Political Limits to Globalization[1]

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We live in an unprecedented age of globalization, where technology, ideas, factors of production and goods are increasingly mobile across national boundaries. The current wave of globalization is distinguished from previous ones in part because of the major role of information technology. Nevertheless, globalization is not irreversible. Openness to international trade, finance and technology is a choice that countries make, and despite the facilitating role of information technology, many countries, even many leading players in the world economy including the United States, China, India, Brazil and Russia, could decide to close their borders. A major cause of the end of the previous (also historically unprecedented) 19th century wave of globalization was disillusionment with the international economic order, in large part precipitated by the Great Depression (e.g., Harold James, 2001). Another, somewhat less emphasized though not necessarily less important cause was the rise of nationalism, militarism and international conflict (e.g., Ronald Findlay and Kevin H. O'Rourke, 2007, Reuven Glick and Alan M. Taylor, 2006).[2] The previous wave of globalization took place in the context of the 100 years following the end of Napoleonic wars, which were unusually peaceful for European powers; it came to an end following the most widespread conflict that human society had experienced until then, World War I.

In this paper, we emphasize that globalization, which depends on political decisions of nation states, has political limits, and that these limits are related to nationalism and militarism. Despite the increasing reach of globalization, anecdotal evidence suggests that nationalism and militarism are strong around the world, in countries ranging from the United States to China, Russia and India (e.g., Robert Kagan, 2008). To go beyond anecdotal evidence, in this paper we proxy nationalist and militarist sentiments by military spending.[3] In addition to being a useful proxy, military spending might itself impact trade, for example, because it contributes to tensions or leads to skirmishes between countries. Figure 1 shows the evolution of world trade and total military spending between 1988 and 2007. It depicts the steady rise of trade over the past two decades,

during which we have data on military expenditures and the size of military personnel across a large number of countries (as is well known, the increase in the volume of trade during this time period reflects longer-term trends, e.g., Findlay and O'Rourke, 2007). It also shows that military spending, after declining for a number of years, started increasing from the mid-1990s onwards. This pattern indeed indicates that there might be more than anecdotal evidence pointing to a strengthening in nationalist sentiments and militarism.

Our main contribution in this paper is to show that military spending, in our interpretation as a proxy for nationalist sentiment and militarism, is negatively associated with trade. We present two types of evidence. First, we show that between 1985 and 2005, countries that experience a greater increase in military expenditure or the size of the military show a relative decline in the volume of trade (compared to other countries in the sample). Moreover, countries whose trading partners ("neighbors") show greater increases in military expenditure or the size of the military also show a similar decline. These patterns are robust across different specifications and in different subsamples. Second, we investigate bilateral trade patterns again between 1985 and 2005. The data suggest that trade between two countries grows less rapidly when both become more militarized. While not as robust as the first set of findings, this pattern is generally present in a variety of different specifications.

In summary, the data point to a negative correlation between militarization and trade. Although we cannot ascertain a causal relationship, the evidence is broadly consistent with an association between the strength of nationalist sentiments and militarism, as proxied by military expenditures or the size of the military, and international trade. Overall, this evidence suggests that there might be political and military limits to, and dangers against, globalization.

Our paper is related to three separate literatures. First, several studies in economic history have investigated the causes of the end of the 19th century globalization (e.g., James, 2001, Barry Eichengreen and Douglas A. Irwin, 2009). Second, there is a large and growing literature in international relations on the so-called "liberal theory," based on ideas first articulated by Montesquieu and Kant, that greater trade makes war less likely (see, for example, John R. Oneal and

Bruce Russett, 1999, Simon Polachek, 1980). Several papers in this literature have simultaneously estimated the effect of trade on war and of war disruptions on trade (e.g., Philippe Martin, Thierry Mayer and Mathias Thoenig, 2008, or Havard Herge, Oneal and Russett, 2009), and find a negative effect of war on trade. It is worth noting, however, that the effect of militarization we focus on is distinct from this disruption effect, and we demonstrate this by showing that the effect survives when all countries or country pairs engaged in military conflict are excluded from the data.[4] Finally, our paper is also related to Anna Maria Mayda and Dani Rodrik (2002) and O'Rourke and Richard Sinnott (2001), who document a negative relationship between attitudes towards trade and nationalist sentiment in survey responses.

