

## Democracy and Trade Liberalization

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The 1980s and 90s witnessed a worldwide surge towards democracy, as various dictatorships collapsed. This paper uses a sample of up to 133 countries for the period 1960-2004 to explore the relationship between regime change and trade policy. In particular, it seeks to investigate the following questions: does democratization induce a country to liberalize trade? Do countries that remained closed still move towards relatively freer trade? And what about trade liberalization, is it significant in bringing about democratization? Results suggest that whereas becoming more democratic does lead to greater openness, it depends on how each are measured. The effect of globalization on democracy, however, is mostly insignificant, suggesting that democracy is more likely to induce openness than vice-versa.

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## I. Introduction

The 1980s and 90s witnessed a worldwide surge towards democracy, as various dictatorships collapsed. Concurrently, there was a sudden “rush to free trade” (Rodrik, 1994) as several countries around the world began undertaking trade reform. The fact that several instances of democratization and trade liberalization took place during the same period of time suggests that the two types of reform may be related. This paper then explores the relationship between trade reform and political liberalization in an effort to determine the direction of causality.

Some authors have argued that democratization induces trade liberalization. Kubota and Milner (1999), for instance, argue that democratization makes it harder for governments to use trade barriers as a means of increasing political support, so trade reform should be a result of changes in the political regime. Although the authors find that democracies and the process of democratization do result in lower trade barriers, they do not explore possible feedback effects between the two reforms. Similarly, when looking at the relationship between economic and political freedom in a sample of developing countries, de Haan and Sturm (2003) find that greater political freedom furthers economic freedom.<sup>1</sup> Finally, O’Rourke and Taylor (2006) argue that expanding the voting franchise means a transfer of power from the elite to mostly workers. Where workers stand to gain from trade, then, democratization should cause trade liberalization, whereas where workers lose, there should be an increase in protection.

Rudra (2005) looks at the relationship between globalization and democracy in developing countries. She finds that globalization increases democracy if political losers are compensated so as to increase political support. Lopez-Cordoba and Meissner (2005), controlling for the endogeneity between democracy and trade by using the gravity model, find that since

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<sup>1</sup> Dethier et al. (1999) reach a similar conclusion using a sample of transition countries.

1895, globalization has improved democracy. Wu and Otto (1999) examine the relationship between political and economic freedom, as well as growth and development, and find no clear correlation between political and economic freedom. Dawson (2003) finds that political freedom Granger causes economic freedom, but economic freedom does not Granger cause political freedom.

Other authors, however, argue that autocratic countries are better able to enact trade reform, since they are better able to defeat opposing interest groups (Giavazzi and Tabellini (2005) for example). Also, uncertainty about the impact of economic reform on part of the population could lead voters to vote against reforms, even though they would benefit a majority of the electorate (see Fernandez and Rodrik, 1991). On the other hand, countries that are open or have liberalized trade may become more democratic due to the resulting increase in the economic well-being and power of the middle class (see Acemoglu and Robinson (2005), for instance). Empirically, Rigobon and Rodrik (2005) find that trade openness actually has a negative relationship to the level of democracy, possibly due to the exacerbation of distributional conflicts. Clearly this is a question that warrants further study.

Giavazzi and Tabellini (2005), when examining the effect of political and economic liberalizations on various indicators of performance, find that causality is likely to go from political to economic liberalization. The authors do not, however, explore whether improvements in democracy make a country more open or vice versa.

Not all of the countries that were closed when democratizing also liberalized trade, however. Furthermore, some of these liberalizing countries experienced a change in regime either before or after trade reform, whereas other non-democratic countries remained autocratic. So it is not obvious that democratization necessarily leads to freer trade or that trade

liberalization induces regime change. The question then is, what is the link between regime change and trade policy?

The purpose of this paper, then, is to further explore the relationship between regime change and trade policy. In particular, it seeks to investigate the following questions: does democratization induce a country to liberalize trade? Do countries that remained closed still move towards relatively freer trade? And what about trade liberalization, is it significant in bringing about democratization? These questions are important, since a better understanding of the relationship between the two types of reform is crucial in designing better development strategies.

One study that is close to this paper is Eichengreen and Leblang (2006). The authors examine the relationship between globalization and democracy using instrumental variables, and find that democracy induces globalization and vice-versa. This paper differs in several ways. Firstly, it is concerned solely with the effect of trade liberalization on democracy and that of democracy on trade liberalization. This means that other aspects of economic globalization are not taken into account. Secondly, it explores not only whether more democracy leads to greater openness or vice versa, but also whether becoming democratic increases openness (or conversely, whether liberalizing trade leads to greater political liberalization). Thirdly, this paper takes into account not only the time lag before one dimension of liberalization affects the other, but also the persistence of institutions. Finally, this paper uses several measures of trade openness, as well as two different measures of democracy.

The sample includes up to 133 countries for the period from 1960 up to 2004. Results suggest that whereas becoming more democratic does lead to greater openness, it depends on

how each are measured. Furthermore, the effect of globalization on democracy is mostly insignificant, suggesting that democracy is more likely to lead to openness than vice-versa.

The paper is divided as follows. Section 2 provides a description of the data, while Section 3 presents the empirical specification. Section 4 examines the results and subjects them to a variety of sensitivity tests. The last section concludes.

