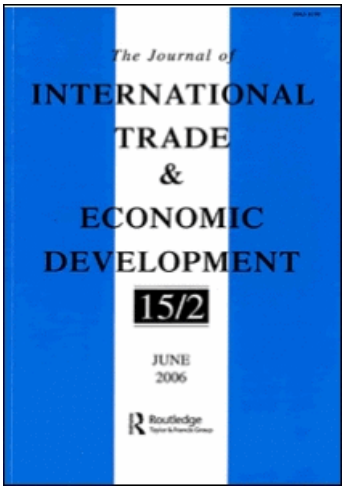


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# A re-examination of the relation between democracy and international trade

Christopher Balding[a]
[a] HSBC Business School, Peking University Graduate School, University Town, Nanshan, Shenzhen, China

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# A re-examination of the relation between democracy and international trade

Christopher Balding*

*HSBC Business School, Peking University Graduate School, University Town, Nanshan, Shenzhen 518055, China*

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Scholars and policy makers believe that democracy will bring prosperity through integration into the global economy via increased international trade. Existing research is plagued by methodological problems that obscure the empirics and avoid the theoretical problem of why democracies may or may not trade more. In this paper, I seek to correct these shortcomings. I test two theories as to why democracies might trade more. First, political freedom may be correlated with economic freedom, thus prompting higher levels of economic activity, thereby driving states to trade more. Second, democracy implies higher quality governance either through institutions or policy making procedures. To test the impact of democracy on trade and the potential transmission mechanisms, I utilize a bilateral gravity trade model covering approximately 150 countries from 1950 to 1999, with fixed effects for time, importers, and exporters. I find the theory that democracy, and many of its components, promotes international trade unconvincing. The coefficients are the theoretically correct sign; however, many are statistically or economically insignificant and fragile to changes in modeling or data. Economic freedom does not have the expected impact on international trade levels, but quality of governance variables have broad economic and statistical significance.

**Keywords:** bilateral trade; developing countries; governance; gravity model; liberalization; trade policy

## Introduction

The appeal of democracy is enhanced if democracies also provide greater income because of greater international trade (Oneal and Russett 1997; Oneal et al. 1996). Empirical studies that have investigated the relation between democracy and trade have studied dyadic pairs and major trading countries utilizing small samples, which introduces a number of biases (Morrow, Siverson, and Tabares 1998). Although bilateral trade of two

*Email: cbalding@szpku.edu.cn

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democratic countries may be greater than that of other pairs of countries, this does not indicate that democratic countries necessarily trade more than non-democratic countries: a conclusion about the effect of democracy is made to depend on a country's trading partners rather than isolating the effect of democracy itself (Dai 2006). By relying on the relationship between two countries rather than the effect of democracy on a country, the use of dyadic pairs thus asks a different question than whether democracy increases trade.

In this paper, I re-examine the relation between democracy and international trade. I investigate two propositions about why democracies might trade more. First, the political freedom of democracies may be associated with economic freedom, which promotes international trade. Second, democracy provides better institutions or policy making procedures: in particular, property rights protection is superior and corruption is in general lower. My approach differs from previous studies in focusing on importing or exporting-country democratic variables independent of the trading partner and on the transmission mechanism that might increase trade. I utilize a bilateral gravity trade model covering approximately 150 countries from 1950 to 1999, with fixed effects for time, importers, and exporters. The Goteborg University Quality of Governance Time Series Database allows me to study how democracy, economic freedom, and institutions influence international trade. By 'searching for significance in the residual' of the gravity model, I test whether democratic states trade more than autocracies.

The conclusions do not support necessary linkage between democracy and international trade. The coefficients are the theoretically correct sign; however, many are statistically or economically insignificant and fragile to changes in modeling or data. Economic freedom does not have the expected effect on international trade levels, although the quality-of-governance variables have broad economic and statistical significance. As the example of China in itself indicates, democracy does not appear to be the necessary promoter of international trade that others have claimed. Indeed, mercantilist countries, which are in general not democratic, usually engage in substantial although unbalanced international trade.[1] Theory offers no reason why democracy in itself should increase trade if property rights are protected and contractual obligations are honored.

## The theory of international trade and democracy

The empirical research linking international trade and democracy (Rogowski 1987; Mansfield and Busch 1995; Bliss and Russett 1998; Mansfield, Milner, and Rosendorff 2000), by focusing on dyadic trade, has not considered how democracy affects trade in one country. The use of dyadic trade data links the consequences of democracy in both countries and proposes military alliances, language, and trade agreements as reasons for

greater trade. There are methodological reasons why looking at dyadic trade obscures the results.