I. Data

Our measure of trade (openness) is a country's trade share of GDP in constant prices from Summers-Heston dataset, 2002. We use this same dataset to measure real GDP per capita and total population.[5]

Bilateral trade data are from the International Monetary Fund *Direction of Trade Statistics, 2009* (DoT) CD-ROM. Let X_{ijs} denote bilateral between i and j in year s, meaning the sum of exports from i to j and exports from j to i in year s. We calculate X_{ijs} for all country pairs in year s for which both flows from i to j and from j to i are available. These flows can be measured using either FOB (free on board) exports from i to j or CIF (cost, insurance, and freight) imports by j from i. When both are available, we take the average, and otherwise we use whichever measure is available. Using this measure, we construct a measure of bilateral trade between i and j as a fraction of i's total trade and we multiply this measure by i's trade share from the Summers-Heston dataset so as to achieve a measure of the bilateral trade between i and j as a fraction of i's GDP.

Military spending (as a fraction of GDP) is from the Stockholm International Peace Research Institute FIRST Database.[6] We multiply this fraction by total GDP using GDP per capita and population from the Summers-Heston dataset to create a measure of military spending. Military size measures total military personnel and is also from FIRST.[7] Using the military spending and military size data, we construct a measure of the militarization of "neighbors". Specifically, let

ω_{ij} represent the inverse distance in kilometers between i's capital and j's capital.[8] We then calculate a weighted average of the log military spending of country i's neighbors using the ω_{ij}'s as the (relative) weight of country j ($\neq i$) in this calculation. We use the same method to calculate the weighted average of the log military size of neighbors. This measure captures both the militarization of neighboring countries which would pose the greatest military threat to country i and also the militarization of those countries with which country i should trade most heavily according to the standard gravity models.

For the regressions using military spending, the beginning date of the sample is 1988 and the end date is 2005. For the regressions using military size, the beginning date of the sample is 1985 and the end date is 2003. These dates are chosen to maximize the number of countries in our sample given data availability.

Finally, as a robustness check we exclude countries (or country-pairs) in which a country (at least one of the countries in the pair) experiences a civil or international war between 1985 and 2005. For this exercise, we use the International Peace Research Institute and Uppsala Conflict Data Program Armed Conflict Dataset,[9] and we code a country as experiencing a civil war if it experiences an intrastate armed conflict of *war* intensity, and we code a country as experiencing an international war if it is a primary party in an interstate armed conflict of *war* intensity.

II. Cross-Country Evidence

We start with cross-country evidence and investigate the relationship between militarization and trade using the following long-difference regression model:

$$\Delta y_i = \alpha \Delta m_i + \Delta \mathbf{x}_i' \boldsymbol{\beta} + u_i. \tag{1}$$

Here Δy_i is the change in the trade share of GDP of country i between the beginning and the end dates of the sample; Δm_i is the change militarization (i.e., log military spending or log military size) of either country i or of country i's neighbors; $\Delta \mathbf{x}_i$ represents the change in a vector of covariates (log GDP per capita, log population, and OECD differential trends in some specifications); and

u_i is an error term. We focus on long-difference specifications to capture medium-run trends as opposed to annual fluctuations. Naturally, this specification is algebraically equivalent to a panel data regression with two observations per country and a full set of country and year fixed effects.[10]

Table 1 reports estimates of equation (1). In Panel A, militarization is measured as (log) military spending, while in Panel B militarization is (log) military size. Throughout we report standard errors that are robust against arbitrary heteroskedasticity.

Column 1 in Panel A reports an estimate of α of -17.6 with standard error (s.e.= 6.3). This coefficient, which is statistically significant at less than 1%, also implies an economically large effect: a 10 percent increase in military spending over two decades, holding all else constant, is associated with a reduction in trade share to GDP of approximately 1.8 percent.[11] This result is illustrated graphically in Figure 2, which displays a residual plot of trade share vs. military spending and shows a strong negative relationship.

Columns 2-4 explore the robustness of this pattern. In column 2, we exclude Asian countries, many of which have experienced an increase in militarization simultaneously with rapid increases in international trade, which may have had other causes, related to the increasing ability of Western companies to outsource and offshore to Asia. The estimate of α increases to -22.6 (s.e.= 7.1), confirming that the relationship between militarization and trade is stronger without Asian countries. Column 3 investigates whether our results capture the impact of trade disruption caused by wars; it excludes countries engaged in civil wars or in international wars. Interestingly, our results are stronger once these countries are excluded (coefficient -24.5, s.e.= 9.3). This bolsters our belief that our results are related to the relationship between trade and militarism. Finally, column 4 includes a dummy for OECD countries, allowing differential trend in trade for this group of countries. Even though OECD countries appear to experience faster growth in trade, this has no effect on our estimate of α, which is almost identical to that in column 1.

