil imports are observed in both the Cold War (1962–89) and the post–Cold War (1990–2000) periods, although the political effect becomes significant at the extensive and intensive margins in the post–Cold War period. We obtain slightly stronger results when we exclude the years when the U.S. government implemented the Mandatory Oil Import Quota Program (1959–73).²¹ The estimated effects remain highly significant and large in magnitude when we restrict the sample period to 1984–2000 and use UN Comtrade data. Similar results are also

²⁰ To see whether this result is robust to exclusion of outliers we considered two approaches. First, we dropped Libya, Iran, Saudi Arabia, Canada, and Mexico, which are likely to have extremely high or low political distances to the United States. Second, we dropped observations with residuals that are very high in absolute value (below the 5th and above the 95th percentiles) from the original model and reestimated the PPML specification. Estimated coefficients were around -3.4 in both approaches, which suggests an increase in oil imports of 85 percent for a 1-standard-deviation decrease in Political Distance. See Figures A1 and A2 in the online appendix.

²¹ The quota system restricted the amount of crude oil and refined products imported to the United States and gave preferential treatment to oil imports from Canada, Mexico, and, somewhat later, Venezuela.

obtained when we restrict the samples by excluding observations for countries under sanctions or engaged in interstate wars. In other words, the political limits on oil trade on which we focus are distinct from a disruption effect. Finally, we also show that although the political effect remains negative, it becomes much less significant both economically and statistically when we focus on key votes to measure political distance in the smaller subsample over the 1983–2000 period.

4.2. *Lead-Lag Effects and Simultaneity Concerns*

In their history of trade over the second millennium, Findlay and O'Rourke (2007) emphasize the two-way interaction between trade and geopolitics. The expression "oil diplomacy" refers to using oil in foreign relations to pursue a country's international interests, although in our case it is natural to interpret our results as oil companies responding to changes in geopolitical risks driven by changes in international politics because in the United States import decisions are highly decentralized. Table 5 reports the estimates for the effects of concurrent, lagged, and future political distance using our preferred PPML estimation.²² In all specifications the estimated coefficients of the lagged Political Distance term are more significant both economically and statistically than the coefficients of the current measure. One simple way to check if there is a feedback effect from oil imports to political distance is to add a future level of political distance to the regression model. Contrary to the oil diplomacy argument, the future level of political distance does not have a significant impact on oil imports: the implied effect is one-eighth of the effect of the lagged distance and is not statistically significant. By contrast, lagged political distance always considerably reduces oil imports. Interestingly, the result of the complete specification in column 5 shows that only the two lagged Political Distance variables are significantly (in both the statistical and the economic sense) correlated with oil trade.²³

Another way to address the potential simultaneity bias problem is to use instrumental variables. We see from Figure 2 that the Iranian Revolution led by Khomeini changed U.S.-Iran relations dramatically. It appears implausible that the deterioration of U.S.-Iran relations was driven by a sudden drop in demand for Iranian oil. A number of studies have shown how leadership changes, especially in nondemocratic countries, affect economic policy and political outcomes (for example, Jones and Olken 2005, 2009).²⁴ Inspired by the example of the Iranian Revolution, in which Khomeini reached power through irregular

²² Similar results are obtained using probit and OLS estimations. These results are available on request.

²³ Interestingly, Alesina and Dollar (2000) also prefer to interpret the association between foreign aid and UN voting patterns as donors favoring their political alliances in disbursing aid instead of aid being used to buy political support in the United Nations, partly because many UN votes are not very important per se.

²⁴ More recently, Dreher and Jensen (2013) show that leadership change affects a country's UN voting with the United States.

Table 5
Political Distance and U.S. Oil Imports: Lagged Effects

	(1)	(2)	(3)	(4)	(5)
Political Distance _{<i>t</i>}	-2.630 ⁺ (1.506)				-.208 (.555)
Political Distance _{<i>t</i>-1}		-4.302** (1.614)		-4.084** (1.381)	-2.975** (1.027)
Political Distance _{<i>t</i>-2}			-3.906** (1.460)		-2.501** (.943)
Political Distance _{<i>t</i>+1}				-.557 (1.220)	.042 (1.087)
Observations	2,432	2,421	2,409	2,421	2,409

Note. Robust standard errors clustered at the country level are reported in parentheses. All regressions control for Political Distance, GATT/WTO Membership, Regional Trade Agreement, Log Exporter's GDP, Log Exporter's Population, Civil War dummies, Exporter's Democracy, Militarized Interstate Disputes, and year and country fixed effects. There are 82 countries.

