

**Globalization and Democracy: An Empirical Analysis Using A Simultaneous  
Equation Approach**  
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**Abstract.** This paper explores the relationship between globalization and democracy. Globalization is defined as exports from a less developed country to the United States (U.S.). A hypothesis, loosely based on a Heckscher-Ohlin set-up, is developed based on the income gain accruing to the abundant factor, labor, in the developing country. Labor's income gain raises their marginal benefit from political activity and thus leads to more democracy. As democracy increases, the exporting LDC will be rewarded with easier access to the U.S. market. The relationship between exports and democracy is thus modeled as a simultaneous process. To test the hypothesis that exports to the U.S. increase democracy in the exporting country, illustrative case studies of Mexico, South Korea, the Philippines, and Bangladesh are combined with an econometric analysis. Both sets of empirical results provide strong support for the hypothesis that increased exports lead to higher levels of democracy. The econometric results are robust to alternative measures of trade and alternative measures of democracy. A Granger causality analysis reveals statistical support in favor of the two-way causation between exports and democracy.

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## Introduction

The last half of the twentieth century witnessed a resurgence of globalization and a rise in democracy. What are the determinants of globalization's resurgence and democracy's rise? Is the resurgence of globalization a determinant of the rise in democracy? Or, conversely, is the rise in democracy a determinant of the resurgence of globalization? This paper attempts to untangle the connection between globalization and democracy taking seriously issues of endogeneity due to simultaneous causality between globalization and democracy.

A significant correlation between the number of world electoral democracies and total world manufactured exports is evinced by data presented in Figure 1. What, however, can be made of this pattern between globalization and democracy? Indeed, these two processes are highly related but what is the causal connection between globalization and democracy? To date, a body of work addressing this relationship has developed a set of findings that are varied with indications that remain suggestive of a host of potential causal relationships.

The influence of trade on democracy, for instance, finds support in Rogowski (1987) who argues trade openness shapes the development of domestic institutions including the type of electoral system. Recent work by Li and Reuveny (2003) and Rudra (2005) indicates globalization defined as trade openness or short-term portfolio flows negatively impacts democracy while globalization defined as foreign direct investment (FDI) increases democracy<sup>2</sup>. It thus appears trade has a negative impact on democracy; however, there are logical reasons to question this negative connection. Bhagwati (2002, p.43), for example, provides a simple logic that contradicts this negative finding. He states: "...openness to the benefits of trade brings prosperity that, in turn, creates or expands the middle class that then seeks the end of authoritarianism." Logically then the effect of trade on democracy remains an open question. The effect of trade on democracy also

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<sup>2</sup>See also Rodrik (2003) and Maxfield (2000).

remains an open question for empirical reasons. Most negative conclusions of trade on democracy employ a measure of trade openness (i.e. exports plus imports divided by GDP) which is accurately a measure of trade dependence not globalization defined as increased economic interdependence. Broad measures of trade openness conceal exactly who the winners and losers are from increased trade and thus make it hard to predict the associated politics and any subsequent democratic reform. That is, two countries with the same level of trade openness may experience vastly different domestic effects of increased trade as the factors employed in supporting increased trade could be entirely different.

In addition to the effect of trade on democracy, there is also reason to believe that democracy influences levels of trade and trade liberalization. Frye and Mansfield (2004), for example, find the rise of democracy has increased economic openness in the post-communist world while Milner's (2005) work indicates the rise of democracy has in part caused the decline of import barriers for many less-developed countries (LDCs). Furthermore, Kono (2006) argues democracy promotes "optimal obfuscation", i.e., democracy appears to encourage open trade via lowered tariffs but at the same time encourages high levels of protection via increased non-tariff barriers. The general finding here is thus that democracy has an impact on trade leaving the possibility of joint causality between globalization and democracy.

While our understanding of globalization and democracy has undoubtedly been enriched by all of these findings, there still thus remains a gap in the literature: Does globalization impact democracy, or does democracy impact globalization? Or, is the relationship one of simultaneous causality?

To help bridge this gap, the process between globalization and democracy is modeled here as one of simultaneous causality. In this analysis, globalization is defined and studied as bilateral exports. Exports represent the heart of globalization. The delivery of one nation's goods to another

captures increased integration since the goods sent abroad indicate explicitly the foreign source of production but also implicitly indicate the differences in relative factor endowments between exporter and importer. Moreover, exports increase the level of national production and are thus generally a politically favorable means of pursuing globalization, a strategy that dates back to 19<sup>th</sup> century mercantilist thought. Indeed, in the last twenty years the major transition for many LDCs economic development strategy has been to abandon import-substitution industrialization (ISI) based policies in favor of export-led models of development. Exports remain a core part of globalization. The following question is thus asked in this paper: How have export-led models of growth impacted levels of democracy in the exporting country?

To begin to get an idea of the relationship that exists between exports and democracy, data for Poland and Hungary, two transition cases cited by Frye and Mansfield (2004) and Milner (2005), is plotted in Figure 2. According to Freedom House, Poland's democratization occurred from 1989

(FIGURE 2)

to 1991 (p.506). Figure 2 indicates that before Poland's democratization U.S. exports increased for several years. However, it is also clear from the data that exports from Poland leveled off over the period of democratization and then after the consolidation of democracy exports, again, increased. This data suggests the possibility of a process in which there is simultaneous causality.

Like Poland, Hungary also experienced a move to democracy in the late 1980s, and, according to Freedom House, held its "first, free multiparty parliamentary election in 1990" (p.280). The data for Hungary, displayed in Figure 3, exhibits a noticeable increase in U.S. exports prior to

(FIGURE 3)

democratization in 1990. Similar to Poland, the upward trend for U.S. exports decreases during the period of democratization but the trend begins to increase after the turn to democracy in 1990.

Once again the Hungarian experience provides good reason to view the interaction between exports and democracy as mutually causal.

Other cases outside of Eastern Europe show a similar association between exports to the U.S. and the exporting country's level of democracy. For example, in 1982 Turkey amended its constitution to provide citizens increased democratic opportunities (Freedom House, p.646).

Following their democratic reform, Figure 4 demonstrates a rise in Turkey's exports to the U.S.

(FIGURES 4 and 5)

Notice, however, after this steady increase in U.S. exports Turkey then experiences another increase in their level of democracy suggesting, like the data for Poland and Hungary, that exports and democracy are mutually causal. Furthermore, the association holds for Nigeria who, according to Freedom House, made its first "peaceful transition from one democratically elected government to another in April 2003" (p.465). Prior to this election, Nigeria's exports to the U.S., displayed in Figure 5, increased from 1997 until 2000 and, in general, the association again indicates a strong relationship between U.S. exports and democracy in Nigeria.

Building on these trends, the primary question in this paper can now be stated as follows: How do exports to the U.S. impact levels of democracy in the exporting country? To get beyond associations, a hypothesis, derived using a simple Heckscher-Ohlin framework, is developed in which higher levels of exports are shown to have a positive effect on levels of democracy. The hypothesis is tested with several illustrative case-studies including Mexico, South Korea, the Philippines, and Bangladesh and also a large-*n* time-series cross-section data set utilizing a two-stage least-squares fixed effects estimator. The evidence indicates increased exports to the U.S. raise the level of democracy in the exporting country. Robustness checks using the measure of international trade employed by Li and Reuveny (2003) and Rudra (2005) show trade openness, i.e. exports plus imports divided by GDP, also increases the level of democracy, and additionally, increased U.S.

goods imports also has a positive impact on the level of democracy in the source country.

Alternative measures of democracy using the Freedom House measure of civil liberties exhibit consistent econometric results, and, finally, a Granger-causal analysis indicates statistical support for the simultaneous process between exports and democracy. In sum, the argument and empirical data indicate that globalization, defined as exports to the U.S., encourages democracy in LDCs.

The upshot of this paper's primary result—that increased exports to the U.S. adds to the level of democracy in the exporting country—holds important implications for U.S. foreign policy. If the U.S. wants to promote democracy in developing countries then the least invasive, possibly most peaceful, means to do this is to further open U.S. markets to increased imports from developing countries. Globalization at home may thus be the best and most practical method to maintain the U.S.'s deep interest of building international security by developing democracy abroad.

The rest of this paper is organized as follows: First, a hypothesis is developed. Second, the case studies and econometric results are presented. Finally, the conclusion speculates why the results here vary from prior research and also considers policy implications and areas for future research.

### **Exports and Democracy: A Hypothesis**

Assume a world with just two countries, one a developing country and the other a developed country, in this case the U.S. Furthermore, assume the developing country's political system exhibits democratic and autocratic characteristics making it an imperfectly developed, or yet to be consolidated, democracy. Suppose the developing country is relatively labor abundant while the U.S. is relatively capital abundant—a set-up similar to the common Heckscher-Ohlin analysis of international trade. In this set-up both countries produce two commodities, say cars and clothing, each using two factors of production, labor and capital. Production is competitive and is characterized by identical production technologies and constant returns to scale. Product and factor

prices are jointly determined by supply and demand conditions in which the firms accept and adjust to any price changes. Factors, however, are immobile internationally allowing for pre-trade price differentials across countries.