## **2. Data**

### **2.1. Trade**

The indicator for trade reform is constructed from the trade liberalization dates provided in Wacziarg and Welch (2003), who update the Sachs and Warner (1995) openness indicators and trade liberalization dates. The liberalization date is taken to be the date after which all of the Sachs and Warner openness criteria are continuously met. According to their criteria, a country is considered closed if one of the following conditions holds: 1. average tariffs exceed 40 percent; 2. non-tariff barriers cover more than 40 percent of trade; 3. it has a socialist economic system; 4. the black market premium on the exchange rate exceeds 20 percent; 5. there is a state monopoly on major exports. If none of those conditions apply, the country is considered open. Countries that liberalize are assigned a 1 starting on the date indicated by Wacziarg and Welch, whereas those that never meet the criteria for openness are assigned a 0.

Now, the Sachs and Warner index has been criticized by Rodriguez and Rodrik (2000) for being nearly completely determined by the last two conditions. They argued that using those two criteria alone generated a dummy variable that was different from the Sachs and Warner index in only 6 cases, whereas using the other three conditions generated a dummy that was different in 31 cases. Furthermore, they point out that the black market premium is more an

index of macroeconomic imbalances than openness, while the state monopoly of exports variable is virtually indistinguishable from a Sub-Saharan Africa dummy. This criticism was leveled against both the openness index itself, as well as the liberalization dates. However, Wacziarg and Welch argue that their updated liberalization dates do in fact reflect broader liberalization, since policy changes that reduced the black market premium or eliminated state monopolies were also in most cases accompanied by a decrease in tariffs and non-tariff barriers. Furthermore, whereas the openness dummy is based on the five criteria listed above, the dates of liberalization were cross-checked against a broad survey of country case studies. In creating the reform indicator for this paper, then, I use the liberalization dates rather than the openness dummy.

To examine whether democratization deepened trade liberalization and whether greater openness deepened democracy, I use five different indices that have been previously used in the literature. The choice of indices, which were selected from the indicators used by Rose (2004), was based on the country coverage and the number of years available. The measures selected are:

- Trade as a percentage of GDP: Defined as  $(\text{Exports} + \text{Imports}) / \text{GDP}$ , obtained from the World Bank's *World Development Indicators*. The data are available from 1960 to 2005.
- Import duties as percent of imports: Taken from the World Bank's *World Development Indicators*, and available from 1970 to 1999.
- Updated Sachs and Warner index—indicator equal to 1 if country is open, 0 if country is closed according to the Sachs and Warner criteria mentioned above. It is available from 1950 to 2001.
- Index of Economic Freedom: This index measures various aspects of economic liberalization, and it is available for every five years starting 1970, until 2000; and every year from 2000 to 2004. The components are size of government (expenditures, taxes and

enterprises); legal structure and security of property rights; access to sound money; freedom to trade internationally; and regulation of credit, labor, and business.

- KOF Index of Globalization: This index, developed by Dreher (2006), measures the economic, social, and political dimensions of globalization. The economic dimension of this index, which is the one used in this paper, measures actual flows of trade and foreign investment, as well as the degree to which capital and trade flows are restricted. The index is available from 1970 to 2004.
- Estimate from gravity equation: Frankel and Romer (1999), as well as López-Córdova and Meissner (2005), use an augmented gravity equation to obtain an instrument for trade openness. The gravity equation has been shown to be a powerful predictor of bilateral trade flows. The equation used in this paper has the form

$$\ln\left(\frac{EX_{ijt} + IM_{ijt}}{GDP_{it}}\right) = \beta_0 + \beta_1 \ln D_{ij} + \beta_2 \ln Pop_{it} + \beta_3 \ln Pop_{jt} + \beta_4 \ln Lang_{ij} + \beta_5 Landl_{ij} + \beta_6 Island_{ij} + \beta_7 \ln Area_{it} + \beta_8 \ln Area_{jt} + \varepsilon_{ijt} \quad (1)$$

where:

- $\frac{EX_{ijt} + IM_{ijt}}{GDP_{it}}$ : is the average value of real bilateral trade between country  $i$  and country  $j$  at time  $t$ ,
- $D_{ij}$ : distance between countries  $i$  and  $j$ ,
- $Pop_{it}$ : is the population in country  $i$ ,
- $Pop_{jt}$ : is the population in country  $j$ ,
- $Lang_{ij}$ : binary variable which is unity if  $i$  and  $j$  have a common language,
- $Landl_{ij}$ : number of landlocked countries in the country-pair (0, 1, or 2).
- $Island_{ij}$ : number of island nations in the pair (0, 1, or 2),

- $Area_{it}$ : landmass of country  $i$ ,
- $Area_{jt}$ : landmass of country  $j$ .

The data covers bilateral trade between 217 IMF trade partners between 1948 to 1999, and is taken from Glick and Rose (2002). The equation is estimated using least squares with time-specific fixed effects, and computing standard errors which are robust to clustering by country-pairs. From the estimated equation, I predict the log of bilateral trade for each country pair. Taking the exponential of this measure and summing it over all trade partners, I arrive at a measure of predicted trade openness.