Columns 5-8 are analogous to columns 1-4, but use the log military spending of neighbors, as defined in the previous section, in place of m_i. In column 5, the coefficient estimate of α is -33.0 (s.e.= 14.3). This estimate is almost twice that in column 1, suggesting that increases

in militarization by geographically proximate neighbors is associated with even a larger relative decline in trade. Columns 6-8 show that this pattern is robust to the same set of specification checks as in columns 2-4. Finally, column 9 includes both log militarization of a country and the weighted log militarization of its neighbors. The effect of own military expenditure is very similar to that in column 1 and statistically significant at less than 1%, while the effect of neighbors' military expenditure is still large but no longer statistically significant.

In Panel B, militarization is measured as log military size. The results are similar to those in Panel A, with a somewhat smaller quantitative effects from own militarization and larger effects from militarization of neighbors.

Overall, the cross-country evidence shows a relatively robust association between changes in military expenditure or size of military personnel and changes in international trade between 1985 and 2005.

III. Evidence from Bilateral Trade

We next investigate more disaggregated bilateral trade flows data. This allows us to control not only for global trends but also for differences between country pairs, so that we can directly look at whether a country will reduce its trade with a (potential) trading partner that is becoming more militarized. More specifically, we estimate the following gravity-type equation:

$$\Delta y_{ij} = \alpha \Delta m_i m_j + \Delta \mathbf{x}'_{ij} \boldsymbol{\beta} + \eta_i^H + \eta_j^N + u_{ij}, \tag{2}$$

where Δy_{ij} now represents the change in the trade with country j as a fraction of country i's GDP; $\Delta m_i m_j$ is the change in the interaction of i and j's militarization; and the vector $\Delta \mathbf{x}_{ij}$ includes change in the interaction of log GDP per capita and log population of countries i and j; η_i^H and η_j^N represent a full set of home and trading partner country fixed effects; and u_{ij} is the error term which is allowed to have an arbitrary pattern of heteroskedasticity with clustering at the country-pair level.

Analogously to equation (1), this specification focuses on long differences and removes all

country-pair specific characteristics that might simultaneously affect bilateral trade and militarization of either country. In addition, the specification removes all country specific trends (which are the focus of Table 1) by including a full set of home country and trading partner country dummies. The coefficient of interest is α which measures the effect of a country's militarization interacted with that of its trading partner. The results from the estimation of equation (2) are reported in Table 2.

Columns 1-4 use log military spending as our measure of militarization. Column 1 shows the interaction effect of home and trading partner's militarization is negative and statistically significant at less than 1% (α = -0.090 and s.e.= 0.029), so that there is a strong negative association between a joint rise in the militarization of the country pair and bilateral trade.[12]

Column 2 excludes Asian countries. The results are similar and stronger; the interaction effect is both larger and more precisely estimated. Column 3 excludes country pairs where at least one country experienced a civil or international war; the results are also stronger than those in column 1.[13] Finally, column 4 includes two dummy variables, one for both countries being in the OECD, and one for only one country being in the OECD (the omitted group is neither country being in the OECD). The results are again similar to those in column 1.[14]

Columns 5-8 are analogous to columns 1-4, except that militarization is measured as log military size. The estimates in these columns are also negative, though generally imprecisely estimated and insignificant.

IV. Concluding Remarks

This short paper emphasized that, despite the major advances in information technology encouraging globalization, openness to trade is still a political choice. This suggests that changes in domestic political equilibria might introduce limits to the process of globalization. We illustrated this general point by focusing on the effect of militarization, which has seen a recent revival, on country-level and bilateral trade. The evidence we presented suggests that countries experiencing greater militarization and those witnessing greater militarization among their neighbors (trading partners) have seen relatively smaller increases in trade over the past 20 years. We also docu-

mented that country pairs experiencing greater joint increases in militarization have seen relative declines in bilateral trade.

Our results come with several caveats. First, it is unclear to what extent these empirical patterns reflect causality since trade and militarization simultaneously affect each other and may themselves be affected by a third factor. Second, we do not have an explanation for the apparent rise in nationalism and militarization around the world.

Footnotes

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[2]Militarism is defined as the doctrine or policy of "aggressive military preparedness," which typically leads to a country maintaining a strong military capability to defend or promote its national interests.