In this simple world producers are able to choose a variety of production technologies with the main difference being the capital to labor ratio. Firms adjust capital to labor ratios as their prices vary. Cars and clothing are produced under identical production conditions so that if producers face identical factor prices then they will use the same ratios of productive factors. However, the production processes within each country differ in terms of the capital to labor ratio that each country utilizes. In this case cars are capital intensive in terms of both the human and physical capital required for their production. Or, stated equivalently, clothing is relatively labor intensive. This means that cars are the capital intensive commodity in both countries.

Now, suppose the developing country increases its exports destined for the U.S. market. Following the Stolper-Samuelson theorem, increased exports will divert the developing country resources into clothing production causing an increased demand for labor and an increase in their real wages. However, not all groups will enjoy the same gains and labor will thus face hostility from other groups such as import competing capital owners. To protect their gain labor thus must increase their level of political participation to ensure they keep some of their surplus.

The income participation effects follows from the early modernization literature (Lipset, 1959, p.75) and highlights that a minimum amount of income is necessary to actively participate in the political process. Exports have thus modified labor's opportunity costs of political activity. As their income increases tax policies including income and property taxes, redistribution policies like social security and health care, and monetary policy suddenly become more important to labor. The increased significance of keeping policy in their favor raises labor's marginal benefit to political activity. At the margin, therefore, we should expect more political activity from labor due to

increased exports. However, to be politically active labor in the developing country needs the opportunity, or venue, to express its views. Since the political system in the developing country is less than a full democracy labor must first demand institutional change so they can express their policy position. As a result of these increased demands the political marketplace will diversify and the level of democracy thus increases.

As exports from the developing country to the U.S. increase the level of democracy in the exporting country, then it is expected that the increase in democracy will lead to a future increase in bilateral exports. Mansfield, Milner, and Rosendorff (2000), for example, find that pairs of democracies trade more than mixed pairs comprised of a democracy and an autocracy. If pairs of democracies trade more compared to mixed pairs of democracies and autocracies then it is logically consistent to expect that as a country becomes more democratic it will trade more with an advanced democracy like the U.S. As the developing country in this example becomes increasingly democratic then its level of exports to the U.S. should appropriately increase.

This argument is consistent with empirical evidence. Indeed, access to the U.S. market often depends on a developing country's commitment to, or past improvements, in its level of democracy. Promoting democracy using trade policy has been a common tactic in U.S. foreign policy. According to Huntington (1991), the U.S. has had four phases in their promotion of human rights and democracy. In the first phase during the early 1970s Huntington notes, "Congress added human rights amendments to the Foreign Assistance Act, the Mutual Assistance Act, and the Trade Reform Act"(91). Huntington notes in the third wave the U.S. used a variety of means to promote democracy including "economic pressures and sanctions, including congressional limitations on or prohibitions of U.S. assistance, trade, and investment in fifteen countries..."(93). In addition, throughout the Cold War the U.S. limited trade with the Soviet Union and other Warsaw Pact countries as a means to pressure political reform. This lack of trade to the Eastern block is

associated, however, with limited democratic change and it was not until the end of the Cold War when exports increased that levels of democracy increased.

From this discussion we can expect that increased exports from a developing country to the U.S. will raise the level of democracy in the exporting country and also that higher levels of democracy will also lead to more exports. The next section tests this argument.

## **Empirical Results**

Based on the theory the following hypotheses are tested, both of which are believed to be jointly determined.

*Hypothesis 1. Increased exports from a developing country to the U.S. increases the level of democracy in the developing country.*

*Hypothesis 2. Increased democracy in the developing country increase exports to the U.S.*

A two part empirical analysis including illustrative case studies and a large-*n* econometric study are utilized to test these hypotheses.

## **Illustrative Case Studies**

In this section four cases are studied each designed to provide a simple test of the hypotheses. The cases are selected based on the variation in the key variables, specifically the amount they export to the U.S. and variation in their level of democracy. Democracy is measured using the common polity measure. (See Table 1 for a full description of all data definitions and sources.) Alternative measures of democracy are employed to test the robustness of the results

### *Mexico*

This paper's logic argues increased exports yield higher wages in exporting industries which following Lipset (1959) and recent work by Epstein et. al. (2006) stimulates demands for democracy. Mexico provides evidence in support of this causal effect is presented. Figure 6, for example,

(FIGURES 6, 7, 8, 9)

displays manufacturing wage data in Mexico along with exports to the U.S. and exhibits a close and positive relationship between exports and wages. Moreover, Figure 7 provides data on wages in

apparel manufacturing indicating, again, a positive relationship between wages and exports to the U.S. Finally, Figures 8 and 9 display wages in manufacturing for electrical machinery and motor vehicles, common export industries from Mexico to the U.S., providing more evidence of a positive connection between wages and exports to the U.S.

Now, let's consider the next step in the argument regarding the increase in the level of democracy. Mexico's political reform began in the 1970s when the Portillo regime addressed three important problems: First, it attempted to regain political legitimacy which many believed had been lost in the 1968 student strike and the 'Tlatelolco massacre' (Middlebrook, p.126). Second, reform was motivated by the "emergence of several new opposition political parties" (Middlebrook, 127). Third, reform was motivated to address internal problems within the PRI which in part sought to address "the need to represent an increasingly urban, often middle-class electorate" (Middlebrook, 128). The reform measure was officially enacted on December 31, 1977. The effect of these reforms was to increase political options for "dissidents" drawing them away from violence (Preston and Dillon, 92). Yet Mexico's level of democracy as measured by the polity score was still below zero in 1980.

Following this early reform movement, the 1980s proved to be a period in which Mexico's exports remained at a consistently low level. With limited exports, the 1980s were especially tough on labor. It was a period in which they lost long-standing privilege with the state and ultimately labor could no longer "exert the influence and bargaining pressure they had once wielded"(Cook, p.79). Figure 10 indicates that while exports remained low and unchanging, and labor lost power

(FIGURE 10)

and influence, there was no change in Mexico's level of democracy. In the late 1980s, however, Mexico begins to demonstrate evidence in support of the jointly determined process between exports and democracy with a mutual increase in their exports to the U.S. and their level of

democracy. The NAFTA agreement occurs during a period of export expansion and the indication in the data is that the signing of the export agreement is followed by an increase in Mexico's democracy. Suchlicki argues the NAFTA agreement "exerted pressure on the PRI to provide fair and open elections" part of which was due to "increasing criticism in the United States about the Mexican electoral process and the weakness of Mexican democracy in general." Moreover, Preston and Dillon (2004, p.198) argue the campaign "for NAFTA became a driving principle of domestic politics" and that the trade agreement "brought enormous changes not only in the alignment of its economic interests but also in the country's self-perception" (p.226). The indication in Figure 10 is that for Mexico U.S. bound exports and democracy has been mutually reinforcing.

Finally, for purposes of comparison with other studies (e.g. Li and Reuveny (2003) and Rudra (2005)), Figure 11 plots Mexico's trade openness (i.e. exports plus imports as a proportion of GDP) and their polity score indicating the relationship between Mexico's trade openness and

(FIGURE 11)

democracy is also positive and closely connected.

### *South Korea*

For South Korea, like Mexico, the causal argument is tested first. Figure 12 plots wages per month (in Won) in the manufacturing of apparel, textiles, and footwear indicating a positive trend. Exports

(FIGURE 12)

to the U.S. are associated with increasing wages in each sector supporting the mechanism that increased exports raise wages in the export sectors.

Political development in South Korea includes a diverse set of groups and interests. Diamond (1999), notes that in the case of South Korea "enormous student and worker demonstrations combined with the more sober pressure of middle-class business and professional groups and opposition politicians to force the authoritarian regime to yield to demand for true

democratic change”(235). For South Korea democratic change has indeed been a product of civil society uprisings which coalesced in democratic reform in 1987 (see Bermeo in Anderson, 1999, p.130). Much of South Korea’s economic growth was due to exports destined for the U.S. market which, as Diamond states, raised the costs of repression (p.235). Data displayed in Figure 13

(FIGURE 13)

shows an increase in exports from South Korea to the U.S. beginning in 1980 followed by a major increase in democracy in 1986. In the case of South Korea exports to the U.S. take-off and then subsequently their level of democracy increases. To remain a part of the global economy and continue to grow through exports to rich markets like the U.S., consistent with Diamond’s point about the increased cost of repression for the South Korean regime, the South Korean regime had to concede democratic reform or risk future growth. The next period from 1988 to 1997 indicates South Korea maintained a consistently flat yet higher level of exports to the U.S.—possibly a reward for making democratic changes and also quite possibly as a means for the U.S. to support a fledgling democracy in a strategically important part of the world. Again it is clear from the South Korean data that the relationship between U.S. bound exports and the level of democracy is more than an association.

### *The Philippines*

For the Philippines the causal argument is illustrated with wage data in Figure 14 which exhibits that

(FIGURE 14)

wages in textiles, apparel, and footwear are highly correlated with exports to the U.S. The Philippines, similar to South Korea, also underwent a democratic transition associated with an uprising in their civil society. The official beginning of their democratic transition occurred in 1986 when President Marcos was forced from power in a fraudulent election. The data, in Figure 15,

(FIGURE 15)

exhibits the U.S. supported democracy in the Philippines, in part, with open markets. Ultimately, the increase in the Philippines' democracy was followed by a sharp rise in exports to the U.S. The data for the Philippines supports the hypothesis that increases in democracy are rewarded by better access to the wealthy U.S. domestic market.