## 2.2. Democracy:

Political liberalization is defined here as a change from a non-democratic to a democratic regime. This means that I am considering only democratizations rather than improvements in regime.<sup>2</sup> Transitions are identified using the POLITY2 indicator in the POLITY IV database, which is currently available from 1800 up to 2003.<sup>3</sup> The variable POLITY2 is a modified version of POLITY, which codes transition years so as to detect changes in regime. The POLITY variable, for its part, is a measure of the quality of democratic institutions, and varies from +10 (strongly democratic) to -10 (strongly autocratic). A regime change is then taken to be a change from a non-positive to a positive POLITY2 value. Countries that have changed the regime are assigned a 1 starting the year they become a democracy and 0 otherwise; all other countries that have not changed the regime are assigned a 0.

To measure whether becoming more democratic deepens trade liberalization or whether greater openness makes a country more democratic, I use two indicators. The first one is the

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<sup>2</sup> Most countries that democratized in the sample moved towards a full democracy. The average POLITY2 index for countries following democratization was 6.64.

<sup>3</sup> See <http://www.cidcm.umd.edu/inscr/polity/index.htm>.



POLITY2 index, which varies from +10 (strongly democratic) to -10 (strongly autocratic) and was described above. The second one is the Freedom House index. I use the Freedom House Freedom in the World country ratings. In particular, I use the average of the political and civil rights rating.<sup>4</sup> The political rights index ranks countries each year in seven categories, such as the existence of fair electoral laws, equal campaigning opportunities, and whether there is a significant opposition vote. The civil rights index ranks countries on various categories including freedom of expression, assembly, association, education, and religion. The index varies from 1 (free) to 7 (not free). I rescaled the index so that higher values indicate freer regimes. This is available from 1972 to 2005. Summary statistics for all measures used are shown in Table 1.

## **2.3. Control variables:**

### ***2.3.1. Trade as the Dependent Variable:***

Economic openness is associated with country size and income, as illustrated by the gravity equation. As a result, I control for the log of per capita real GDP, the log of population, and GDP growth, all of which are taken from the *World Development Indicators*.<sup>5</sup> The higher the log of per capita real GDP, the lower the level of protection. Larger countries are associated with more protection, whereas greater GDP growth leads to more openness. The data are available from 1960-2005.

### ***2.3.2. Democracy as the Dependent Variable:***

I control for the log of per capita real GDP, GDP growth, and the percent of the population in urban areas, all of which are taken from the *World Development Indicators*. The

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<sup>4</sup> See <http://www.freedomhouse.org/>.

<sup>5</sup> A possible concern is that the log of per capita GDP is not stationary. Dickey-Fuller tests for unit root, however, show that it is in fact stationary.

higher the per capita real GDP, the greater the GDP growth, and the greater percentage of urban population should all lead to more democracy. The data are available for 1960-2005.

### 3. Empirical Specification

To disentangle the effect of democracy on globalization and vice versa, several equations are estimated. In the first instance, I examine the effect of democratization or trade liberalization on the level of protection or democracy in a country, respectively. For that purpose, I estimate an equation of the form

$$Level_{it} = \beta_1 Reform_{it} + \beta_2 Control_{it} + v_i + \varepsilon_{it} \quad (2)$$

where  $Level_{it}$  is the level of democracy or openness in country  $i$  at time  $t$ ;  $Reform_{it}$  is an indicator for whether the country liberalized (if  $Level_{it}$  is the level of democracy) or democratized (if  $Level_{it}$  is the level of protection);  $Control_{it}$  is the relevant vector of control variables;  $v_i$  are country fixed effects; and  $\varepsilon_{it}$  is the error term. Here the coefficient of interest is  $\beta_1$ , which measures the effect of undertaking a reform on the level of democracy or protection in a country.

Secondly, I estimate the effect of more democracy or more protection on the level of protection or democracy, respectively. The estimated equation in this case is

$$Level_{it}^j = \beta_1 Level_{it}^k + \beta_2 Control_{it} + v_i + \varepsilon_{it} \quad (3)$$

where  $Level_{it}^j$  and  $Level_{it}^k$  are the level of democracy or openness in country  $i$  at time  $t$ , with  $j$  and  $k$  being democracy or protection,  $j \neq k$ ; and the other variables are as defined above. Again,  $\beta_1$  is the coefficient of interest, measuring the effect of more democracy or protection on the other variable.

Finally, the level of democracy and the level of protection are likely to be endogenous. Previous studies have found that democratization may increase or hinder trade liberalization

(Milner (1999), de Haan and Sturm (2003), Giavazzi and Tabellini (2005)), whereas others have found that liberalization actually reduces the level of democracy (Rigobon and Rodrik, 2005). To address the possible simultaneity, I estimate the model examining the impact of trade on democracy using two-stage least squares, with the estimated level of trade from the gravity equation as an instrument. In addition, and to also account for the persistence of institutions, I estimate the effect of democracy on trade and trade on democracy using a dynamic panel model, following the augmented version of Arellano and Bond (1991), as developed by Blundell and Bond (1998).