First, focusing on dyads introduces a rich country bias: international trade typically involves a rich democratized country in the pair, thereby biasing results upward because of bilateral trade agreements, security agreements, and culture (Long 2003, Dixon and Moon 2003, and Gowa and Mansfield 1993). Also, geographic proximity can affect conflict and thereby trade (Robst, Polachek, and Chang 2007). Because income affects trade (Linder 1961), low-income democratic pairs reduce the democracy and trade relation (although low-income countries are generally not democratic, see Borooah and Paldam 2007). The data used here cover a larger number of years and countries than have been previously studied, reducing the possibility of sample selection bias when focusing on countries with observed levels of trade or rich countries in close proximity. The problem of sample selection bias in the previous literature linking international trade and democracy cannot be discarded as most studies focused on high income or culturally similar states. My study uses the largest samples of states, time, and income levels in evaluating the relationship between democracy and international trade. Second, previous studies omitted important variables or methods. Third, whether pairs of democracies trade more, while empirically interesting, is a subtly different question from whether democratic states trade more: a better test is whether democracies trade more than non-democracies, corrected for the different income consequences of democratic and non-democratic institutions.

Whether governments permit free trade or choose protectionist policies is also related to institutions, as indicated by theories of the political economy of protection (Hillman 1989; Grossman and Helpman 1994; Goldberg and Maggi 1997; O'Reilly 2005; Kono 2006; Yu 2006). In addition, governments link aid policies and exports of capital goods to recipient states (Younas 2008). Whether a democracy is presidential or parliamentary also seems to affect international trade levels (Ang et al. 2005; Roelfsema, 2004; Nielson 2003). Research indicates that democracy has little to no impact on economic growth and may even restrain it past certain levels of income, primarily in higher income countries (Rodrik and Wacziarg 2005; Baum and Lake 2003). Similarly, others have argued that increased levels of trade openness and foreign investment negatively impact democracy (Li and Reuveny 2003). The conflicting findings about the impact of democracy on international trade are influenced by the divergent impact of political actors across regimes types. Democracy allows groups that may seek to restrict imports to gather and support politicians sympathetic to their viewpoint while autocracy allows more outright corruption in political decisions.

Two arguments are made by proponents of the argument that democracies trade more. First, political freedom causes economic freedom.

Empirically, this requires that democratic variables are proxies for economic freedom. Figure 1 shows the relationship between the Heritage Foundation Economic Freedom Index and the Freedom House Political Rights Index.[2]

Second, democracy is related to improved governance, policy making, regulation, and the rule of law. As politicians become increasingly accountable to the electorate, the democratic process provides the openness and transparency that allows businessmen to increase economic activity with the knowledge that their activities will be subject to predictable laws and regulatory frameworks. One is hard put to find examples of well-governed non-corrupt non-democratic states: the outstanding example is Singapore. Empirically, using an instrumental variable in the place of democracy, it should be possible to detect the effects of institutional, rule of law, or regulatory quality measures on international trade, if economic activity depends on these variables. There is reported evidence that democracy, through well functioning institutions, promotes efficient allocation of resources and higher satisfaction with democracy (Wagner, Schneider and Halla 2009). Looking at a broad measure of the quality of governance, first glances are not promising. Figure 2 implies only a weak relationship between the quality of governance and democracy when using the International Country Risk Guide Quality of Governance and the Polity IV dataset.



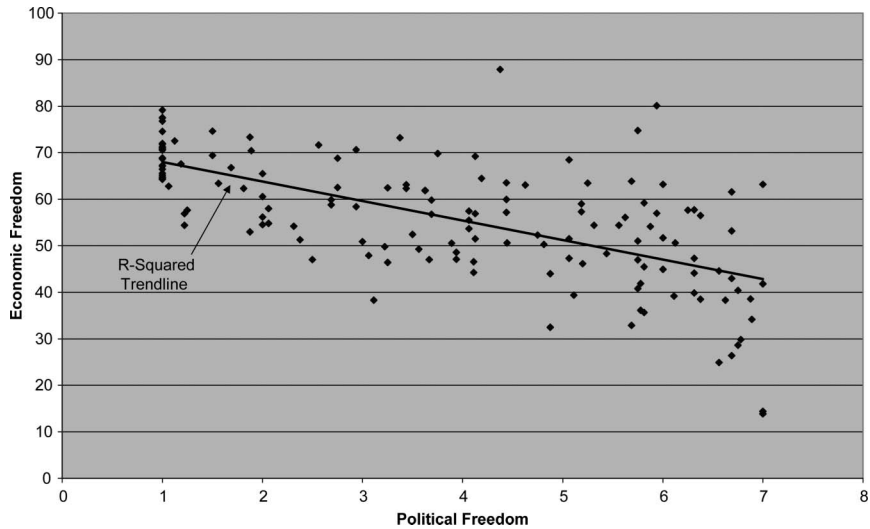


Figure 1. Political–economic freedom.