⁺ Significant at the 10% level.

** Significant at the 1% level.

means,²⁵ we exploit similar changes in the identity of national leaders in potential oil-exporting countries to construct an instrument for political distance. In particular, we construct leader dummies for these leaders (and their successors if they reached power through regular means) that are not driven by foreign intervention as instruments for political distance.²⁶ Our two-stage least squares estimates are consistent with our hypothesis that political distance has a negative effect on oil imports. The results are relegated to the online appendix.²⁷

5. Testing Alternative Explanations

To this point, we have documented a robust negative relationship between political distance and U.S. oil imports, which we have interpreted as evidence of the effect of international politics on import decisions of American oil companies. Why should international politics affect import decisions of these private oil companies but not other importing firms?

We examine two possible explanations. First, under the strategic-commodity hypothesis, import decisions for strategic commodities, such as oil, are not driven solely by profit-maximizing motives because of strategic and security consid-

²⁵ According to the political leaders data set Archigos (Goemans, Gleditsch, and Chiozza 2009), leaders are selected into and leave political office in a manner prescribed by either explicit rules or established conventions. In an autocratic regime, for example, changes in leader that occur through designation by an outgoing leader, hereditary succession in a monarchy, and appointment by the central committee of a ruling party would all be considered regular transfers of power from one leader to another.

²⁶ To ensure that new leadership has sufficient time to influence policy, in creating the leader dummies we impose the criterion that the leadership has to last for more than 2 years. Similar results are obtained when we use different cutoffs.

²⁷ Because of the computation burden in estimating nonlinear models with instrumental variables and a large number of fixed effects, we focused on the linear specification.

erations imposed by governments. When either importers or exporters have national oil companies controlled by governments, for instance, it is not difficult to understand that trade is subject to state influence (for example, the China-Venezuela oil deal).²⁸ The strategic-commodity hypothesis implies that the political effect on U.S. imports should be more pronounced for nondemocratic exporting countries, because according to the democratic peace doctrine democracies do not fight with each other. Theoretical foundations for the democratic peace doctrine are provided by Bueno de Mesquita et al. (1999) and more recently Jackson and Morelli (2007). For a similar reason, one may expect international politics to have a larger effect on oil imports to countries that are major powers. Moreover, strategic and security considerations imply similar trade patterns for the import of other strategic commodities.

An alternative explanation is that oil imports are affected by political risk because oil trade is often associated with backward vertical FDI, which is subject to selective discrimination risks such as tax renegotiation and expropriation. Oil production involves massive up-front investments in exploration, and geological knowledge is country or even oil field specific. In the presence of sizeable appropriate quasi rents (Klein, Crawford, and Alchian 1978), it is common for bilateral oil trade to be subject to state influence with relationship-specific investment in exploration, pipelines, and refining capacity.²⁹ International contracts are largely self-enforcing (Thomas and Worrall 1994), especially when the oil sector in many oil-rich countries is controlled by the state-owned monopolies. It is well documented that extractive industries are the most vulnerable to government theft (see, for example, Jensen and Johnston 2011)³⁰ and that there are oil-rich countries favoring other foreign oil companies over American ones (Chester 1983). Levchenko (2007) introduces the holdup problem and incomplete contracts into international trade theory and argues that institutional differences are a source of comparative advantage. Under the holdup risk hypothesis, the political effects should be larger for exporting countries with higher expo-

²⁸ The round-trip voyage from Venezuela to the U.S. Gulf of Mexico ports is almost five times shorter than that to China, and hence any effort to diversify Venezuelan oil sales away from the United States to China does not appear to be cost-effective. After all, it appears to be more than political rhetoric when China deposits \$8 billion in an infrastructure development fund in exchange for Venezuelan oil. In the case of coal, Wolak and Kolstad (1991) observe that over 1983–87 Japan imported a significant amount of coal from the United States even though the price of U.S. coal was above that of all other suppliers, whereas the Soviet Union consistently had the smallest market share despite its coal being the cheapest. Wolak and Kolstad consider a pure economic reason of price-risk diversification to explain Japan's coal import strategy, although the trade pattern is also consistent with the close Japan-U.S. security ties during the Cold War.

²⁹ For another insightful discussion of this problem, see Cheung (1983). A related reason why oil is only partially fungible is that oil has to be refined, and refineries are built to handle specific types of oil. For example, according to the U.S. Energy Information Administration (EIA), "Venezuela's crude oil is heavy and sour by international standards. As a result, much of Venezuela's oil production must go to specialized domestic and international refineries" (EIA, Venezuela [<http://www.eia.gov/countries/cab.cfm?fips=VE>]).