[3]This is true almost by definition of militarism. Tom W. Smith and Lawrence Jarkko (2001) provide several measures of "national pride" constructed from survey evidence, some of which are strongly correlated with military spending across countries.

[4]Our results may nonetheless capture the fact that greater military spending by a country and its neighbors increases the likelihood of military conflict in the future, the anticipation of which discourages trade. We view this as part of the impact of militarism on trade in which we are interested.

[5]Trade and GDP data are missing for Russia for 1988 so we use the 1989 value.

[6]*Facts on International Relations and Security Trends Database.* http://first.sipri.org/

[7]Military spending in 1988 is missing for China and for Russia, so we use the military spending from 1989 for both observations.

[8]Distance between capital cities is from Kristian S. Gleditsch and Michael D. Ward (2001).

[9]*Armed Conflict Dataset.* http://www.prio.no/CSCW/Datasets/Armed-Conflict/UCDP-PRIO/

[10]The results are similar if the level equation corresponding to (1) is estimated on annual data with a full set of country and year fixed effects.

[11]The median country in the sample experienced an increase in log military spending of .16 over the sample period. The increase in trade during the same period is captured by the constant (the equivalent of a common "time effect" in a panel regression). The regression is therefore exploiting whether a country's variation around the global trend towards greater trade is due to variation in militarization.

[12]The quantitative magnitudes of this effect is reasonable. A 0.16 log point increase in the military expenditures of two countries (the median increase in the sample period) reduces their bilateral trade relative to GDP by about 0.0025%. The median of bilateral trade to GDP ratio in the sample is about 0.05%.

[13]None of these results change if we instead only exclude countries which are directly fighting against each other.

[14]In addition, the estimates show that country pairs in the OECD and country pairs with only one country in the OECD have experienced slower growth in bilateral trade than the baseline.

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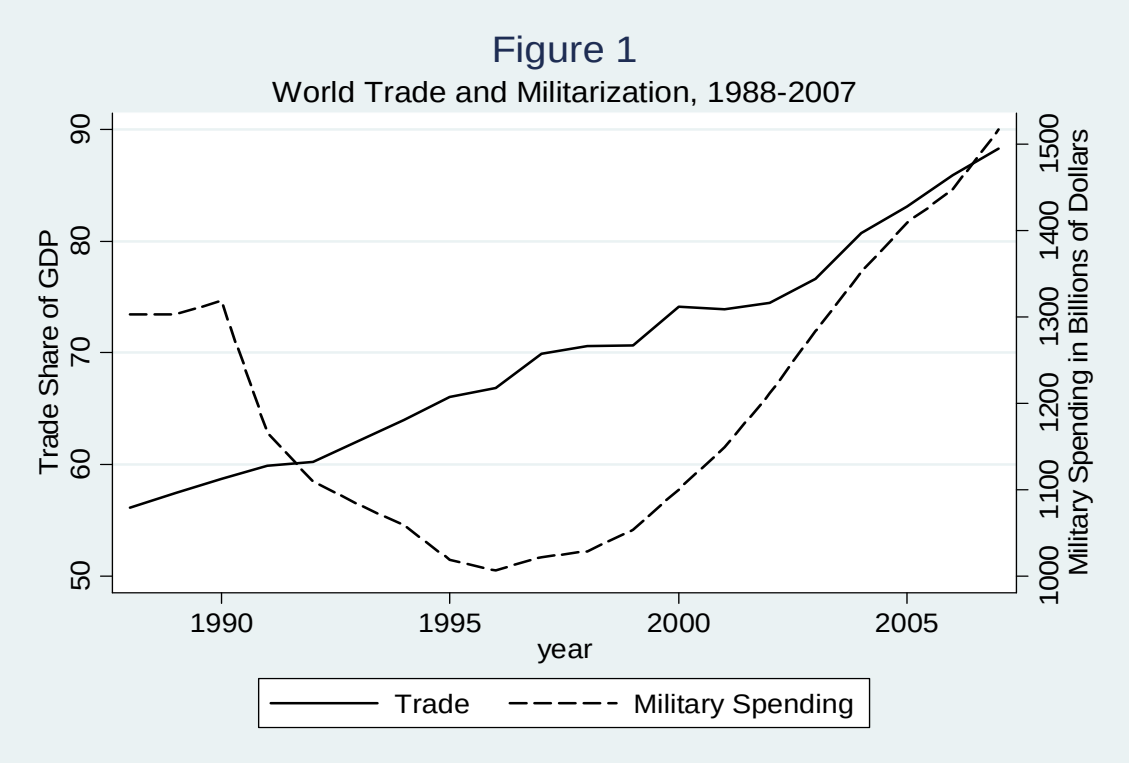