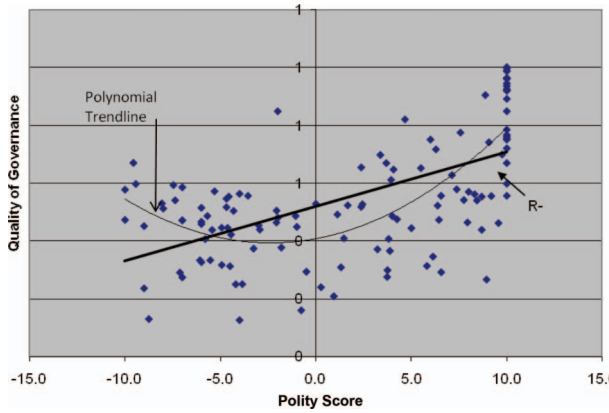


Figure 2. Democracy and quality of governance.



## Data and methodology

The data are from Andrew Rose (2003) downloaded from his website.[3] Rose uses a bilateral gravity model controlling for the 'natural' determinants of trade.[4] The STATA dataset covers 177 countries with controls for natural variables such as distance, GDP, and land area. It also includes a comprehensive set of dummy variables that control for such variables as common language between the trading pair, colonial history, and geographic factors such as land-locked countries. International Monetary Fund Direction of Trade data were extracted from the online database Webstract for the years 1950 to 1999.[5] The natural log of real imports for the importing country was arrived at by averaging the exports of country two with the imports of country one, deflating by the 1982–1984 Urban Consumer CPI, and taking the natural log. As noted, time series democratic variables were extracted from the Quality of Government and Polity IV datasets. The Quality of Government Institute (QOG) at the University of Goteborg compiled a wide variety of democracy and related measures of the overall quality of government from different datasets. The QOG variables are used to compare against the Polity IV where possible and study potential transmission mechanisms and test whether references to democracy in fact proxy for other measures of freedom or institutional considerations.

A number of methodological issues should be mentioned. First, we use imports rather than average real trade. This allows us to isolate the impact on exporters or importers.

Second, country one import data were averaged with country two export data and vice versa. This produced two numbers: average country one

imports and exports or averaged country two exports and imports. The country two imports, or country one exports, were then inserted as the dependent variable and all necessary variables inverted. This change has two major effects. First, it significantly enlarges the dataset. Rose has 234,597 observations of overall trade; this change creates a data set when merging with Polity IV democracy variables consisting of 326,483 observations.

Second, this permits an examination of the impact of democracy on imports and exports. Many trading relationships, especially ones involving low-income countries, have goods moving in one direction but not both: that is, there is unbalanced trade. There are different incentive structures when trade takes place with a significantly larger or smaller partner (Polachek, Robst, and Chang 1999). Where real imports equal zero, the natural log of one was used as the import value: in other words: many observations of real trade are zero or lower.[6] This accurately reflects actual trade observations, without excluding the lack of trade as a non-observation and has been used previously where real trade observations equal zero (Eichengreen and Irwin 1995).

Third, we run regressions with fixed importer and exporter effects. Failure to include fixed importer and exporter effects reduces the tendency to overestimate coefficients. Research has noted that utilizing a gravity model without comprehensive fixed effects or friction variables may not correctly estimate key variables (Feenstra 2002; Anderson and Van Wincoop 2003). An international border unquestionably brings about additional variables that impact the flow of trade as demonstrated most notably by McCallum (1995). McCallum, omitting fixed importer and exporter effects, found an implausible 2200% increase in intra-Canadian trade due to the border with the United States. As others have demonstrated, including country effects changes the results but will provide more moderate results and a better estimation of the data (Anderson and van Wincoop 2003; Feenstra 2002; Egger 2000, 2002; Matyas 1997, 1998). To the best of the author's knowledge, no other research studying the relationship between international trade and democracy has utilized fixed year, importer, and exporter effects. I seek to correct this oversight.

Fourth, measures of democracy remain inherently subjective snap shots. Statistics on democracy remain qualitative variables that do not capture the same meaning as observed statistics of distance or GDP. Scholars have sought to rectify this by using instrumental variables highly correlated with democracy such as the death penalty or related factors (Yu 2006; Harrelson-Stephens and Callaway 2003). However, in a separate study comparing three measures of democracy with a high level of correlation, each measure of democracy produces different results (Casper and Tufis 2002). As the results here indicate, measures of democracy that attempt to capture the same qualitative phenomenon may produce different results. Although the empirical evidence that democracy positively affects international trade is

lacking, it may stem from the inability of measures of democracy to properly capture and quantify it.