³⁰ In an earlier study, Kobrin (1984) documents that mining and petroleum expropriations accounted for 32 percent of all nationalizations over the period 1960–79.

priation risk, and only countries with oil investments overseas are expected to respond to international politics. In general, we also expect to see a similar trade pattern for goods that involve backward vertical FDI.

5.1. *Heterogeneity in Oil-Exporting Countries*

Our first test is to examine if the political effect on U.S. oil imports is more pronounced when oil-exporting countries are nondemocratic or when they have high expropriation risk. First, we analyze whether political distance has a differential effect depending on whether an exporting country is more or less democratic. Democracy is measured by the Polity IV Project index, which combines measures of political competition, constraints on the executive, mode of executive recruitment, and so forth. This measure varies from -10 (hereditary monarchy such as Saudi Arabia and Qatar) to 10 (democracy such as United States and United Kingdom). We code a country as nondemocratic if the Polity index is below -2 (for example, Singapore in 2000). Table 6 shows that Political Distance \times Democracy for the effect of democracy is never significant either statistically and economically.³¹

In Table 6 we also show whether there is a systematic relationship between expropriation risk and political effect on oil trade. Expropriation Risk is constructed as follows: the initial value for each country is set at 0, and then the value is updated over time to measure the cumulative incidence of oil nationalizations since 1960. A country is classified as having a high expropriation risk if there is at least one oil nationalization over the sample period. The mean number of oil nationalizations by the end of the sample period is 2, with a standard deviation of 5.

Fixed-effects estimates presented in Table 6 indicate that the political distance effect differs considerably depending on expropriation risk. An increase in the number of expropriations by 1 standard deviation (which is similar to going from countries such as Saudi Arabia and Qatar with only two expropriations to Venezuela with eight) changes the Political Distance coefficient by -3.5 , which is more than twice the magnitude of the political distance effect for countries with no expropriations. All other things being equal, an increase in Political Distance by 1 standard deviation (.18) translates into a 35 percent decrease in oil imports for countries with no oil expropriations (for example, the United Kingdom and the Netherlands). At the same time the effect for a high-risk

³¹ Implied effects of Democracy on Political Distance are quite moderate in magnitude as well. The largest coefficient on Democracy \times Political Distance of .065 obtained in the PPML specification suggests that an increase in democratic score by 1 standard deviation (which is equivalent to going from a monarchy such as Saudi Arabia to an autocracy such as Kazakhstan in the 1990s) implies a decrease in the (negative) impact of Political Distance by .45 ($= .065 \times 7$), which is around one-tenth of the estimated effect of Political Distance for a country with a mean democratic score (of 2). The implied effects in OLS and probit specifications are even smaller.

Table 6
Heterogeneous Political Effect on Oil Imports by Exporter:
Democracy versus Expropriation Risk

	Probit (1)	OLS (2)	PPML (3)
Effect of democracy:			
Political Distance × Democracy	.017 (.029)	-.001 (.088)	.065 (.048)
Political Distance	-.465 ⁺ (.283)	-3.208* (1.393)	-4.130** (1.593)
Democracy	-.012 (.018)	-.009 (.070)	-.062 (.043)
Observations	1,871	1,150	2,421
Countries	57	65	82
Effect of expropriation risk:			
Political Distance × Expropriation Risk	-.433* (.208)	-.639 (.417)	-.714** (.271)
Political Distance	-.305 (.322)	-2.605 ⁺ (1.397)	-2.358 (1.803)
Expropriation Risk	.402** (.148)	.718* (.330)	.594* (.259)
Observations	1,871	1,150	2,421
Countries	57	65	82
Effect of democracy versus expropriation risk:			
Political Distance × Democracy	.002 (.031)	-.032 (.092)	.020 (.052)
Political Distance × Expropriation Risk	-.429* (.213)	-.664 (.442)	-.774** (.281)
Political Distance	-.301 (.317)	-2.527 ⁺ (1.392)	-2.614 (1.727)
Democracy	-.004 (.019)	.004 (.071)	-.048 (.040)
Expropriation Risk	.397** (.152)	.740* (.347)	.697** (.259)
Observations	1,871	1,150	2,421
Countries	57	65	82

Note. Robust standard errors clustered at the country level are reported in parentheses. All fixed-effects regressions control for Political Distance, Import Sanctions, Export Sanctions, GATT/WTO Membership, Regional Trade Agreement, Log Exporter's GDP, Log Exporter's Population, Log Exporter's Oil Reserves, Civil War dummies, Militarized Interstate Disputes, and year and country fixed effects. OLS = ordinary least squares; PPML = Poisson pseudo-maximum likelihood.