### *Bangladesh*

Finally, Bangladesh exhibits a similar pattern between exports to the U.S. and their democracy. For Bangladesh income growth has come as a result of export based model, specifically exports in the manufacturing of textiles. Sachs notes, "Not only is the garment sector fueling Bangladesh's economic growth of more than 5 percent per year in recent years, but it is also raising the consciousness and power of women in a society that was long brazenly biased against women's chances in life"(13). The effect of exports has thus permeated much of Bangladeshi society, an important point to recognize. Given the importance of exports on economic development we should thus see an increase in Bangladeshi democracy. The data in Figure 16 does indicate a steady

(FIGURE 16)

increase in exports from Bangladesh to the U.S. beginning in the early 1980s around 1982. As this export led growth increased, Bangladesh's democracy decreased slightly, but by 1985 there was a slight increase in the democracy score and by 1990, after a long period of increasing exports, there was a significant increase in Bangladesh's democracy, and then following this increase in democracy there was a steady rise another take-off in exports to the U.S. beginning in 1991. In addition to the level of exports, disaggregated data in Figure 17 displays the U.S. imports of woven jute fabric

(FIGURE 17)

and the level of democracy in Bangladesh. The data indicates a close association between imports of the fabric and democracy in Bangladesh and the conclusion is that both measures of total exports

and imports of fabric each support the argument that increased trade with the U.S. has been associated with more democracy in Bangladesh.

### *Econometric Results*

Next, complementing the case studies a panel data analysis is conducted. The sample includes a diverse selection of fifty-two developing countries covering the period 1980 to 2000<sup>3</sup>. The sample is selected to include a diversity of countries in terms of their level of development and geographical location. Two equations are developed based on the theory and together they are estimated using the TSLS estimator. In this set-up the TSLS estimator estimates equation (1.1) using the fitted values from equation (1.2). Additionally, fixed effects are used to sweep out any time invariant factors, such as cultural influences, that could impact both exports and the level of democracy in the exporting country<sup>4</sup>.

Equations 1.1 and 1.2 explicitly detail the two simultaneous equations<sup>5</sup>. A full list of the variable definitions and sources is provided in Table 1. Equation 1.1 models the level of democracy in the exporting country as follows:

$$\begin{aligned} \text{Polity}_{it} = & \delta_{it} + \beta_2 \text{Exports}(\log)_{it} + \beta_3 \text{GDP Growth}_{it} + \beta_4 \text{Inflation}_{it} \\ & + \beta_5 \text{PopDens}_{it} + \beta_6 \text{Durable}_{it} + \beta_7 \text{Parliament}_{it} + \beta_8 \text{Polity}_{it-1} + \lambda_i + \varepsilon_{it} \end{aligned} \quad (1.1)$$

In equation 1.1 the first set of controls includes typical macroeconomic factors believed to influence democracy. Here GDP growth is included to account for aspects of Lipset's (1959) modernization argument that growth in national production increases the likelihood of democracy (see also Li and Reuveny (2003)). The expectation regarding growth, however, is unclear as some studies (e.g.

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<sup>3</sup> Countries include: Albania, Bangladesh, Benin, Bolivia, Brazil, Bulgaria, Cameroon, Chile, Colombia, Ecuador, El Salvador, Fiji, Gabon, Guatemala, Guinea, Guinea-Bissau, Haiti, Honduras, Hungary, India, Indonesia, Israel, Jamaica, Jordan, Kenya, Laos, Madagascar, Malawi, Malaysia, Mali, Mauritania, Mexico, Mongolia, Morocco, Mozambique, Nepal, Nicaragua, Nigeria, Paraguay, Peru, Philippines, Romania, Senegal, Sri Lanka, Thailand, Togo, Tunisia, Turkey, Uganda, Uruguay, Venezuela, Zimbabwe.

<sup>4</sup> Note, in the empirical tests the Hausman test clearly favors the fixed effects model over the random effects and pooled estimators.

<sup>5</sup> In a simultaneous set-up it is important each equation has a causal interpretation (see Wooldridge 2003).

Przeworski 2000) find increased income does not necessarily bring about democracy but rather provides a defense against the failure of democracy. Note that GDP per capita is not included in the specification as it is highly associated with the income effect by which exports are hypothesized to increase democracy. It is thus an intervening variable<sup>6</sup>. Li and Reuveny (2003), and others, specify inflation as a factor positively influencing the level of democracy since unpredictable changes in average price levels cause social losses resulting in calls for accountability and political change. Inflation should thus have a positive impact on democracy in equation 1.1. Studies also find urbanization increases democracy by reducing costs of collective action due to the increasing contact between workers (Reuschmeyer et. al. 1992). To control for this effect a measure of population density is included in the specification which should have a positive effect on the polity measure. Finally, two political controls, government durability and type of political system, parliamentary versus presidential, are included in the specification. Durability measures the stability of the regime and should have a negative effect in equation 1.1 as many durable regimes in LDCs have resisted democratic reform. Parliamentary systems, however, have been found to better develop democracy compared to presidential systems (Stepan and Skach, 1993) so the effect here should be positive.

The second equation in the simultaneous set-up is derived following the gravity equation in international trade. The following general gravity model of international trade (see Krugman and Obstfeld (2005, p.11)) guides this specification:

$$T_{ij} = A \times Y_i^a \times Y_j^b / D_{ij}^c \quad (1.2)$$

In equation 1.2  $T_{ij}$  is the value of trade between country  $i$  and country  $j$  is measured as exports from country  $i$  to country  $j$ . This equation indicates the volume of trade between two countries

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<sup>6</sup> All regressions were performed including GDP per capita. None of the results on the statistical and practical significance of exports on democracy changed in any significant manner.

depends on the size of each country's GDP and the distance between the countries. Taking the logarithm of this equation yields the following

$$\ln(T_{ij}) = \ln(A) + a \ln(Y_i) + b \ln(Y_j) - c \ln(D_{ij}) \quad (1.3)$$

The estimation equation (1.4) is a modification of equation (1.3) as it considers the value of exports from country  $i$  to country  $j$  (the U.S.) and adds the polity measure (lagged two periods) to the equation. The second equation in the simultaneous set-up, Equation 1.4, is thus a gravity model modified to include the polity measure of democracy:

$$\begin{aligned} \text{Exports}(\log)_{it} = & \alpha_{it} + \theta_1 \text{Polity}_{it-2} + \theta_2 \text{GDP}(\log)_{it} \\ & + \theta_3 \text{GDP U.S.}(\log)_{it} + \theta_4 \text{Distance}(\log)_{it} + \gamma_i + \mu_{it} \end{aligned} \quad (1.4)$$

Now, to get a feel for the data, the descriptive statistics are displayed in Table 2 in which the

(TABLE 2)

average polity score is approximately .72 with a minimum of -10 in Jordan from 1980 to 1983 and a maximum of 10 in more than one country (e.g. Jamaica and Uruguay). Bilateral exports (log) to the U.S. averages about 5 with a minimum of -4.6, or about \$10,000, from Benin in 1985 and 1986 and also Togo in 1983, and a maximum of 11.90, or about \$147 billion, from Mexico in 2000. Variation in GDP per capita indicates a low of \$107 in Mozambique in 1986 and a maximum of \$17,709 in Israel in 2000. The political characteristics exhibit an average government durability of approximately 14 years with a minimum of 0 and a maximum of 65 years in Mongolia.

Next, measures of association capturing the correlation coefficients for equation 1.1 are presented in Table 3. The simple correlation between the polity measure and exports to the U.S. is

(TABLE 3)

positive and measured strongly at .42. The polity measure is positively correlated with GDP per capita at .30, with population density at .14 and with parliamentary system at .23. Next, Table 4

(TABLE 4)

shows the correlation coefficients for equation 1.2 indicating a similar positive correlation between exports and the two period lagged value of the polity measure at .42. The exporting country's GDP is highly correlated with their exports to the U.S. at .80 while the U.S.'s GDP is less correlated with exports at .10. Finally, distance has a negative, albeit weak, correlation with exports.

The regression results in Table 5 offer varying specifications moving left to right. A simple

(TABLE 5)

specification in model one indicates exports to the U.S. positively effect the exporting country's polity score such that a one-hundred percent increase in exports to the U.S. will push up the polity score by approximately 6 points. Model two adds a lagged dependent variable and exhibits a depressed effect of exports so that a one-hundred percent increase in exports to the U.S. brings up the polity score by about .71. The depressed effect due to the lagged dependent variable is not surprising and has long been noted (Achen, 2000;) adding the lagged dependent variable does, however, increase the R-squared from .18 in model one to .85 in model two.

Building on these two simple specifications, model three controls for GDP growth, inflation, and population density indicating increased exports yields approximately a .68 point increase in the polity score per one-hundred percent increase in exports. The results in model three indicate a statistically significant negative effect from GDP growth and a statistically significant and positive effect from inflation while the other covariates remain statistically insignificant. A political specification in model four shows an increased effect from exports on the polity score so that a one-hundred percent increase in exports to the U.S. increases the polity measure by approximately 1.5 points while a fifty percent increase in exports raises the polity score by .75. Note that in model 4 an additional year of government durability drops the polity score by about .12 while political regime type is negative but statistically insignificant. Model five combines models three and four indicating that an increase in exports by one-hundred percent adds 1.4 points to the polity score while an

increase in exports by fifty percent pushes up the polity score by about .70. Dropping the lagged dependent variable, in model six increases the effect of exports on the polity measure such that a fifty-percent increase in exports to the U.S. raises the polity score by approximately 2.9 points. Finally, as a robustness check, model 7 uses the common measure of trade openness, i.e., exports plus imports as a percentage of GDP, and exhibits that similar to models 1 through 5 globalization has a positive influence on the polity score such that a ten percent increase in trade openness increases the polity score increases by approximately .6 points.