Sample is a balanced panel 1988-2007 for which trade share of GDP and military spending is available for all years. Trade share of GDP is the average across countries for each year. Military spending is the sum across countries and is in 1996 dollars. For reasons of data availability, military spending for Russia and China in 1989 is assigned to 1988; 1991 military spending for Russia is interpolated; and 1990 openness for Russia is assigned to 1988 and 1989. See text for data definitions and sources.

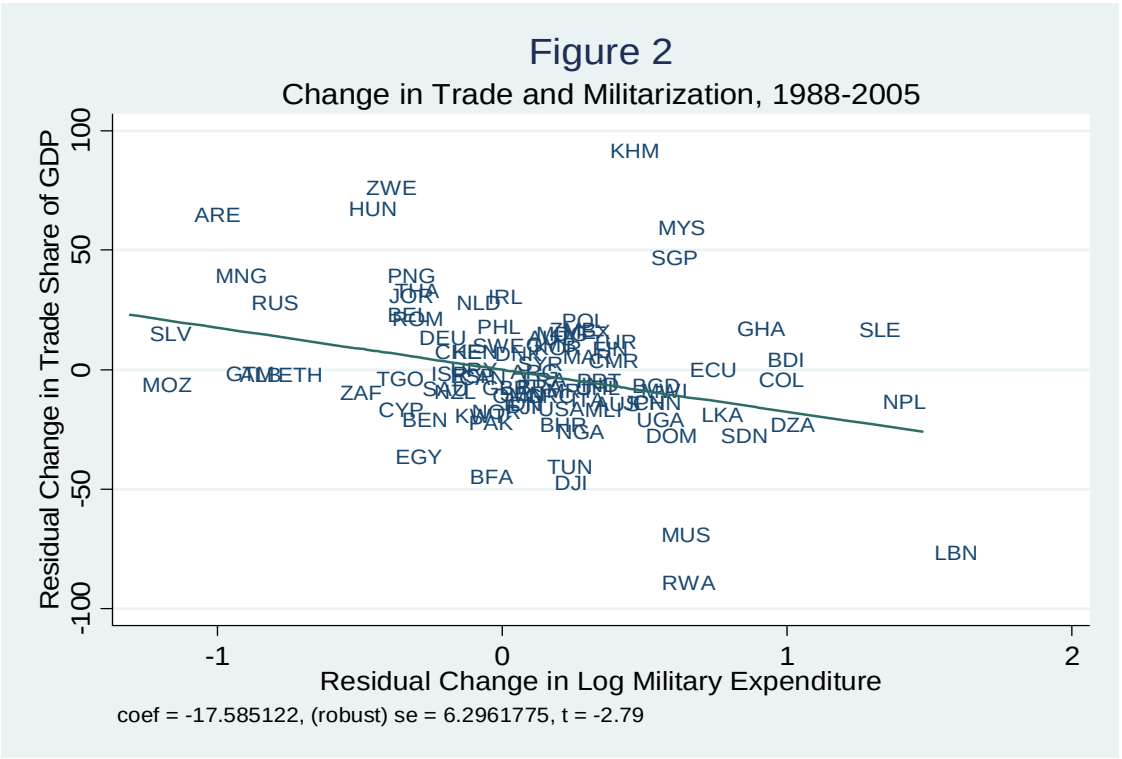

Figure corresponds to the residual plot of regression in column 1 of panel A of Table 1 . See text for data definitions and sources.