Fifth and finally, work to date studying international trade and democracy has failed to fully correct for the role of income. Some cross-country studies of trade and democracy have focused on major powers and rich democracies (Morrow, Siverson, and Tabares 1998). Democracy and income are strongly correlated, with income levels acting as a primary inhibitor to democracy (Borooah and Paldam 2007). Most international trade involves at least one rich country, a democracy. This failure to correct for these empirical issues has biased results upward and consequently found that democracy has a large and statistically significant impact. Other bilateral gravity model studies have demonstrated that when the impact of rich countries is controlled for, the cross country significance drops dramatically and heads to zero for middle and low income countries (Subramanian and Wei 2007). This paper controls for the impact of income, isolating democracy and international trade.



## The model

This paper utilizes a standard gravity equation model. To distinguish the importance of democracy on imports and exports, it is necessary to control for the potential range of democracy within each country. The basic model will be specified as follows:

$$\begin{aligned}\ln(M_{ijt}) = {} & \ln D_{ij} + \ln(Area_i Area_j) + \ln(Y_i Y_j) + \ln(Y_i Y_j / Pop_i Pop_j) + Lang_{ij} \\ & + Border_{ij} + Landl_{ij} + Island_{ij} + ComCol_{ij} + CurCol_{ij} + Colony_{ij} \\ & + Comctry_{ij} + Custrict_{ijt} + FTA_{ijt} + T_t + MDem_i + XDem_j\end{aligned}$$

where $i$ and $j$ denote trading partners, $t$ denotes times, and the variables are:[7]

- $M_{ijt}$ is the real imports of $i$ from $j$ at time $t$.
- $D$ is the distance between $i$ and $j$.
- $Y$ is real GDP.
- *Pop* is population.
- *Lang* is a dummy variable, which is unity if $i$ and $j$ have a common language.
- *Border* is a dummy variable, which is unity if $i$ and $j$ share a land border.
- *Landl* is the number of land locked countries in the country pair (0,1,2).
- *Island* is the number of island nations in the pair (0,1,2).
- *Area* is the area of the country (in square kilometers).
- *Comcol* is a dummy variable, which is unity if $i$ and $j$ were ever colonies after 1945 with the same colonizer.

- *Curcol* is a dummy variable, which is unity if *i* is a colony of *j* at time *t* or vice versa.
- *Colony* is a dummy variable, which is unity if *i* ever colonized *j* or vice versa.
- *Comctry* is a dummy variable, which is unity if *i* and *j* were a part of the same country at some point during the sample.
- *Custrict* is a dummy variable, which is unity if *i* and *j* use the same currency at time *t*.
- *FTA* is a dummy variable, which is unity if *i* and *j* belong to the same regional trading agreement.
- *T* is a comprehensive set of annual time 'fixed effects' with one dummy per year.
- *MDem* is a measure of democracy in the importing country *i* at time *t*.
- *XDem* is a measure of democracy in the exporting country *j* at time *t*.

This model disaggregates trade into the impact of democracy on importers and exporters. The regressions utilized an importer or exporter democratic variable, but not both simultaneously. Taking this approach, we seek to isolate the impact of democracy rather than introducing controls for the political regime of the trading partner.

## The results

The biggest result is no result at all. The baseline results, presented in Table 1, indicate that although the democracy variables have a statistically significant impact on trade, the economic impact is minimal. Before turning to the democracy variables, it is important to note in brief that the gravity variables returned the expected results in line with the literature.[8] The coefficient for distance was large and negative while that for GDP was large and positive.[9] The gravity model preformed as expected. The interesting portion of the model came from the democracy variables. The baseline results come from three democratic variables. The first is a democratic index on a scale of 0 to 10 with a 10 indicating complete democracy. The second is an autocratic index on a scale of 0 to 10 with a 10 indicating complete autocracy. The third is a combination of the democratic and autocratic indexes, which equals the democratic score minus the autocratic score and it is called the Polity index. This last index ranges from $-10$ to 10. Although this last index may seem redundant it is worth emphasizing that most countries throughout the world have some democratic features as well as some autocratic features.