To complement the results in Table 5, the measure of exports to the U.S. is replaced with an alternative measure of goods imports by the U.S. Goods imports by the U.S. will on average be labor intensive with income accruing to labor in the exporting country. As argued this should positively influence the level of democracy in the exporting country. The results using this alternative measure are presented in Table 5a. Models one through six all reveal similar

(TABLE 5a)

results compared to those in Table 5. Specifically, the impact of goods imports by the U.S. in the full specification, model five, indicates a fifty percent increase in imports by the U.S. yields approximately .70 more in democracy. Dropping the lagged dependent variable in model six displays a larger impact from imports so that a fifty percent increase in imports raises the polity score by about 1.35 points. The results for the other covariates in models five and six are generally consistent with the results in Table 5. Inflation, for example, is positive and statistically significant, population density and regime type are both positive while government durability has the expected negative and statistically significant impact on the level of democracy.

Next, the robustness of the democracy measure is also tested by employing the alternative measure of civil liberties from the Freedom House is employed as the alternative measure of democracy. The correlation between the measure of civil liberties and exports is -.37. A negative

correlation is expected since a value of 1 indicates the highest civil liberties score and 7 the lowest and thus the sign on exports should be negative to be consistent with theory. Table six indicates

(TABLE 6)

exports to the U.S. increase the level of civil liberties in the exporting country. In every specification the effect of exports is statistically significant at or below the 1% level of statistical significance adding to the robustness of the econometric results.

In Table 7, the polity measure is disaggregated into its component parts of democracy and

(TABLE 7)

autocracy. Substituting each individual measure for the polity measure as the dependent variable, it is expected the sign on exports should be positive if democracy is the dependent variable and negative if autocracy is the dependent variable. The results in Table 7 indicate in the first model exports have a positive, statistically significant impact on the level of democracy such that a fifty percent increase in exports increases the democracy measure by about .30. In the second model, employing autocracy as the dependent variable, the impact is slightly greater so that a fifty percent increase in exports decreases the autocracy score by .35. As a final check on the stability of the results Table 8 presents pooled regressions for the polity, democracy, and autocracy measures. All

(TABLE 8)

three regression show consistent results, although depressed effects which immediately suggests that the fixed effects matter. Comparing the estimated coefficient for the polity measure in model five of Table 5 indicates a value of 1.38 while in Table 8 the coefficient is only .08.

The regression results also indicate a much depressed effect from exports on democracy when exports are not instrumented. To test the joint causality between exports and democracy a Granger-causal analysis is conducted. The logic of the Granger analysis is straight-forward (see Ramanathan 2002; Gujarati 2003): If X Granger-causes Y but Y does not Granger cause X then

according to Granger-causality we should find past values of X including past values of Y help to predict future values of Y, but not that past values of Y including past values of X can be used to predict future values of X. Or, in other words, if X Granger-causes Y then knowing past values of X would allow us to forecast Y better than just knowing past values of Y. To conduct the Granger-causal analysis two equations are tested. They are as follows:

$$Democracy_t = \sum_{i=1}^n \lambda_i Exports_{t-i} + \sum_{j=1}^n \phi_j Democracy_{t-j} + \varepsilon_t \quad (1.5)$$

$$Exports_t = \sum_{i=1}^n \alpha_i Exports_{t-i} + \sum_{j=1}^n \beta_j Democracy_{t-j} + \nu_t \quad (1.6)$$

If it is true that past values of exports add information to the explanation of movements in democracy beyond the explanatory value of lagged values of democracy then it can be said exports Granger-cause democracy in equation 1.5. The same ideas hold in equation 1.6. If the results hold in both equations then there is evidence in favor of a simultaneous relationship between exports and democracy.

The test statistic for Granger-causality is an F-statistic (see Gujarati 2003, p.698). The null hypothesis is that the lagged values do not belong in the regression. Rejection of the null indicates evidence in favor of Granger-causality. Note that the lagged values are a matter of choice, but in this case five lagged values are studied. The results are reported in Table 9. The second column

(TABLE 9)

shows the results testing if democracy Granger-causes exports. For every year lag the null hypothesis is rejected supporting the idea that democracy Granger-causes exports. Likewise, the results testing if exports Granger-cause democracy are reported in the next column and, again, at every lagged value the null hypothesis is rejected in support of democracy Granger-causing exports. These results support the simultaneity between democracy and exports and provide further evidence in support of the argument that exports to the U.S. and democracy are jointly determined.

## Conclusion

The primary result of this paper is that globalization measured as increased exports to the U.S. increases the level of democracy in the exporting country. This result challenges existing research. There are several reasons why the results here differ with the findings in prior research.

First, and foremost, there is the issue of simultaneity between globalization and democracy. Second, the measure of globalization used here, bilateral exports, better captures the interconnections of globalization than does trade openness. Trade openness (i.e., exports plus imports)/GDP, the measure both Li and Reuveny (2003) and Rudra (2005) employ, is foremost a measure of the necessity of achieving economies-of-scale to overcome a limited domestic market. It is a measure of trade dependence. Figure 17 illustrates the problem with trade openness as a measure of globalization utilizing data for the United States, Iran, Jamaica, and Cuba. The data

(FIGURE 17)

in Figure 17 indicate the United States is the *least* globalized of these countries and even that Iran is more globalized than the U.S. over the 1990s. Increasing trade is a means out of the constraint of a small market, but does not indicate the intensity of international interconnections.

While the results in this paper reveal strong support for the hypothesis that increased exports increase the level of democracy in the exporting country we must be careful about how far we generalize from them. Exceptions, of course, exist including China and Singapore which have both seen increased exports to the U.S. with little or no political reform. Furthermore, many oil exporting countries, such as Saudi Arabia, export a large amount to the U.S. with no significant democratic change.

Further work can study these exceptional cases and continue to test the argument that exports to other developed countries, and economic unions such as the European Union, do contribute to an increase in the exporting country's level of democracy. The significance of this

agenda for future U.S. foreign policy and other areas of international relations is important and could prove to provide an alternative to top down models of democratic development.

## References

- Achen, Christopher. 2000. "Why Lagged Dependent Variables Can Suppress the Explanatory Power of Other Independent Variables." Paper Presented at the Annual Meeting of the Political Methodology Section of the American Political Science Association, UCLA, July 20-22.
- Anderson, Lisa. 1999. *Transitions to Democracy*. New York: Columbia University Press.
- Bermeo, Nancy. "Myths of Moderation" in *Transitions to Democracy* New York: Columbia University Press.
- Bhagwati, Jagdish. 2002. *Free Trade Today*. Princeton University Press.
- Boix, Carles. 2003. *Democracy and Redistribution*. Boston: Cambridge University Press.
- Boix, Carles and Susan C. Stokes. 2003. "Endogenous Democratization." *World Politics* 55(4):517-549.
- Brambor, Thomas, William Roberts Clark, and Matt Golder. 2006. "Understanding Interaction Models: Improving Empirical Analyses." *Political Analysis* 14(1): 63-83.
- Cook, Maria Lorena. 1995. "Mexican State-Labor Relations and the Political Implications of Free Trade." *Latin American Perspectives* 22(1):77-94.
- de Mesquita, Bruce Bueno, Alastair Smith, Randolph M. Siverson, James D. Morrow. 2003. *The Logic of Political Survival*. Boston: The MIT Press.
- Diamond, Larry. 1999. *Developing Democracy*. Baltimore: The Johns Hopkins University Press.
- Epstein, David L., Robert Bates, Jack Goldstone, Ida Kristennsen, and Sharyn O'Halloran. 2006. "Democratic Transitions." *American Journal of Political Science* 50(3): 551-569.
- Gujarati, Damodar N. 2003. *Basic Econometrics*. Boston: McGraw-Hill Publishers.
- Huntington, Samuel. 1999. *The Third Wave*. Norman, Ok.: University of Oklahoma Press.
- Kono, Daniel Y. 2006. "Optimal Obfuscation: Democracy and Trade Policy Transparency." *American Political Science Review* 100(3): 369-384.
- Krugman, Paul R. and Maurice Obstfeld. 2006. *International Economics: Theory and Policy*. New York: Pearson-Addison Wesley.
- Li, Quan and Rafael Reuveny. 2003. "Economic Globalization and Democracy: An Empirical Analysis." *British Journal of Political Science* 33(1): 29-54.
- Lipset, Seymour M. 1959. "Some Social Requisites of Democracy: Economic Development and Political Legitimacy." *The American Political Science Review* 53(1):69-105.