## **4. Results**

### **4.1. Effect of Democratization on Trade**

Table 2 presents the results of estimating the effect of undergoing democratization on trade openness. Robust standard errors are calculated by clustering on country. In column 1, openness is measured as the share of trade in GDP, while in column 2, it is calculated as import duties as a percentage of imports. In column 3, the dependent variable is the updated Sachs and Warner index, while in column 4, the economic freedom index is used. Finally, in column 5, the dependent variable is the globalization index. When trade openness is measured as tariffs or the updated Sachs and Warner index, it is found that democratization has a positive and highly significant effect on openness. In particular, political liberalization undertaken five years earlier reduces import duties, while democratization both five years earlier and in the same year is associated with openness. The effect of democratization, however, is insignificant when openness is measured using trade as a percentage of GDP, the economic freedom index, or the globalization index.

As for the control variables, the log of GDP per capita has the predicted sign and is highly significant except when openness is measured with the Sachs and Warner index or when it is measured using the economic freedom index. Accordingly, a higher income per capita increases the amount of trade as a percentage of GDP and decreases import duties. Larger countries are associated with greater economic freedom, but lower globalization, while GDP growth is positively correlated with openness, except when it is measured as trade as a percentage of GDP.

#### **4.2. Effect of Trade Liberalization on Level of Democracy**

The results shown on Table 3 are also sensitive to the choice of democracy measure. Columns 1 and 3 present OLS results, while column 2 treats the POLITY2 index as a ranking to estimate an ordered probit. When the POLITY2 index is used to measure the level of democracy, the effect of liberalizing trade is positive and highly significant; in other words, undergoing trade liberalization makes a country more democratic. On the other hand, when the Gastill index is used as the dependent variable, the effect of globalization is insignificant. As for the control variables, the log of GDP per capita reduces democracy in column 1, but increases it, as expected, in column 2. GDP growth is negatively correlated with democracy in column 2, but increases it when the dependent variable is the Gastill index. Finally, having a larger share of the population living in urban areas increases democracy, except in column 2 where it seems to reduce it.

### **4.3. Does More Democracy Lead to More Trade?**

Tables 4 and 5 examine the effect of an increase in the level of democracy on trade openness. Table 4 uses the POLITY2 index as the indicator for democracy, while Table 5 uses the Gastill index as the dependent variable. In column 1, openness is measured as the share of trade in GDP, while in column 2, it is import duties as a percentage of imports. In column 3, the dependent variable is the economic freedom index, while in column 4, it is the globalization index. Finally, column 5 presents the results of estimating a gravity model, augmented to include the democracy indicators. Once again, the results are mixed. When openness is measured as import duties or the globalization index in Table 4, it is found that a higher level of democracy increases openness. However, in all other cases, the coefficients on the democracy indicator are insignificant. In Table 5, democracy only seems to have an effect on import duties. The log of GDP per capita has the expected relationship to openness in columns 1 and 2 of Table 4, and in column 2 of Table 5, though it is negatively correlated with economic freedom in both cases. Larger countries are associated with greater economic freedom in both Tables 4 and 5, but with reduced globalization in Table 4. As for GDP growth, the results suggest that higher GDP growth is associated in all cases with higher import duties, greater economic freedom, and greater globalization, as well as greater share of trade in Table 4.

### **4.4. Does More Trade Lead to More Democracy?**

Tables 6 and 7 present the results examining whether increases in openness makes a country more democratic. In Table 6, democracy is measured using the POLITY2 index, while in Table 7, the Gastill index is used instead. Furthermore, in Table 6, columns 1, 3, 5, and 7 estimate OLS regressions, while columns 2, 4, 6, and 8 present the ordered probit results.

In Table 6, it is found that the effect of trade is only significant and of the expected sign when is measured using the globalization index. The only other case where trade is significantly affecting democracy is in column 2, where it is found that more trade reduces the Polity2 index. In Table 7, however, it is found that higher tariffs and greater economic freedom increase democracy as measured by the Gastill index. The log of GDP per capita is negatively correlated with democracy in all OLS regressions in Table 6, while positively related in the ordered probit models. It is not, however, significant in Table 7. Furthermore, higher GDP growth seems to reduce democracy in all the ordered probit regressions of Table 6, while increasing it when it is measured with the Gastill index in column 1 of Table 7. Finally, a higher share of urban population is positively correlated with democracy in all OLS specifications of Table 6, as well as in columns 1, 2, and 3 of Table 7. In the ordered probit models, however, it seems to reduce democracy. This suggests that the results are highly sensitive to the choice of specification

#### **4.5. IV Results**

Because of problems of endogeneity, in that there is a two-way feedback between democracy and trade, Table 8 uses the predicted values from a gravity model as an instrument for the share of trade. In columns 1 and 3, the equations are modeled using a two-stage least squares, while in columns 2 and 4, they are estimated using the augmented version of Arellano and Bond (1991), as developed by Blundell and Bond (1998). Furthermore, in columns 1 and 2, democracy is measured using the Polity2 index, while in columns 3 and 4, it is measured with the Gastill index.

The results indicate that trade has no effect on democracy, as it is insignificant in all specifications. A higher share of urban population does seem to increase democracy, but only in

the 2SLS specifications. In addition, higher GDP per capita and higher GDP growth are positively correlated with greater democracy, as expected, but only in column 4.