The democracy variables taken from the Polity IV database indicate that democracy has a statistically significant but economically minimal impact on international trade. As expected, democracy increases trade while autocracy has no economically or statistically impact on trade. The polity

Table 1. Baseline results.

| | |
|---|---|
| Regional | 0.18 (0.26) |
| Currency Union | 0.99 (0.36) |
| Distance | −1.59 (0.04) |
| Real GDP | 0.69 (0.08) |
| Real Per CapitaGDP | 0.11 (0.08) |
| Common Language | 0.68 (0.07) |
| Border | 0.18 (0.22) |
| Landlock | 0.36 (0.26) |
| Island | −0.72 (0.56) |
| Land Area | 0.54 (0.06) |
| Common Colonizer | 0.69 (0.10) |
| Current Colony | 1.98 (0.62) |
| Colony Post−1945 | 1.54 (0.17) |
| Common Country | 0.66 (0.18) |
| Importer Democracy | 0.003 (0.0004) |
| Exporter Democracy | 0.001 (0.0005) |
| Importer Autocracy | 0.0005 (0.0004) |
| Exporter Autocracy | 0.0003 (0.0005) |
| Importer Polity | 0.004 (0.0005) |
| Exporter Polity | 0.002 (0.0005) |
| R-squared | 0.63 |
| Observations | 333,798 |

Note: Robust coefficients with standard error in parentheses.



index returns coefficients that are almost zero with the only economically significant variable indicating that if a country went from absolute autocracy to absolute democracy exports would increase 2%.[10] Finally, although the coefficients return the expected sign and demonstrate statistical significance, this should be considered based upon the amount of data used. The statistical significance and economic insignificance imply that democracy is statistically significant because of the sample size.

## A second level of variables

Included in the Polity IV database are variables associated with the characteristics of democracy. There are a few basic points that need to be made about the results. First, the basic result is that the coefficients are economically and statistically insignificant. Even at high levels, they would only increase imports by 2%. Second, even though they claim to measure different aspects of the democratic process, all variables from the Polity IV dataset – such as Executive Constraints and Regulation of Participation – except Durability, as presented in Table 2, perform similarly in the gravity model. Although these variables attempt to measure different aspects of the democratic process, they do not appear to succeed. Third, the lack of statistical or economic significance is not necessarily a negative finding.

Table 2. Additional democracy variables.

| | Importer | Exporter |
|---|---|---|
| Durability | −0.005*** (0.001) | −0.003*** (0.001) |
| Regulation of Executive Recruitment XRREG | 0.002*** (0.0004) | 0.0008 (0.0005) |
| Competitiveness of Executive Recruitment XRCOMP | 0.002*** (0.0004) | 0.0009 (0.0005) |
| Openness of Executive Recruitment XROPEN | 0.002*** (0.0004) | 0.001 (0.0005) |
| Executive Constraints XCONST | 0.002*** (0.0004) | 0.001** (0.0005) |
| Regulation of Participation PARREG | 0.002*** (0.0004) | 0.0006 (0.0005) |
| Competitiveness of Participation PARCOMP | 0.002*** (0.0004) | 0.001** (0.0005) |



There is little political science or economic reasoning to believe that the democratic characteristics presented in Table 2 would have a significant impact on trade except in rather indirect ways and the results support that. For instance, there is little reason to expect that the Competitiveness of Executive Recruitment would significantly and directly impact imports or exports and this work finds little economic impact.

## Democracy and the rest of the story

Literature argues that democracy positively impacting trade implies that democracy has an indirect effect through economic freedom or quality of governance (Paldam 2003; De Haan and Sturm 2003). Table 3 presents a range of variables taken from the Quality of Government dataset. These are variables that proxy for democracy via their correlation with characteristics one would associate with an open and free government. Although not every government-related variable from the QOG dataset is presented, the results are broadly representative. In addition, just because a coefficient is negative does not mean a negative relationship between democracy and trade due to the scaling relationship used in the specific variable. There are some broad patterns and interesting results. First, while the coefficient signs are what would be expected, the consistency of economic or statistical significance is underwhelming. Statistical significance for democratic related variables is achieved in roughly 2/3 of cases while, similar to the Polity IV results, economic significance is lacking in other cases. Second, many of the coefficients, when comparing between imports and exports, are either signed differently or insignificant. When counting economic and statistical insignificance, 20 of the 27 coefficients have either opposite signed import

Table 3. The rest of the story.