- Mansfield, Edward D., Helen V. Milner, and B. Peter Rosendorff. 2000. "Free to Trade: Democracies and International Trade Negotiations" *American Political Science Review* 94: 305-321.
- Maxfield, Sylvia. 2000. "Capital Mobility and Democratic Stability: Comparing East Asia and Latin America." *Journal of Democracy* 11(4): 95-106.
- Middlebrook, Kevin J. 1986. *Political Liberalization in an Authoritarian Regime: The Case of Mexico in Transitions from Authoritarian Rule* edited by Guillermo O'Donnell, Philippe C. Schmitter, and Laurence Whitehead. Baltimore: The Johns Hopkins University Press.
- Milner, Helen. 2005. "Why the Move to Free Trade? Democracy and Trade Policy in the Developing Countries." *International Organization* 59(1):157-193.
- Piano, Aili and Arch Puddington. 2005. *Freedom In The World*. New York: Rowman & Littlefield Publishers.
- Preston, Julia and Samuel Dillon. 2004. *Opening Mexico*. New York: Farrar, Straus and Giroux.
- Przeworski, Adam, Michael E. Alvarez, José Antonio Cheibub, and Fernando Limongi. 2000. *Democracy and Development* Cambridge: Cambridge University Press. Publishers.
- Ramanathan, Ramu. 2002. *Introductory Econometrics with Applications*. Harcourt College Publishers.
- Rodrik, Dani. 2003. *In Search of Prosperity*. Princeton University Press.
- Rogowski, Ronald. 1987. "Trade and the variety of democratic institutions." *International Organization* 41(2): 203-223.
- Rosendorff, B. Peter. 2001. "Choosing Democracy." *Economics and Politics* 13(1):1-29.
- Rueschmeyer, Dietrich, John D. Stephens, and Evelyne Huber Stephens. 1992. *Capitalist Development and Democracy* Chicago: The University of Chicago Press.
- Sachs, Jeffrey D. 2005. *The End of Poverty*. New York: The Penguin Press.
- Suchlicki, Jaime. 2001. *Mexico: From Montezuma to the Fall of the PRI*. Potomac Books.
- Vietor, Richard H.K. 2005. *Globalization and Growth*. Thomson South-Western.
- Wooldridge, Jeffrey M. 2003. *Introductory Econometrics*. Thomson-Southwestern.

**Table 1. Variable Definitions and Sources**

Variable	Definition	Source
Wage data for mfg. work in Mexico, South Korea, and the Philippines	Various measures of wages in manufacturing industries.	International Labor Organization.
U.S. imports of woven jute fabric	Imports of jute fabric measured at customs value (dollars). According to data documentation: "Customs value does not include freight, and is the value on which duties are assessed. It is intended to serve as an arm's-length transactions value for the commodity. It is similar to the FAS (free alongside ship) value, which was collected by Census prior to 1982. For years up until 1988, imports to the United States at a disaggregate level were measured according to the Tariff Schedule of the United States Annotated (TSUSA) classification. These datafiles contain the U.S. import data according to TSUSA number, distinguished by source country, and including both quantitative information about imports and descriptive information about each commodity."	Feenstra, Robert. Available on-line at the Center for International Data at U.C. Davis.
Polity	The Polity score is computed by subtracting the Autocracy score from the democracy score. The resulting unified polity scale ranges from +10 (strongly democratic) to -10 (strongly autocratic).	Polity IV data set
Civil Liberties	Freedom House uses four categories to define and measure civil liberties. Freedom of expression and belief, associational and organizational rights, rule of law, and personal autonomy and individual rights are measured from 1 being the highest level of civil liberties and 7 the lowest. States that score a 1 have an equitable rule of law and general economic freedom and equality of opportunity. Conversely states that score a 7 have virtually no freedom and people live with the fear of serious repression (see Pion et. al. 2005, p.779)	Freedom House
Exports (log)	Exports (f.o.b.) from partner country to source country. Valued in millions of U.S. dollars. Free on board means the seller's obligation to deliver is fulfilled when the goods have passed over the ship's rail at the named port of shipment. This means that the buyer has to bear all costs and risks of loss of or damage to the goods from that point.	IMF: <i>Direction of Trade Statistics</i>
Trade Dependence	Trade is the sum of exports and imports of goods and services measured as a share of gross domestic product.	World Bank: <i>World Development Indicators 2004</i>
GDP per capita	GDP per capita is gross domestic product divided by midyear population. GDP is the sum of gross value added by all resident producers in the economy plus any product taxes and minus any subsidies not included in the value of the products.	World Bank: <i>World Development Indicators 2004</i>

	It is calculated without making deductions for depreciation of fabricated assets or for depletion and degradation of natural resources. Data are in constant U.S. dollars.	
GDP Growth	Annual percentage growth rate of GDP at market prices based on constant local currency. Aggregates are based on constant 1995 U.S. dollars. GDP is the sum of gross value added by all resident producers in the economy plus any product taxes and minus any subsidies not included in the value of the products. It is calculated without making deductions for depreciation of fabricated assets or for depletion and degradation of natural resources.	World Bank: <i>World Development Indicators 2004</i>
GDP	GDP at purchaser's prices is the sum of gross value added by all resident producers in the economy plus any product taxes and minus any subsidies not included in the value of the products. It is calculated without making deductions for depreciation of fabricated assets or for depletion and degradation of natural resources. Data are in constant 1995 U.S. dollars. Dollar figures for GDP are converted from domestic currencies using 1995 official exchange rates. For a few countries where the official exchange rate does not reflect the rate effectively applied to actual foreign exchange transactions, an alternative conversion factor is used.	World Bank: <i>World Development Indicators 2004</i>
Distance	Simple distance calculated using the circle formula, which uses latitudes and longitudes of the most important city (in terms of population) or of its official capital.	CEEPI (Centre D'Etudes Prospectives Et D'Informations Internationales)
Inflation	Inflation as measured by the annual growth rate of the GDP implicit deflator shows the rate of price change in the economy as a whole. The GDP implicit deflator is the ratio of GDP in current local currency to GDP in constant local currency.	World Bank: <i>World Development Indicators 2004</i>
Population Density	Population density is midyear population divided by land area in square kilometers. Population is based on the de facto definition of population, which counts all residents regardless of legal status or citizenship--except for refugees not permanently settled in the country of asylum, who are generally considered part of the population of their country of origin. Land area is a country's total area, excluding area under inland water bodies, national claims to continental shelf, and exclusive economic zones. In most cases the definition of inland water bodies includes major rivers and lakes.	World Bank: <i>World Development Indicators 2004</i>
Parliamentary System	Systems with unelected executives (those scoring a 2 or 3 on the Executive Index of Political Competitiveness – to be defined below) get a 0. Systems with presidents who are elected directly or by an electoral college (whose <i>only</i> function is to elect the president), in cases where there is no prime	Database of Political Institutions

	<p>minister, also receive a 0. In systems with both a prime minister and a president, we consider the following factors to categorize the system:</p> <p>a) Veto power: president can veto legislation and the parliament needs a supermajority to override the veto.</p> <p>b) Appoint prime minister: president can appoint <i>and</i> dismiss prime minister and / or other ministers.</p> <p>c) Dissolve parliament: president can dissolve parliament and call for new elections.</p> <p>d) Mentioning in sources: If the sources mention the president more often than the PM then this serves as an additional indicator to call the system presidential (Romania, Kyrgyzstan, Estonia, Yugoslavia).</p> <p>The system is presidential if (a) is true, or if (b) and (c) are true. If no information or ambiguous information on (a), (b), (c), then (d). Consult Appendix for specific country examples.</p> <p>Countries in which the legislature elects the chief executive are parliamentary (2), with the following exception: if that assembly or group cannot easily recall him (if they need a 2/3 vote to impeach, <b>or</b> must dissolve themselves while forcing him out) then the system gets a 1.</p>	
Durability	The number of years since the most recent regime change (defined by a three-point change in the Polity score over a period of three years or less) or the end of transition period defined by the lack of stable political institutions.	Polity IV data set

**Table 2. Descriptive Statistics**

<i>Variable</i>	<i>Obs</i>	<i>Mean</i>	<i>Std. Dev.</i>	<i>Minimum</i>	<i>Maximum</i>
Polity score	1,066	.72	6.83	-10	10
Polity score (t-1)	1,016	.53	6.86	-10	10
Polity score (t-2)	966	.34	6.88	-10	10
Exports to the U.S. (log)	1,052	5.07	2.82	-4.61	11.90
GDP per capita	1,079	1,710	2,266	107	17,709
GDP Growth	1,071	2.97	4.96	-28.09	19.01
Inflation	1,070	81.59	668	-23.48	13,611
Population Density	1,092	88.68	129	1.06	1,006
Government Durability	1,092	14.07	13.48	0	65
Parliamentary System	1,092	.54	.81	0	2
GDP (log)	1,079	23.11	1.73	18.71	27.39
GDP U.S. (log)	1,092	29.49	.19	29.19	29.82
Distance (log)	1,092	8.95	.49	7.81	9.69
Trade openness	1,069	61.71	30.81	9.11	229

**Table 3. Correlation Coefficients for Equation 1.1**

	Polity	Exports (log)	GDPpc	GDPgr	Infl.	Pop. Dens.	Durable	System	Polity (t-1)
Polity	1.00								
Exports (log)	.42	1.00							
GDPpc	.30	.40	1.00						
GDPgr	.01	.05	.02	1.00					
Infl.	.06	-.05	-.007	-.15	1.00				
Pop. Dens.	.14	.20	.01	.01	-.05	1.00			
Durable	-.16	.03	.22	.10	-.07	.09	1.00		
System	.23	.14	.15	.10	-.05	.26	.07	1.00	
Polity (t-1)	.96	.42	.30	.03	.05	.14	-.12	.24	1.00