⁺ Significant at the 10% level.

* Significant at the 5% level.

** Significant at the 1% level.

exporter with eight expropriations (like Venezuela³² after 1975) implies a decline in oil imports of 75 percent.³³

It has also been documented that nondemocratic countries expropriate more

³² According to the Polity IV Project data set, Venezuela was ranked as quite close to democracy with a score of 8–9 between 1970 and 2000.

³³ Effects are computed as $\exp[-.18(-2.358 - .714 \times x - 1)]$, where x is the number of expropriations.

frequently than do democratic ones (Li 2009). To distinguish between the two hypotheses, Table 6 reports the results of the regressions for the effect of democracy versus expropriation risk, controlling for both Political Distance \times Democracy and the Political Distance \times Expropriation Risk. The negative and significant estimates of the latter and the lack of significance (both economically and statistically) of the former suggest that American firms are discouraged from importing oil from politically hostile regimes because of their higher expropriation risk.³⁴ When we examine the effect of heterogeneity using different subsamples, we find that among nondemocratic oil exporters, the political impact on oil trade is stronger in the subsample of the countries with higher expropriation risk.

We also experiment with a similar exercise using the U.S. import of nonpetroleum goods. The results are mixed, and they are reported in the online appendix. Overall, expropriation risk, measured by the number of expropriation cases in all sectors reported in Kobrin (1984) and Minor (1992), does not appear to affect the relationship between international politics and import of nonpetroleum goods systematically. One possible interpretation is that expropriation risk is sector specific, and hence summing up expropriation cases of all sectors provides a noisy measure of expropriation risk in most sectors. There is some evidence that international politics matters more when an exporter is a non-democratic country, as the estimate of Political Distance \times Democracy is positive and statistically significant in the Poisson specification. The result, however, is not robust to using the subsamples of democratic and nondemocratic countries.

5.2. Heterogeneity in Oil-Importing Countries

We repeat our exercise using oil import data from the top 10 oil-importing countries in 1980. Table 7 reports the fixed-effects estimates of the impact of political distance on oil imports of these 10 countries. Five are countries classified as major powers according to the Correlates of War Project.³⁵ According to *Petroleum Intelligence Weekly*, in contrast, for the top 10 largest oil companies in 2008, seven of them are international ones owned by companies from four countries that are major powers, namely, China, France, the United Kingdom, and the United States.³⁶ Even for Japan, the ratio of self-developed oil to its total imports is nontrivial, partly because of the Japanese governmental support in overseas exploration (Koike, Mogi, and Albedaiwi 2008). The only top oil im-

³⁴ The coefficient for Political Distance \times Democracy is one-third of that for the effect of democracy in Table 6, while the coefficient for Political Distance \times Expropriation Risk remains about the same in magnitude as that for the effect of appropriate risk in Table 6.

³⁵ Note that four of them, namely, China, France, the United Kingdom, and the United States, are also permanent members of the UN Security Council.

³⁶ The remaining three companies are state-owned ones from Saudi Arabia, Iran, and Venezuela. According to the Organisation for Economic Co-operation and Development data, in 2008, the United States, the United Kingdom, and France were also among the top five countries in their outward foreign direct investment in the extraction of crude petroleum and natural gas.

Table 7
Political Distance and Oil Imports to Other Countries

	Probit	OLS	PPML
United States	-.443 (.294)	-3.209* (1.403)	-4.301** (1.614)
Observations	1,871	1,150	2,421
Countries	57	65	82
R ²	.410	.769	
United Kingdom	-.950+ (.497)	-1.970 (1.318)	-2.692* (1.047)
Observations	1,439	728	2,421
Countries	42	48	82
R ²	.414	.744	
France	-1.303* (.560)	.812 (1.811)	-.112 (1.163)
Observations	1,267	740	2,421
Countries	41	49	82
R ²	.556	.806	
Japan	-.578 (.517)	-2.783 (2.709)	-3.595* (1.452)
Observations	1,190	616	2,421
Countries	34	42	82
R ²	.341	.822	
China	-.186 (.569)	-.986 (5.594)	-4.997 (3.514)
Observations	738	220	2,382
Countries	36	37	81
R ²	.535	.782	
Italy	-.369 (.259)	.569 (1.673)	-.437 (1.138)
Observations	1,594	740	2,421
Countries	53	62	82
R ²	.398	.846	
Spain	-1.163** (.342)	-.720 (1.179)	.425 (1.167)
Observations	1,579	641	2,424
Countries	49	54	82
R ²	.474	.823	
Netherlands	.074 (.575)	-.409 (2.376)	-2.076* (.941)
Observations	1,267	638	2,421
Countries	36	41	82
R ²	.443	.738	
South Korea	-1.035 (.676)	.803 (4.332)	.527 (3.549)
Observations	1,408	456	2,421
Countries	44	45	82
R ²	.507	.831	
India	-1.175** (.288)	6.646+ (3.484)	4.452 (3.828)
Observations	557	178	2,421
Countries	21	21	82
R ²	.524	.900	