| | Importing country | Exporting country |
|---|---|---|
| CHGA Regime Type | −0.36*** (0.04) | −0.19*** (0.03) |
| CIRI Freedom of Assembly and Association | 0.12*** (0.02) | −0.07*** (0.02) |
| CIRI Freedom of Movement | 0.11*** (0.03) | −0.18*** (0.03) |
| CIRI Political Participation | 0.11*** (0.02) | −0.03 (0.02) |
| CIRI Religious Freedom | −0.0008 (0.02) | −0.14*** (0.03) |
| CIRI Freedom of Speech | 0.006 (0.02) | −0.02 (0.02) |
| CIRI Women's Economic Rights | −0.08*** (0.02) | 0.02 (0.02) |
| CIRI Women's Political Rights | 0.06** (0.02) | 0.04** (0.02) |
| DPI Plurality | −0.33*** (0.08) | 0.10 (0.06) |
| DPI Proportional Representation | 0.17* (0.09) | −0.03 (0.08) |
| FH Civil Liberties | −0.06*** (0.01) | −0.06*** (0.01) |
| FH Democracy | 0.04*** (0.01) | 0.02*** (0.006) |
| FI Legal Structure and Security of Property Rights | −0.01 (0.02) | −0.04*** (0.01) |
| HF Economic Freedom | −0.003 (0.008) | −0.005 (0.008) |
| HF Property Rights | −0.03 (0.03) | −0.18*** (0.03) |
| PT Majoritarian | −0.12 (0.10) | −0.27** (0.13) |
| SGPS Bicameral System | 0.06 (0.08) | −0.04 (0.08) |
| SGPS One Party System | 0.13* (0.07) | −0.09 (0.08) |
| TI Corruption Perception Index | −0.03 (0.03) | 0.03 (0.02) |
| Vanhanen Index of Competition | 0.007*** (0.0006) | 0.002*** (0.0005) |
| Vanhanen Index of Democratization | 0.02*** (0.001) | 0.009*** (0.001) |
| Vanhanen Index of Participation | 0.006*** (0.0007) | 0.005*** (0.0006) |
| ICRG Quality of Governance | 0.63*** (0.12) | 0.85*** (0.11) |
| WBGI Control of Corruption Estimate | −0.23*** (0.06) | 0.23*** (0.06) |
| WBGI Government Effectiveness Indicator | 0.03 (0.07) | 0.32*** (0.07) |
| WBGI Political Stability Estimate | −0.17** (0.07) | 0.16** (0.07) |
| WBGI Rule of Law Estimate | −0.002 (0.08) | 0.51*** (0.09) |
| WBGI Regulatory Quality Estimate | 0.23*** (0.06) | 0.26*** (0.07) |
| WBGI Voice and Accountability Estimate | −0.08 (0.09) | 0.61*** (0.09) |



and export coefficients or at least one insignificant coefficient. This implies that democracy and its characteristics may not be as unequivocally good at raising trade as argued and may potentially cause overall trade to cancel out if imports and exports move in opposite directions.

Taking a closer look, however, some of the coefficients lend themselves to logical explanations. First, the freedom of association type variables that come from CIRI indicate that civil liberties increase imports but have either a negative or insignificant impact on exports. It may be possible that societies when exposed to freedom desire foreign goods, but there would seem little reason for freedom of association to drive exports. Second, Transparency International corruption coefficients are insignificant, while

World Bank corruption statistics are negative, economically, and statistically significant, reducing imports but driving exports. As research indicates, governments may sell the rights to export through either formal or informal means (Congleton and Lee 2009). Research indicates that corruption harms growth via the reduction in investment, collusive behavior, and international trade and these results support those conclusions (Gatti 2004; Habib and Zurawicki 2002; Mauro 1995). Open and democratic governments tend to have lower corruption levels, reducing the growth and trade reducing effects. Third, legal and economic security variables are largely insignificant for imports but have a large impact on exports. Fraser Institute, Heritage Foundation, and World Bank variables have no effect on imports while increasing exports. This makes economic sense as exporters to country A care little about the legal framework in country A and more about the credit worthiness of their trading partner. Conversely, an exporter from Country A will be significantly impacted if it faces potential expropriation or harassment at home while attempting to export. Fourth, the quality of governance results have a range of coefficients on imports but are generally economically and statistically significant on exports. There are a few potential factors at work. Governance will have little impact on import demand and instead would flow through via increased income, indirectly raising imports. Governments, even of the democratic variety, tend to dislike imports while actively promoting exports which may explain the divergence in import and export coefficients. Furthermore, these finding bolster research, indicating that democracy has a positive but fragile relationship to income, while institutional quality is much more robust (Rigobon and Rodrik 2005). Fifth, economic freedom appears to have no impact on levels of international trade. The one consistent variable that impacts international trade is quality of governance measures.