**Table 4. Correlation coefficients for equation 1.2**

	Exports (log)	Polity (t-2)	GDP (log)	GDP (log)	U.S. Distance
Exports (log)	1.00				
Polity (t-2)	.42	1.00			
GDP (log)	.80	.32	1.00		
GDP U.S. (log)	.10	.35	.05	1.00	
Distance	-.03	-.19	.01	-.03	1.00

**Table 5. Regression results of bilateral exports to the United States on democracy in the source country**

	1	2	3	4	5	6	7
Exports (log)	5.94 <sup>a</sup> (.49)	.71 <sup>a</sup> (.20)	.68 <sup>a</sup> (.26)	1.56 <sup>a</sup> (.23)	1.38 <sup>a</sup> (.30)	5.80 <sup>a</sup> (.60)	
GDP Growth			-.03 <sup>c</sup> (.015)		.0003 (.016)	.06 (.04)	-.002 (.015)
Inflation			.0002 <sup>c</sup> (.0001)		.0004 <sup>a</sup> (.0001)	.002 <sup>a</sup> (.0003)	.000003 (.0001)
Population Density			.005 (.005)		.009 <sup>c</sup> (.006)	-.013 (.014)	.02 <sup>a</sup> (.004)
Government Durability				-.12 <sup>a</sup> (.01)	-.12 <sup>a</sup> (.01)	-.26 <sup>a</sup> (.02)	-.11 <sup>a</sup> (.009)
Parliamentary System (2=yes)				-.05 (.23)	-.13 (.22)	1.06 <sup>c</sup> (.58)	-.31 (.21)
Polity <sub>t-1</sub>		.84 <sup>a</sup> (.02)	.84 <sup>a</sup> (.02)	.67 <sup>a</sup> (.03)	.68 <sup>a</sup> (.02)		.70 <sup>a</sup> (.02)
Constant	-29.17 <sup>a</sup> (2.51)	-3.20 <sup>a</sup> (1.02)	-3.42 <sup>a</sup> (1.09)	-5.65 <sup>a</sup> (1.12)	-5.56 <sup>a</sup> (1.16)	-24.27 <sup>a</sup> (2.46)	-3.37 <sup>a</sup> (.75)
Trade Openness							.06 <sup>a</sup> (.01)
Observations	918	907	904	907	904	915	918
Wald Statistic	185 <sup>a</sup>	3,713 <sup>a</sup>	3,762 <sup>a</sup>	3,349 <sup>a</sup>	3,729 <sup>a</sup>	423 <sup>a</sup>	4,129 <sup>a</sup>
R-squared	.18	.85	.85	.69	.71	.21	.71
J Statistic		5.00 <sup>^</sup>	4.8 <sup>^</sup>	2.81 <sup>^</sup>	3.52 <sup>^</sup>	3.53 <sup>^</sup>	13 <sup>^</sup>

Notes. a=p<.01 b=p<.05 c=p<.10. ^ indicates the null hypothesis for the test of over-identifying restrictions cannot be rejected at the 10% level of significance. The first stage regression of Exports (log) on Polity, GDP (log), GDP\_U.S.(log), and Distance (log) has a F-statistic of 509<sup>a</sup>, an R-squared of .67 and all covariates, except U.S. GDP, are statistically significant with the appropriate signs.

**Table 5a. Regression results of goods imports to the United States on democracy in the source country**

	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>
Imports	3.10 <sup>a</sup>	.57 <sup>a</sup>	.38	1.66 <sup>a</sup>	1.48 <sup>a</sup>	3.73 <sup>a</sup>
of goods (log)	(.32)	(.23)	(.29)	(.23)	(.28)	(.39)
GDP Growth			-.03 <sup>c</sup>		-.026	-.002
			(.02)		(.018)	(.03)
Inflation			.0002		.0005 <sup>b</sup>	.001 <sup>a</sup>
			(.0002)		(.0002)	(.0003)
Population Density			.01		.01 <sup>b</sup>	.013
			(.006)		(.006)	(.009)
Government				-.16 <sup>a</sup>	-.17 <sup>a</sup>	-.28 <sup>a</sup>
Durability				(.01)	(.01)	(.02)
Parliamentary System				.55 <sup>a</sup>	.38	1.06 <sup>c</sup>
(2=yes)				(.26)	(.27)	(.41)
Polity <sub>t-1</sub>		.71 <sup>a</sup>	.70 <sup>a</sup>	.55 <sup>a</sup>	.54 <sup>a</sup>	
		(.03)	(.03)	(.03)	(.03)	
Constant	-15.45 <sup>a</sup>	-2.23 <sup>c</sup>	-2.01	-6.54 <sup>a</sup>	-6.43 <sup>a</sup>	-17.57 <sup>a</sup>
	(1.97)	(1.37)	(1.42)	(1.33)	(1.38)	(1.84)
Trade Openness						
Observations	618	610	610	610	610	618
Wald Statistic	995 <sup>a</sup>	3,208 <sup>a</sup>	3,257 <sup>a</sup>	3,798 <sup>a</sup>	4,001 <sup>a</sup>	1,617 <sup>a</sup>
R-squared	.09	.83	.78	.54	.51	.10
J Statistic		^	^	^	^	^

Notes. a=p<.01 b=p<.05 c=p<.10. ^ indicates the null hypothesis for the test of over-identifying restrictions cannot be rejected at the 10% level of significance. The first stage regression of Exports (log) on Polity, GDP (log), GDP\_U.S.(log), and Distance (log) has a F-statistic of 345<sup>a</sup>, an R-squared of .70 and all covariates, except U.S. GDP, are statistically significant with the appropriate signs.

**Table 6. Regression results of bilateral exports to the United States on democracy in the source country. Alternative measure of democracy: Civil Liberty**

	1	2	3	4	5	6	7
Exports (log)	-.86 <sup>a</sup> (.09)	-.13 <sup>a</sup> (.05)	-.17 <sup>a</sup> (.07)	-.22 <sup>a</sup> (.05)	-.23 <sup>a</sup> (.06)	-.94 <sup>a</sup> (.12)	
GDP Growth			.006 (.004)		.0002 (.004)	-.01 (.008)	.001 (.004)
Inflation			-.00007 <sup>c</sup> (.00004)		-.00008 <sup>b</sup> (.0003)	-.0003 <sup>a</sup> (.00007)	-.000008 (.00003)
Population Density			.0008 (.001)		.0002 <sup>c</sup> (.001)	.007 (.003)	-.001 <sup>a</sup> (.001)
Government Durability				.025 <sup>a</sup> (.002)	.025 <sup>a</sup> (.002)	.057 <sup>a</sup> (.004)	.025 <sup>a</sup> (.002)
Parliamentary System (2=yes)				.04 (.05)	.03 (.05)	-.14 (.11)	.06 (.06)
Civil Liberty <sub>t-1</sub>		.80 <sup>a</sup> (.02)	.79 <sup>a</sup> (.02)	.67 <sup>a</sup> (.02)	.66 <sup>a</sup> (.02)		.65 <sup>a</sup> (.02)
Constant	8.58 <sup>a</sup> (.48)	1.45 <sup>a</sup> (.29)	1.56 <sup>a</sup> (.32)	2.11 <sup>a</sup> (.28)	2.17 <sup>a</sup> (.31)	7.62 <sup>a</sup> (.48)	2.09 <sup>a</sup> (.25)
Trade Openness							-.015 <sup>a</sup> (.004)
Observations	959	959	956	959	956	956	969
Wald Statistic	12,013 <sup>a</sup>	55,766 <sup>a</sup>	54,283 <sup>a</sup>	58,938 <sup>a</sup>	57,965 <sup>a</sup>	14,645 <sup>a</sup>	57,547 <sup>a</sup>
R-squared	.13	.79	.76	.70	.69	.16	.69
J Statistic		5.35 <sup>^</sup>	5.64 <sup>^</sup>	7.38 <sup>^</sup>	7.07 <sup>^</sup>	42.06 <sup>^</sup>	3.00 <sup>^</sup>

Notes. a=p<.01 b=p<.05 c=p<.10. ^ indicates the null hypothesis for the test of over-identifying restrictions cannot be rejected at the 10% level of significance. The first stage regression of Exports (log) on Civil Liberty, GDP (log), GDP\_U.S.(log), and Distance (log) has a F-statistic of 524<sup>a</sup>, an R-squared of .67 and all covariates, except U.S. GDP, are statistically significant with the appropriate signs.