#### **4.6. Dynamic Panel Results**

To further examine the results, Tables 9-12 present the dynamic panel versions of Tables 4-7. Tables 9 and 10 present the effect of democracy on trade, while Tables 11 and 12 show the impact of trade on democracy. In Tables 9 and 11, democracy is measured with the Polity2 index, while in Tables 10 and 12, it is measured with the Gastill index.

Examining the effects of democracy on trade, it is seen that more democracy is associated with greater economic freedom both in Table 9 and 10. Note, however, that the level of democracy five years earlier is associated instead with lower economic freedom. Furthermore, it is seen that being more democratic five years earlier improves the economic index in Table 10, while also increasing tariffs. None of the other coefficients, however, are significant.

As for the control variables, in Table 9, and as before, the log of GDP per capita has the expected relationship to trade and tariffs, but is negatively correlated with economic freedom. Higher GDP growth improves economic freedom, but also seem to increase tariffs. The same result regarding GDP growth is found in Table 10. In addition, larger countries are found to have greater economic freedom, while higher income is associated with both lower economic freedom and lower globalization.

As for the effect of trade on democracy, Tables 11 and 12 show it to be mostly insignificant. In column 1, trade is measured as a percentage of GDP; in column 2, tariffs are used; in column 3, it is the economic freedom index; and in column 4, the variable of interest is the globalization index. In Table 11, higher economic freedom increases democracy, but lowers

it five years later. In Table 12, higher import duties five years earlier reduce democracy, as expected. None of the other coefficients are significant. Higher GDP per capita is associated with higher democracy when trade is measured as a percentage of GDP in both Tables 11 and 12. In Table 12, it is also found to increase democracy when trade is measured using the economic freedom index in column 3. Higher GDP growth increases democracy in column 2 of Tables 11 and 12, as well column 1 of Table 12. Finally, the share of urban population seems only to increase democracy when trade is measured with the globalization index in column 4 of Table 11. Overall, then, these results show that the effect of trade on democracy and vice versa is highly sensitive to how openness and democracy are measured.

## **5. Conclusion**

The 1980s and 90s witnessed a worldwide surge towards democracy, as various dictatorships collapsed. Concurrently, there was a sudden “rush to free trade” (Rodrik, 1994) as several countries around the world began undertaking trade reform. The fact that several instances of democratization and trade liberalization took place during the same period of time suggests that the two types of reform are related.

Not all of the countries that were closed when democratizing also liberalized trade, however. Furthermore, some of these liberalizing countries experienced a change in regime either before or after trade reform, whereas other non-democratic countries remained autocratic. So it is not obvious that democratization necessarily leads to freer trade or that trade liberalization induces regime change. The question then is, what is the link between regime change and trade policy?



This paper, then, explored the relationship between regime change and trade policy. In particular, it sought to investigate the following questions: does democratization induce a country to liberalize trade? Do countries that remained closed still move towards relatively freer trade? And what about trade liberalization, is it significant in bringing about democratization?

Using a sample of up to 133 countries from 1960 up to 2004, results suggest that democracy improves trade, though it depends on how each are measured. The effect of trade on democracy, however, is mostly insignificant. This suggests that democracy is more likely to lead to openness than vice-versa.

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**Table 1: Summary Statistics**

Variable	Obs	Mean	Std Dev	Min	Max
Polity2	5201	0.740	7.501	-10	10
Gastill	4309	3.207	2.012	0	6
Trade % GDP	5116	67.062	41.781	1.531	383.061
Tariffs	2032	10.735	8.960	0	73.706
Sachs & Warner	6486	0.105	0.307	0	1
Economic Freedom	1876	3.999	1.623	1	9.6
Globalization	2678	50.292	23.154	6.470	96.890
Log Population	4413	9.000	1.568	5.170	14.029
Log GDP per capita	5310	0.466	1.568	-2.873	3.912
GDP growth	5292	3.626	5.937	-51.031	106.280
Percent Urban	6435	46.454	23.578	2.210	100

**Table 2: Difference-in-Difference Effect of Democratization on Trade Openness**

	(1)	(2)	(3)	(4)	(5)
	Trade as % GDP	Tariffs as % Imports	Updated Sachs & Warner	Economic Freedom	Globalization
Democratization	1.867 (2.348)	0.876 (0.951)	0.094** (0.041)	0.395 (0.266)	1.535 (0.939)
Democratization t-5	0.379 (1.546)	-1.882** (0.721)	0.156*** (0.035)	0.175 (0.246)	1.214 (0.742)
Log Population	-4.403 (10.222)	1.362 (3.739)	0.212 (0.146)	5.323*** (1.036)	-9.151** (4.169)
Log GDP per capita	13.803** (5.930)	-2.650* (1.515)	-0.170*** (0.055)	-1.532** (0.636)	1.057 (2.006)
GDP growth	0.116 (0.106)	0.066* (0.034)	0.003*** (0.001)	0.040*** (0.012)	0.086** (0.035)
Observations	3475	1912	3572	749	2040
Number of countries	132	117	133	125	82
Adjusted R-Squared	0.2473	0.0918	0.3573	0.5296	0.6469

Notes: Robust standard errors, clustered at the country-level, in parentheses. \* significant at 10%; \*\* significant at 5%; \*\*\* significant at 1%. All regressions include year and country fixed effects.