## The income effect

Studies on trade and democracy have failed to adequately control for income levels. Countries with higher income levels will have higher levels of international trade (Linder 1961; Rose 2004a). However, counterfactual examples of lower income and less democratic states such as China and Singapore have made the relationship between democracy, income, and trade questionable. Research has found that when differences in income levels are controlled for in the gravity model, the impact across countries drops considerably or disappears completely (Subramanian and Wei 2007). When I control for the interaction of income levels and democracy in Table 4, using a variety of interaction terms and data exclusions, I find the positive effects of democracy relating directly to income levels diminish. Rich countries have economically and statistically significant gains from

Table 4. The income effect.

| | Importer | Exporter |
|---|---|---|
| High income democracy | 0.11 (0.01) | 0.04 (0.01) |
| High income autocracy | −0.14 (0.02) | −0.06 (0.01) |
| High income polity | 0.06 (0.008) | 0.03 (0.006) |
| Middle and low income democracy | 0.02 (0.006) | 0.005 (0.005) |
| Middle and low income autocracy | −0.008 (0.006) | 0.01** (0.006) |
| Middle and low income polity | 0.008 (0.003) | −0.002 (0.003) |
| Middle and low income democracies wo high income partners | 0.02 (0.006) | −0.002 (0.006) |
| Middle and low income autocracy without high income partners | −0.01 (0.007) | 0.02** (0.007) |
| Middle and low income polity wo high income partners | 0.009 (0.003) | −0.005 (0.003) |



trade with all the coefficients signed as expected. Middle and low income countries have mostly insignificant coefficients and some theoretically incorrect signs. Middle and low income autocracies have positive export coefficients, although these are only significant at the 5% level. The democracies that demonstrate the most consistent gains from trade during the period under consideration are rich democracies. The hypothesis that international trade and democracy are related is highly dependent on income level.

**Democratic transitions: the before and after effect**

Results are presented in Table 5 of democratic transitions. When democratic, or autocratic, transitions occur do we witness significant shifts in their level of international trade? The results while providing some support of this argument are not overwhelming. To focus more clearly on the impact of democracy, three additional types of variables were created. First, one- and two-year lagged variables were created to test the importance of establishing democracy. Second, increases or decreases in democratic variables, including democratic or autocratic transitions. Third, country regressions focused on countries that experienced large and sudden changes in their democracies. These new variables seek to target the countries and time periods that endured large changes in their polity score, either becoming more autocratic or more democratic, to test if large movements are more important than incremental change. Positive changes towards

Table 5. Democratic transitions.

| | Importer | Exporter |
|---|---|---|
| 1 Year Polity Lag | 0.004* (0.00) | 0.003* (0.00) |
| 2 Year Polity Lag | 0.003* (0.00) | 0.002* (0.00) |
| 1 Year FH Polity Lag | 0.04* (0.00) | 0.01** (0.01) |
| 2 Year Polity Lag | 0.05* (0.01) | 0.007 (0.005) |
| 1 Year Quality of Governance Lag | 0.02* (0.00) | 0.008* (0.00) |
| 2 Year Quality of Governance Lag | 0.02* (0.00) | 0.006* (0.00) |
| Polity 1 Year Difference ($Polity_t - Polity_{t-1}$) | 0.001*** (0.000) | −0.000* (0.00) |
| Polity 2 Year Difference ($Polity_t - Polity_{t-2}$) | 0.000 (0.000) | −0.000*** (0.00) |
| FH Polity 1 Year Difference ($Polity_t - Polity_{t-1}$) | −0.01** (0.01) | 0.007 (0.007) |
| FH Polity 2 Year Difference ($Polity_t - Polity_{t-2}$) | −0.01*** (0.01) | −0.000 (0.00) |
| Quality of Governance 1 Year Difference ($QOG_t - QOG_{t-1}$) | −0.02* (0.00) | −0.002 (0.001) |
| Quality of Governance 2 Year Difference ($QOG_t - QOG_{t-1}$) | −0.02* (0.00) | −0.002 (0.001) |
| 1 Year Democratic Transition (Polity difference $>3$) | 0.07** (0.03) | 0.08*** (0.04) |
| 2 Year Democratic Transition (Polity difference $>3$) | 0.03 (0.03) | 0.03 (0.03) |
| 1 Year Autocratic Transition (Polity difference $<-3$) | −0.16* (0.03) | −0.05 (0.03) |
| 2 Year Democratic Transition (Polity difference $<-3$) | −0.22* (0.03) | −0.08 (0.03) |
| Brazilian Democratic Transition | 0.34*** (0.20) | 0.02 (0.38) |
| Portuguese Democratic Transition | 1.51* (0.23) | −0.70* (0.26) |
| Spanish Democratic Transition | 1.29* (0.18) | −1.27* (0.27) |
| Ugandan Democratic Transition | −1.02* (0.33) | 0.84*** (0.44) |
| Zimbabwean Democratic Transition | −0.44*** (0.25) | 1.74* (0.37) |
| Thai Democratic Transition | 1.00* (0.20) | −0.24 (0.29) |
| South Korean Democratic Transition | 0.58* (0.19) | 0.001 (0.32) |

Note: ***Significant at the 10% level; **significant at the 5% level; *significant at the 1% level. All regressions with fixed importer, exporter, and year effects with standard errors in parentheses.

improved democracy may involve decreased conflict while many states that become more autocratic suffer from higher levels of conflict as well as many other problems that prevent international trade. States that endured changes in their democratic polity scores promoted a wide range of economic policy from varieties of socialism to free market export oriented growth policies. The policy orientation of developing states, especially those involved in large democratic transitions, significantly influenced their economic development objectives and targets, impacting their international trade levels.