**Table 7. Regression results of exports to the United States on democracy in the source country**

	1	2	3	4	5	6	7
Exports (log)	5.94 <sup>a</sup>	.71 <sup>a</sup>	.68 <sup>a</sup>	1.56 <sup>a</sup>	1.38 <sup>a</sup>	5.80 <sup>a</sup>	
	(.49)	(.20)	(.26)	(.23)	(.30)	(.60)	
GDP Growth			-.03 <sup>c</sup>		.0003	.06	-.002
			(.015)		(.016)	(.04)	(.015)
Inflation			.0002 <sup>c</sup>		.0004 <sup>a</sup>	.002 <sup>a</sup>	.000003
			(.0001)		(.0001)	(.0003)	(.0001)
Population			.005		.009 <sup>c</sup>	-.013	.02 <sup>a</sup>
Density			(.005)		(.006)	(.014)	(.004)
Government				-.12 <sup>a</sup>	-.12 <sup>a</sup>	-.26 <sup>a</sup>	-.11 <sup>a</sup>
Durability				(.01)	(.01)	(.02)	(.009)
Parliamentary				-.05	-.13	1.06 <sup>c</sup>	-.31
System (2=yes)				(.23)	(.22)	(.58)	(.21)
Polity <sub>t-1</sub>		.84 <sup>a</sup>	.84 <sup>a</sup>	.67 <sup>a</sup>	.68 <sup>a</sup>		.70 <sup>a</sup>
		(.02)	(.02)	(.03)	(.02)		(.02)
Constant	-29.17 <sup>a</sup>	-3.20 <sup>a</sup>	-3.42 <sup>a</sup>	-5.65 <sup>a</sup>	-5.56 <sup>a</sup>	-24.27 <sup>a</sup>	-3.37 <sup>a</sup>
	(2.51)	(1.02)	(1.09)	(1.12)	(1.16)	(2.46)	(.75)
Trade Openness							.06 <sup>a</sup>
							(.01)
Observations	918	907	904	907	904	915	918
Wald Statistic	185 <sup>a</sup>	3,713 <sup>a</sup>	3,762 <sup>a</sup>	3,349 <sup>a</sup>	3,729 <sup>a</sup>	423 <sup>a</sup>	4,129 <sup>a</sup>
R-squared	.18	.85	.85	.69	.71	.21	.71
J Statistic		5.00 <sup>^</sup>	4.8 <sup>^</sup>	2.81 <sup>^</sup>	3.52 <sup>^</sup>	3.53 <sup>^</sup>	13 <sup>^</sup>

Notes. a=p<.01 b=p<.05 c=p<.10. ^ indicates the null hypothesis for the test of over-identifying restrictions cannot be rejected at the 10% level of significance. The first stage regression of Exports (log) on Polity, GDP (log), GDP\_U.S.(log), and Distance (log) has a F-statistic of 509<sup>a</sup>, an R-squared of .67 and all covariates, except U.S. GDP, are statistically significant with the appropriate signs.

**Table 8. Regression results of bilateral exports to the United States on democracy and autocracy in the source country**

	<b>Democracy</b>	<b>Autocracy</b>
Exports (log)	.62 <sup>a</sup> (.15)	-.72 <sup>a</sup> (.13)
GDP Growth	.0008 (.008)	.0007 (.008)
Inflation	.0002 <sup>a</sup> (.00007)	-.0002 <sup>a</sup> (.00007)
Population	.004	-.006 <sup>b</sup>
Density	(.003)	(.003)
Government	-.05 <sup>a</sup>	.07 <sup>a</sup>
Durability	(.005)	(.005)
Parliamentary	-.08	.07
System(2=yes)	(.12)	(.11)
Democracy <sub>t-2</sub>	.72 <sup>a</sup> (.02)	
Autocracy <sub>t-2</sub>		.64 <sup>a</sup> (.02)
Constant	-1.50 <sup>a</sup> (.57)	4.20 <sup>a</sup> (.61)
Observations	904	904
Wald Statistic	15,106 <sup>a</sup>	10,270 <sup>a</sup>
R-squared	.74	.66
J Statistic	4.70 <sup>^</sup>	1.26 <sup>^</sup>

Notes. a=p<.01 b=p<.05 c=p<.10. ^ indicates the null hypothesis for the test of over-identifying restrictions cannot be rejected at the 10% level of significance.

**Table 9. Pooled regression results of bilateral exports to the United States on democracy and autocracy in the source country.**

	<b>Polity</b>	<b>Democracy</b>	<b>Autocracy</b>
Exports (log)	.08 <sup>a</sup> (.03)	.04 <sup>a</sup> (.02)	-.04 <sup>a</sup> (.02)
Observations	904	904	904
F Statistic	2,245 <sup>a</sup>	2,082 <sup>a</sup>	2,197 <sup>a</sup>
R-squared	.91	.91	.91
J Statistic	9 <sup>^</sup>	9 <sup>^</sup>	13.7 <sup>^</sup>

Notes. a=p<.01 b=p<.05 c=p<.10. ^ indicates the null hypothesis for the test of over-identifying restrictions cannot be rejected at the 10% level of significance. Robust standard errors in parentheses. Other covariates not reported. Full specification is the same as in model 5 of Table 5.

**Table 10. Granger Causality Analysis. Null hypothesis equals no causation**

	Democracy Granger Causes Exports	Exports Granger Causes Democracy
Number of year lags		
t-1	F=50 Reject Null	F=14 Reject Null
t-2	F=16 Reject Null	F=16 Reject Null
t-3	F=19 Reject Null	F=17 Reject Null
t-4	F=18 Reject Null	F=27 Reject Null
t-5	F=24 Reject Null	F=10 Reject Null

Notes. All F tests are significant at or below the 1% level of statistical significance.

Figure 1. Number of electoral democracies and world manufactured exports, 1989 to 1999.  
 Sources: Data on electoral democracies is (Freedom House *Freedom in the World* 2006)  
 and world manufactured exports (World Trade Organization)