**Table 3: Difference-in-Difference Effect of Trade Liberalization on Democracy**

	(1)	(2)	(3)
	Polity2	Polity2	Gastill
Trade Liberalization	1.662*** (0.592)	0.243** (0.112)	0.161 (0.133)
Trade Liberalization t-5	0.507 (0.626)	0.029 (0.086)	0.208 (0.162)
Log GDP per capita	-1.722** (0.677)	0.773*** (0.106)	-0.069 (0.213)
GDP growth	-0.004 (0.012)	-0.013*** (0.004)	0.007** (0.003)
Percent Urban	0.131** (0.051)	-0.013** (0.007)	0.032*** (0.012)
Observations	4236	4546	3975
Number of countries	132		135
Adjusted R-Squared	0.2879		0.1560
Pseudo R-squared		0.1198	

Notes: Robust standard errors, clustered at the country-level, in parentheses. \* significant at 10%; \*\* significant at 5%; \*\*\* significant at 1%. Columns 1 and 3 estimate OLS regressions, with year and country fixed effects, while column 2 presents the results from an ordered probit estimation, which also includes year and country fixed effects.

**Table 4: Effect of Democracy on Trade, POLITY2 Index**

	(1)	(2)	(3)	(4)	(5)
	Trade as % GDP	Tariffs as % imports	Economic Freedom	Globalization	Gravity
POLITY2	0.127 (0.147)	0.019 (0.088)	0.028 (0.019)	0.038 (0.066)	0.002 (0.010)
Polity2 t-5	-0.176 (0.169)	-0.144** (0.059)	0.003 (0.019)	0.102* (0.053)	0.009 (0.010)
Log Population	-3.401 (10.135)	0.809 (3.697)	5.498*** (1.076)	-8.144* (4.250)	
Log GDP per capita	11.154** (5.628)	-2.751* (1.505)	-1.190* (0.616)	0.748 (2.088)	
GDP growth	0.219* (0.115)	0.066* (0.035)	0.041*** (0.012)	0.103** (0.040)	
Log of Distance					-1.127*** (0.027)
Log GDP country 2					0.972*** (0.013)
Log population country 1					0.052*** (0.018)
Log population country 2					-0.039** (0.019)
Log area country 1					-0.169*** (0.016)
Log area country 2					-0.048*** (0.013)
Common Language					0.685*** (0.048)
Land Border					0.839*** (0.131)
Landlocked					-0.126** (0.059)
Island State					0.249*** (0.061)
Observations	3215	1851	724	1964	143347
Number of countries	127	114	121	80	
Adjusted R-Squared	0.2447	0.0876	0.5142	0.6400	0.5387
R-squared					0.5385

Notes: Robust standard errors, clustered at the country-level, in parentheses. \* significant at 10%; \*\* significant at 5%; \*\*\* significant at 1%. All regressions include year and country fixed effects.

**Table 5: Effect of Democracy on Trade, Gastill Index**

	(1)	(2)	(3)	(4)	(5)
	Trade as % GDP	Tariffs as % imports	Economic Freedom	Globalization	Gravity
Gastill	0.199 (0.775)	0.762** (0.346)	-0.037 (0.092)	-0.435 (0.466)	0.029 (0.045)
Gastill t-5	-0.681 (0.729)	-0.475* (0.262)	-0.057 (0.077)	0.209 (0.250)	0.029 (0.045)
Log Population	-3.740 (14.940)	1.806 (4.292)	7.842*** (1.619)	-5.060 (6.307)	
Log GDP per capita	9.374 (6.720)	-2.913** (1.198)	-1.735** (0.803)	-1.240 (2.989)	
GDP growth	0.218 (0.138)	0.075* (0.044)	0.037*** (0.013)	0.107** (0.046)	
Log of Distance					-1.180*** (0.027)
Log GDP country 2					0.999*** (0.014)
Log population country 1					0.120*** (0.017)
Log population country 2					-0.041** (0.019)
Log area country 1					-0.158*** (0.015)
Log area country 2					-0.060*** (0.014)
Common Language					0.701*** (0.049)
Land Border					0.864*** (0.135)
Landlocked					-0.104* (0.060)
Island State					0.034 (0.056)
Observations	2300	1697	674	1548	130241
Number of countries	130	116	123	81	
Adjusted R-Squared	0.1148	0.0915	0.5389	0.6153	0.5342
R-squared					0.5389

Notes: Robust standard errors, clustered at the country-level, in parentheses. \* significant at 10%; \*\* significant at 5%; \*\*\* significant at 1%. All regressions include year and country fixed effects.