The results are mixed. First, lagged variables demonstrate statistical significance but little economic significance. While the results provide the expected sign, the economic and statistical significance is minimal. Second, this work used differences between the current democratic variable and lagged variables to measure the impact of changes in democratic standing. This was further broken down into two separate variables. The first was simple year-to-year differences, where most observations captured small movements. In the second instance, we excluded year-to-year fluctuations, focusing on democratic or autocratic transitions where polity data differed significantly year to year. The variables measuring yearly differences in democracy returned economically and statistically insignificant results. When excluding the small year-to-year differences, the transitions to democracy indicate borderline statistical significance but transitions to autocracy clearly demonstrate economically and statistically significant drops in international trade. Moving from autocracy to democracy does not indicate higher trade levels, but moving from democracy to autocracy means lower trade. Third, when focusing on specific countries that experienced transitions, the results back up the cross-country data of somewhat positive but inconsistent results. Some of the countries significantly increase trade after democratic transitions and others experience significant decreases in trade under democracy. As indicated in Table 5, European countries such as Spain and Portugal increased trade under democracy while Uganda and Zimbabwe traded less and Brazil, while trading more, was barely significant at the 10% level. While Spain and Portugal made democratic transitions and joined the European Union with significant infrastructure already in place, Uganda and Zimbabwe enjoyed none of those benefits as landlocked African countries surrounded by poor conflict prone states. The evidence supports the idea that democracy is economically positive but only weakly.



## Conclusions

The evidence supporting the claim that democracy increases international trade is fragile, principally for two reasons. First, 'democracy' is a weak proxy for attributes of underlying institutions that provide well-run government. When using more explicit measurements of what democracy represents rather than broad measures, the results indicate international trade is promoted by a well managed and governed economic environment. Second, previous research has failed to properly estimate the gravity equation and has therefore overestimated the impact of democracy on international trade levels. The inclusion of fixed importer, exporter, and time effects allows for proper estimation of the gravity model. We can conclude that evidence of the claim relating democracy to international trade is weak and the relation is not robust.

## Notes

1. For a recent investigation of mercantilism, see for example Congleton and Lee (2009).
2. In this plot on the Political Freedom axis, 1 is free and 7 is not free. On the Economic Freedom axis 100 is considered free and 0 is considered not free. Therefore, points in the upper left hand corner are both politically and economically free while those in the lower right hand corner are not free.
3. To download the data, paper drafts, and supporting output for STATA go to http://faculty.haas.berkley.edu/arose
4. The gravity model has been used by a wide variety of authors to study a wide variety of trade issues (Feenstra, Markusen, and Rose 2000; Rose and Spiegel 2003; Anderson and van Wincoop 2003, 2004; Feenstra 2002; Glick and Rose 2001; Rose 2003, 2004b; Frankel and Romer 1999).
5. Please note that in my data set, due to direction of trade data, not all countries from the Rose data set have been included. For instance Bhutan, Namibia, and Swaziland were not included as there were not four trade numbers from which to arrive at an average of two import data statistics.
6. The natural log of small numbers is negative therefore many observations of real imports are negative observations. 12.8% of all observations of the natural log of real imports were zero or below.
7. The models, variables, dataset, and descriptions are almost completely from Rose (2003) except as noted previously.
8. Table 1 does not present the results of all baseline regressions as all basic gravity model variables such as distance and GDP returned nearly identical coefficients across regressions. The focus of this study is on the democratic, autocratic, and polity variables rather than the impact of distance.
9. It is worth noting and emphasizing that due to econometric issues not every variable will appear in each variation of the model, especially between the perturbations with and without country effects. This is in keeping with the gravity model literature and observation of plausibility. It is worth emphasizing that there is a significant degree of similarity between the regressions with or without fixed country effects.
10. It is worth noting that the gravity model in the absence of fixed country effects returned some rather large returns to certain variables. In fact many users of the gravity model now include fixed country effects to moderate implausibly large returns on variables. The Polity Exporter variable comes back close to zero, indicating the coefficient without fixed country effects should be taken with a grain of salt.

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