Note. Robust standard errors clustered at the country level (country-pair level for the Poisson pseudo-maximum likelihood [PPML] specification) are reported in parentheses. Country-pairs, not countries, are reported for the PPML specification. Except for the PPML specification, all fixed-effects regressions control for Political Distance, Import Sanctions, Export Sanctions, GATT/WTO Membership, Regional Trade Agreement, Log Exporter's GDP, Log Exporter's Population, Log Exporter's Oil Reserves, Civil War dummies, Exporter's Democracy, Militarized Interstate Disputes, and year and country fixed effects. OLS = ordinary least squares.

+ Significant at the 10% level.

* Significant at the 5% level.

** Significant at the 1% level.

porter that is not a major power and with a global oil giant company operating overseas is the Netherlands.³⁷

We replicate the results of the impact of Political Distance on U.S. oil imports. In the case of the United Kingdom, the effect of Political Distance on oil imports appears to be somewhat weaker when both margins are combined: for a 1-standard-deviation decrease in Political Distance, U.K. oil imports increase by around 60 percent compared with more than 100 percent in the case of the United States. While the political distance effect is significant only on the extensive margin³⁸ in France, the effect is economically significant for both Japan and China according to the PPML estimates (respectively, an 85 and a 140 percent increase in oil imports for a 1-standard-deviation decrease in Political Distance), although the estimate in the case of China is not very precise. With the exception of France, it is interesting to note that while the ownership and market structures of the oil sector differ significantly across these countries, both private and national oil companies appear to respond to international politics when deciding their sources of oil imports.

We also report the effect for other major oil-importing countries that are not major powers. According to our preferred PPML estimator, a significant negative effect is observed only in the case of the Netherlands, where the global oil giant Royal Dutch Shell was founded (30 percent decline in oil imports for a 1-standard-deviation increase in Political Distance). The estimated coefficients are positive for Spain, South Korea, and India. The coefficient for Italy is negative but is only one-tenth of the coefficient for the United States (with an 8 percent increase in oil imports for a 1-standard-deviation decrease in Political Distance). The probit estimates also suggest that Political Distance impedes oil imports into Spain, South Korea, and India on the extensive margin. The case of the Netherlands provides an important critical test supporting the holdup risk hypothesis, although we cannot easily reject the strategic-commodity hypothesis given that major powers also tend to have substantial oil investments overseas.

We obtain qualitatively similar results when considering import of nonpetroleum goods into the same set of countries, although the magnitudes of the estimated effects are smaller (see the online appendix). It is interesting to note that among countries that are not major powers, only the Netherlands, one of

³⁷ During our sample period, Royal Dutch Shell was headquartered in London, with the United Kingdom having a 40 percent share of the business. So patterns we observed for both the United Kingdom and the Netherlands can be affected by the actions of this company. We would like to thank Sam Peltzman for suggesting this point.

³⁸ Marginal effects reported for probit estimation imply that a 1-standard-deviation decrease in Political Distance ($\Delta x = -.18$) implies an increase in the probability of importing by less than .1 for the United States, Japan, and China and around .2 for the United Kingdom and France. Mean probabilities of importing from countries with nontrivial oil reserves are around .3 for the United Kingdom, France, and Japan. The United States imports a positive amount of oil from half of the potential exporters, while for China this fraction is .1.

the world's largest suppliers of investment capital in terms of outward FDI stock, diversifies its nonpetroleum goods imports away from its political opponents.³⁹

6. Concluding Remarks

According to Findlay and O'Rourke (2007, p. xix), 19th-century globalization was as much a geopolitical phenomenon as it was a technological one, because imperialism was an important driver of globalization during that period. In their words, "[T]he pattern of trade can *only* be understood as being the outcome of some military or political equilibrium between contending powers." Because history has repeatedly demonstrated that political choices can make the world less integrated, Findlay and O'Rourke conclude that globalization is potentially reversible.