**Table 6: Effect of Trade on Democracy—Polity2 Index**

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	OLS	Ordered Probit	OLS	Ordered Probit	OLS	Ordered Probit	OLS	Ordered Probit
Trade % GDP	0.010 (0.011)	0.001 (0.002)						
Trade % GDP t-5	-0.001 (0.009)	-0.005*** (0.002)	-0.021 (0.033)					
Tariffs			0.004 (0.029)	0.001 (0.013)				
Tariffs t-5				-0.001 (0.010)				
Economic Freedom					0.178 (0.130)	-0.030 (0.043)		
Economic Freedom t-5					0.110 (0.108)	-0.001 (0.027)		
Globalization							0.090* (0.046)	0.028*** (0.009)
Globalization t-5							-0.020 (0.042)	-0.016 (0.011)
Log GDP per capita	-2.615*** (0.895)	0.846*** (0.102)	-3.310 (2.084)	1.098*** (0.161)	-3.370** (1.317)	0.884*** (0.102)	-4.916*** (1.621)	0.879*** (0.176)
GDP growth	0.011 (0.016)	-0.016*** (0.005)	0.021 (0.040)	-0.032*** (0.011)	0.042 (0.030)	-0.041*** (0.010)	0.021 (0.024)	-0.029** (0.011)
Percent Urban	0.156*** (0.056)	-0.016** (0.007)	0.184** (0.088)	-0.029*** (0.009)	0.222** (0.085)	-0.018*** (0.007)	0.212** (0.083)	-0.025*** (0.007)
Observations	3892	3892	1341	1341	1370	1370	2078	2078
Number of countries	130		98		131		80	
Adjusted R-Squared	0.2771		0.1830		0.3587		0.3304	
Pseudo R-squared		0.1329		0.1702		0.1432		0.1568

Notes: Robust standard errors, clustered at the country-level, in parentheses. \* significant at 10%; \*\* significant at 5%; \*\*\* significant at 1%. All regressions include year and country fixed effects.



**Table 7: Effect of Trade on Democracy—Gastill Index**

	(1)	(2)	(3)	(4)
	OLS	Ordered Probit	OLS	Ordered Probit
Trade % GDP	-0.000 (0.003)			
Trade % GDP t-5	0.000 (0.003)			
Tariffs		0.018** (0.009)		
Tariffs t-5		-0.008 (0.006)		
Economic Freedom			0.074** (0.036)	
Economic Freedom t-5			0.024 (0.028)	
Globalization				0.008 (0.009)
Globalization t-5				-0.011 (0.011)
Log GDP per capita	-0.376 (0.245)	-0.152 (0.510)	0.046 (0.387)	-0.614 (0.381)
GDP growth	0.009** (0.004)	-0.002 (0.006)	0.003 (0.006)	0.006 (0.006)
Percent Urban	0.030** (0.014)	0.040* (0.022)	0.014*** (0.005)	0.029 (0.019)
Observations	3652	1378	1209	2209
Number of countries	133	99	133	81
Adjusted R-Squared	0.1460	0.0692	0.0709	0.1558
Pseudo R-squared	0.1370	0.0498	0.0600	0.1426

Notes: Robust standard errors, clustered at the country-level, in parentheses. \* significant at 10%; \*\* significant at 5%; \*\*\* significant at 1%. All regressions include year and country fixed effects.

**Table 8: Instrumenting Trade with Predicted Value from Gravity Model**

	(1)	(2)	(3)	(4)
	Polity2		Gastill	
	2SLS	Dynamic	2SLS	Dynamic
Lag Polity2		0.956*** (0.017)		
Lag Gastill				0.937*** (0.031)
Trade % GDP	0.055 (0.144)	-0.003 (0.008)	0.020 (0.030)	-0.002 (0.003)
Trade % GDP t-5		0.004 (0.005)		0.002 (0.002)
Log GDP per capita	-2.975 (2.019)	0.146 (0.123)	-0.415 (0.399)	0.108** (0.044)
GDP growth	-0.007 (0.026)	0.005 (0.008)	0.004 (0.007)	0.005* (0.003)
Percent Urban	0.163*** (0.056)	-0.014 (0.017)	0.035** (0.015)	-0.008 (0.005)
Observations	4103	3886	3817	3562
Number of countries	130	130	133	133
Adjusted R-Squared	0.2309		0.0134	
J Value	0.1313	0.1653	0.4877	
AR1 P-value		0.0000		0.3786
AR2 P-Value		0.3049		0.0000
Identification/IV relevance test	0.0109		0.0607	0.8565

Notes: Robust standard errors are in parentheses. \* significant at 10%; \*\* significant at 5%; \*\*\* significant at 1%. All regressions include year fixed effects.

**Table 9: Dynamic Panel Results, Democracy on Trade, Polity2 Index**

	(1)	(2)	(3)	(4)
	Trade as % GDP	Tariffs as % imports	Economic Freedom	Globalization
Lag Trade	0.920*** (0.039)	0.620*** (0.084)	0.595*** (0.036)	0.998*** (0.034)
Polity2	-0.362 (0.560)	-0.299 (0.366)	0.182*** (0.042)	0.058 (0.092)
Polity2 t-5	0.139 (0.365)	0.199 (0.247)	-0.095*** (0.034)	0.029 (0.054)
Log Population	-3.495 (2.594)	2.274 (3.754)	0.204 (0.129)	1.313 (0.927)
Log GDP per capita	1.970** (0.957)	-1.668** (0.742)	-0.335*** (0.058)	-0.321 (0.503)
GDP growth	-0.010 (0.081)	0.092** (0.044)	0.040*** (0.014)	-0.012 (0.016)
Observations	3200	1729	724	1903
Number of countries	127	112	121	80
AR1 P-value	0.0000	0.0009	0.0000	0.0002
AR2 P-Value	0.3449	0.7651	0.1251	0.2529
Wald p-value	0.0000	0.0000	0.0000	0.0000
J Value	0.3965	0.3157	0.2175	0.9968

Notes: Robust standard errors are in parentheses. \* significant at 10%; \*\* significant at 5%; \*\*\* significant at 1%. All regressions include year fixed effects. In all cases, instruments include the first 10 lags of the lagged dependent and the lagged democracy variable, and the first 5 lags of the control variables.