Table 1
Long Difference Results using Total Trade Share

	Base Sample, 1985-2005								
	Long Difference OLS	Long Difference OLS, Excluding Asia	Long Difference OLS, Excluding Countries at War	Long Difference	Long Difference OLS	Long Difference OLS, Excluding Asia	Long Difference OLS, Excluding Countries at War	Long Difference	Long Difference OLS
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Panel A	*Dependent Variable is Trade Share of GDP*								
Log Military Expenditure	-17.585	-22.562	-24.529	-17.144					-15.342
	(6.296)	(7.053)	(9.261)	(6.072)					(6.555)
Log Military Expenditure of Trading Partners					-33.032	-36.852	-28.506	-28.745	-21.736
					(14.259)	(15.155)	(16.121)	(13.157)	(14.568)
Log GDP per Capita	37.039	17.542	54.382	36.239	26.841	9.723	36.146	26.151	36.972
	(14.318)	(16.752)	(15.166)	(13.906)	(15.083)	(18.802)	(19.495)	(14.889)	(14.125)
Log Population	13.488	-2.626	29.216	32.833	15.864	1.302	25.764	29.024	24.516
	(19.829)	(22.258)	(20.314)	(23.892)	(25.377)	(28.786)	(30.054)	(30.489)	(22.453)
Country is in OECD				12.696				10.125	
				(6.913)				(7.576)	
Observations	92	75	69	92	92	75	69	92	92
R-squared	0.16	0.23	0.22	0.19	0.11	0.12	0.14	0.13	0.18
Panel B	*Dependent Variable is Trade Share of GDP*								
Log Military Size	-10.006	-11.426	-8.831	-9.939					-7.241
	(4.356)	(4.797)	(6.151)	(4.295)					(3.887)
Log Military Size of Trading Partners					-59.256	-48.796	-51.713	-55.671	-53.396
					(16.028)	(13.563)	(14.304)	(16.094)	(15.644)
Log GDP per Capita	30.748	25.847	40.541	29.945	31.593	26.831	43.514	31.161	32.077
	(7.793)	(8.619)	(7.890)	(7.965)	(8.327)	(9.876)	(8.186)	(8.444)	(8.233)
Log Population	11.730	-5.696	7.530	30.907	44.909	21.449	39.232	50.180	47.904
	(17.204)	(18.502)	(17.501)	(20.866)	(22.259)	(22.181)	(21.553)	(23.006)	(22.336)
Country is in OECD				15.618				6.401	
				(6.591)				(5.752)	
Observations	119	99	89	119	119	99	89	119	119
R-squared	0.19	0.24	0.27	0.21	0.24	0.26	0.33	0.25	0.27

Long difference OLS regression in all columns, with robust standard errors in parentheses. Base sample are countries with data for 1988 and 2005 in panel A and for 1985 and 2003 for panel B; columns 2 and 5 exclude Asia; columns 3 and 6 exclude countries experiencing civil or international war. See text for data definitions and sources.

Table 2
Long Difference Results using Bilateral Trade Share

	Base Sample, 1985-2005							
	Long Difference Fixed Effects OLS (1)	Long Difference Fixed Effects OLS, Excluding Asia (2)	Long Difference Fixed Effects OLS, Excluding Countries at War (3)	Long Difference Fixed Effects OLS (4)	Long Difference Fixed Effects OLS (5)	Long Difference Fixed Effects OLS, Excluding Asia (6)	Long Difference Fixed Effects OLS, Excluding Countries at War (7)	Long Difference Fixed Effects OLS (8)
	Dependent Variable is Bilateral Trade as Share of Home Country GDP							
Log Military Expenditure of Home Country x	-0.090	-0.143	-0.121	-0.068				
Log Military Expenditure of Trading Partner	(0.029)	(0.027)	(0.050)	(0.029)				
Log Military Size of Home Country x					-0.039	-0.067	-0.041	-0.036
Log Military Size of Trading Partner					(0.037)	(0.061)	(0.031)	(0.037)
Log GDP per Capita of Home Country x	0.148	0.177	0.194	0.085	0.175	0.231	0.182	0.125
Log GDP per Capita of Trading Partner	(0.054)	(0.045)	(0.067)	(0.055)	(0.048)	(0.059)	(0.043)	(0.049)
Log Population of Home Country x	-0.001	-0.309	-0.022	0.057	-0.071	-0.340	-0.192	-0.010
Log Population of Trading Partner	(0.102)	(0.123)	(0.145)	(0.101)	(0.083)	(0.128)	(0.097)	(0.081)
Both Countries in OECD				-10.676				2.129
				(2.739)				(1.783)
Only One Country in OECD				-5.828				0.584
				(1.380)				(0.880)
Observations	7062	4682	4114	7062	11168	7816	6294	11168

Long difference fixed effects regression in all columns, with a home country fixed effect and a trading partner country fixed effect and with robust standard errors clustered by country-pair in parentheses. Base sample are country pairs with data for 1988 and 2005 in columns 1-4 and for 1985 and 2003 for columns 5-8. Columns 2 and 5 exclude any country-pair which include Asia. Columns 3 and 6 exclude any country-pair including a country experiencing civil or international war. See text for data definitions and sources.