This paper adds to the growing empirical literature on the role of international politics in trade. Our results quantify the (lack of) significance of political influence on international trade in the contemporary world. Most important, the evidence we present highlights the significance of heterogeneity in the response of trade to international politics. It is difficult to refute the proposition that globalization is reversible. Nonetheless, given that the main driving forces of the two waves of globalization are fundamentally different, it is important to understand the nature of the political forces shaping modern globalization. Unlike much of the history in the last millennium, the expansion of world trade in the contemporary world does not come from "the barrel of a Maxim gun, the edge of a scimitar, or the ferocity of nomadic horsemen" (Findlay and O'Rourke 2007, p. xviii). Our findings that support the holdup risk hypothesis suggest that, even when international politics matters for trade, the relationship between politics and trade has an economic origin. If the political limits on trade in the contemporary world are driven primarily by holdup risks once relationship-specific investments are sunk, to predict the future of globalization, one cannot ignore FDI by multinational corporations, investment treaties, and the international legal framework (Ruta and Venables 2012).

One weakness of the evidence supporting the holdup risk hypothesis is that our results are based solely on trade data. Political scientists have long recognized that institutions and the conduct of political leaders affect foreign investment (see, for example, Jensen 2003). Although it is beyond the scope of this paper to provide a detailed analysis of foreign-investment activities, Figure 5 suggests that major U.S. oil companies' foreign investment (measured by net-ownership-

³⁹ In an earlier version of the paper (Mityakov, Tang, and Tsui 2012), we also experimented with heterogeneity in traded goods. When we examined the effect on import of strategic commodities identified by a report from the U.S. Office of Technology Assessment, the evidence for the strategic-commodity hypothesis was mixed. While we also did not find a systematic difference between the import of goods with different levels of contract intensity (as measured by Nunn [2007]), we did find some evidence that international politics affects import of only research-and-development-intensive goods (as measured by Fernandes and Tang [2012]).



Figure 5. Time series of foreign ownership interest reserves by region

interest oil reserves) may be subject to political influence.⁴⁰ The decline in U.S. oil activities in both Africa and the Middle East in the 1980s is consistent with the deterioration of U.S.-Libya and U.S.-Iran relations. More recently, the increase in U.S. oil activities in the Middle East and its decrease in other Western Hemisphere countries (mainly Venezuela and Mexico) also coincide with the collapse of the Iraqi regime of Saddam Hussein and the rise of Chávez.⁴¹ Not all energy companies based in the United States are vertically integrated with exploration investment overseas. Future research can explore firm-level information about oil import patterns and investment activities overseas to quantify the economic cost of potential holdup.

When oil companies do not minimize the transportation cost of oil imports but instead diversify their import sources, we have identified a cost of oil dependence even in the absence of state intervention or interstate war. Given that

⁴⁰ The data in Figure 5 are from the Financial Reporting System survey, which is conducted by the EIA. The data set contains worldwide financial and operating information for the major energy-producing companies based in the United States. Net ownership interest is defined as net working interest plus own royalty interest.

⁴¹ ExxonMobil Corporation and ConocoPhillips, two of the largest U.S. oil companies, abandoned their multi-billion-dollar investments in the heavy-oil deposits in Venezuela following the breakdown of the negotiations with Chávez's government in 2007. While ExxonMobil and ConocoPhillips refused to reduce their stakes that would enable them to keep pumping oil in Venezuela, BP of Britain, Chevron of the United States, Statoil of Norway, and Total of France negotiated deals with Venezuela's state oil company to continue on as minority partners.

the oil industry is highly vertically integrated, the cost arises because of the potential holdup problem in the upstream sector, and enforcement of international contracts is less costly when the countries involved are political allies. Quantifying this cost of oil dependence provides a useful step toward a better understanding of the relationship between energy policy and foreign policy. However, we should emphasize that our results do not imply that such an oil import diversification is necessarily inefficient. On the contrary, to the extent that there are security externalities due to supply disruptions, import diversification can be viewed as a means of internalizing the externalities. An evaluation of the efficiency implications for energy policy requires a careful distinction between cases in which import decisions are decentralized and those in which import is controlled by the government, a general equilibrium framework that specifies the alternative trading pattern and in particular the cost of substitution when oil importers do not minimize transportation costs, and estimates of the direct benefit as well as other possible political side payments of import diversification.

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