**Table 10: Dynamic Panel Results, Democracy on Trade, Gastill Index**

	(1)	(2)	(3)	(4)
	Trade as % GDP	Tariffs as % imports	Economic Freedom	Globalization
Lag Trade	0.897*** (0.048)	0.662*** (0.074)	0.566*** (0.034)	1.037*** (0.025)
Gastill	0.604 (1.703)	-1.987 (1.290)	0.513*** (0.163)	0.323 (0.295)
Gastill t-5	-0.086 (1.130)	1.538* (0.835)	-0.251** (0.128)	0.326* (0.189)
Log Population	-0.777 (2.119)	0.538 (1.748)	0.338** (0.139)	0.895 (0.637)
Log GDP per capita	0.444 (0.921)	-1.037 (0.937)	-0.336*** (0.093)	-1.240*** (0.458)
GDP growth	-0.016 (0.104)	0.060** (0.030)	0.032** (0.015)	-0.023 (0.018)
Observations	2293	1634	674	1548
Number of countries	130	113	123	81
AR1 P-value	0.0000	0.0019	0.0000	0.0003
AR2 P-Value	0.9120	0.8726	0.6016	0.2832
Wald p-value	0.0000	0.0000	0.0000	0.0000
J Value	0.3069	0.9347	0.3045	0.2332

Notes: Robust standard errors are in parentheses. \* significant at 10%; \*\* significant at 5%; \*\*\* significant at 1%. All regressions include year fixed effects. In all cases, instruments include the first 10 lags of the lagged dependent and the lagged democracy variable, and the first 5 lags of the control variables.

**Table 11: Dynamic Panel Results, Trade on Democracy, Polity2 Index**

	(1)	(2)	(3)	(4)
Lag Polity2	0.963*** (0.018)	0.969*** (0.079)	0.611*** (0.069)	0.883*** (0.031)
Trade % GDP	-0.009 (0.009)			
Trade % GDP t-5	0.009 (0.006)			
Tariffs		-0.012 (0.079)		
Tariffs t-5		0.019 (0.028)		
Economic Freedom			0.685*** (0.196)	
Economic Freedom t-5			-0.344** (0.163)	
Globalization				0.059 (0.047)
Globalization t-5				-0.078 (0.073)
Log GDP per capita	0.259* (0.150)	-0.332 (0.393)	-0.017 (0.719)	-0.478 (0.601)
GDP growth	0.005 (0.009)	0.037** (0.018)	-0.046 (0.031)	0.003 (0.018)
Percent Urban	-0.034 (0.021)	0.011 (0.055)	0.091 (0.070)	0.073* (0.039)
Observations	3886	1341	1370	2078
Number of countries	130	98	131	80
AR1 P-value	0.0000	0.0001	0.0000	0.0000
AR2 P-Value	0.0744	0.3162	0.7951	0.1868
Wald p-value	0.0000	0.0000	0.0000	0.0000
J Value	0.0577	0.8429	0.1222	0.2713

Notes: Robust standard errors are in parentheses. \* significant at 10%; \*\* significant at 5%; \*\*\* significant at 1%. All regressions include year fixed effects. In all cases, instruments include the first 10 lags of the lagged dependent and the lagged trade variable, and the first 5 lags of the control variables.

**Table 12: Dynamic Panel Results, Trade on Democracy, Gastill Index**

	(1)	(2)	(3)	(4)
Lag Gastill	0.933*** (0.033)	0.898*** (0.048)	0.841*** (0.032)	0.932*** (0.031)
Trade % GDP	-0.001 (0.003)			
Trade % GDP t-5	0.001 (0.002)			
Tariffs		0.013 (0.017)		
Tariffs t-5		-0.010** (0.005)		
Economic Freedom			0.032 (0.045)	
Economic Freedom t-5			-0.032 (0.035)	
Globalization				0.006 (0.006)
Globalization t-5				-0.005 (0.009)
Log GDP per capita	0.131** (0.052)	-0.033 (0.083)	0.149*** (0.055)	-0.057 (0.096)
GDP growth	0.005* (0.003)	0.008** (0.004)	0.001 (0.007)	-0.000 (0.004)
Percent Urban	-0.012 (0.007)	0.008 (0.010)	-0.004 (0.003)	0.004 (0.006)
Observations	3562	1378	1580	2209
Number of countries	133	99	133	81
AR1 P-value	0.0000	0.0000	0.0000	0.0000
AR2 P-Value	0.8460	0.2041	0.9571	0.3140
Wald p-value	0.0000	0.0000	0.0000	0.0000
J Value	0.6301	0.7385	0.9437	0.1162

Notes: Robust standard errors are in parentheses. \* significant at 10%; \*\* significant at 5%; \*\*\* significant at 1%. All regressions include year fixed effects. In all cases, instruments include the first 10 lags of the lagged dependent and the lagged trade variable, and the first 5 lags of the control variables.