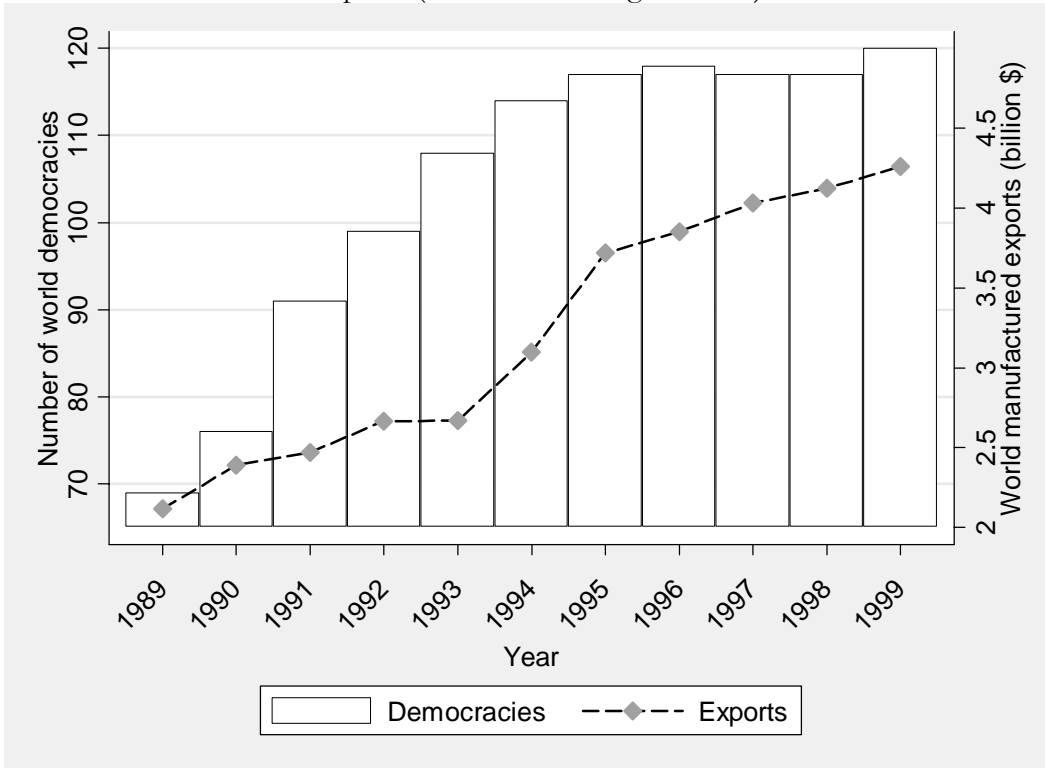


Figure 2. Exports from Poland to the U.S. and Poland's Polity score

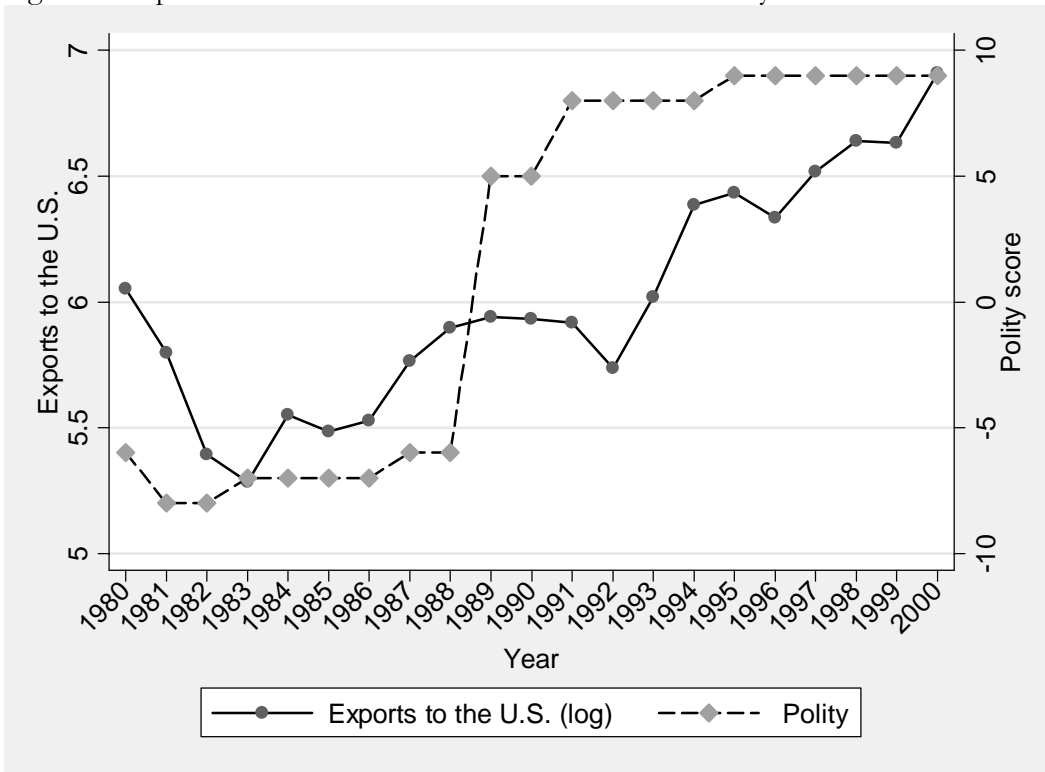


Figure 3. Exports from Hungary to the U.S. and Hungary's Polity score



Figure 4. Exports from Turkey to the U.S. and Turkey's Polity score

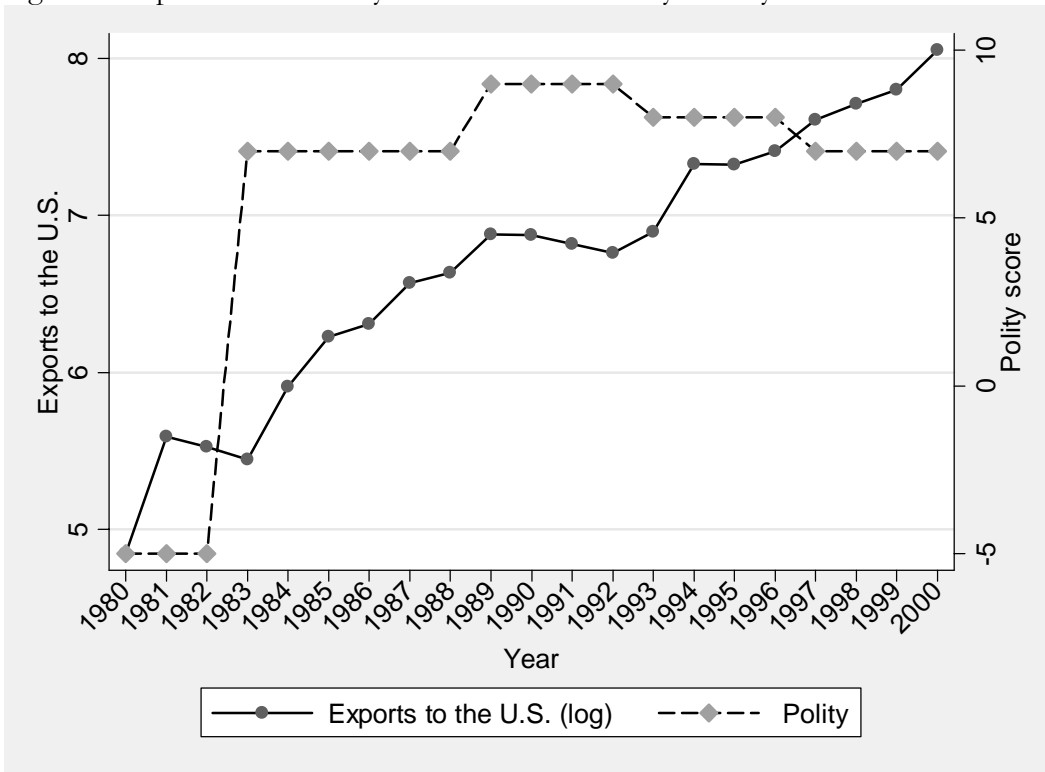


Figure 5. Exports from Nigeria to the U.S. and Nigeria's Polity score

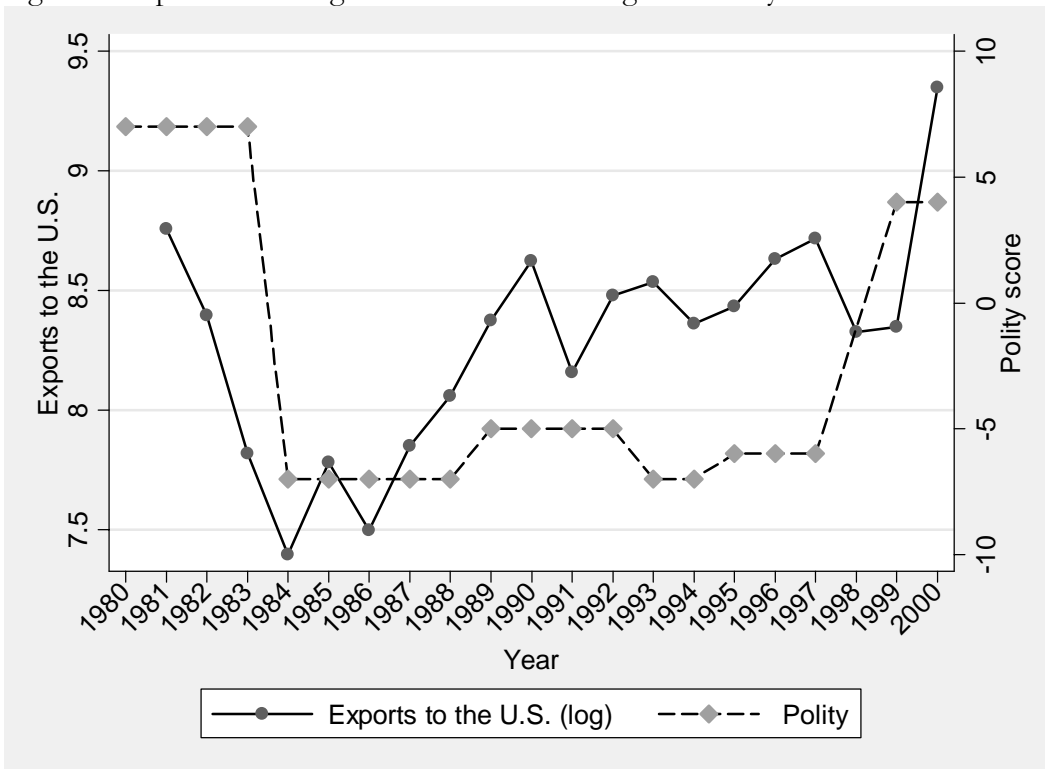


Figure 6. Wages in Mexican Manufacturing (ILO: ISIC Rev.3-D) and Exports from Mexico to the U.S.

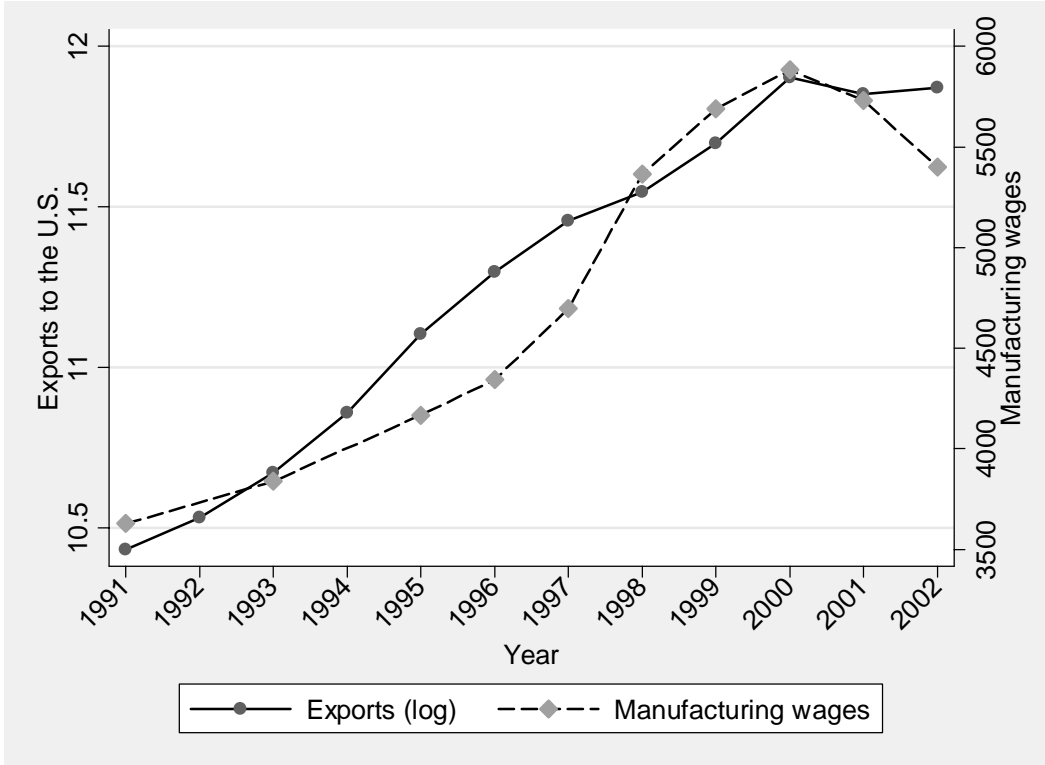


Figure 7. Wages in Mexican Manufacturing of wearing apparel (ILO: ISIC Rev.3-D #18) and Exports from Mexico to the U.S.

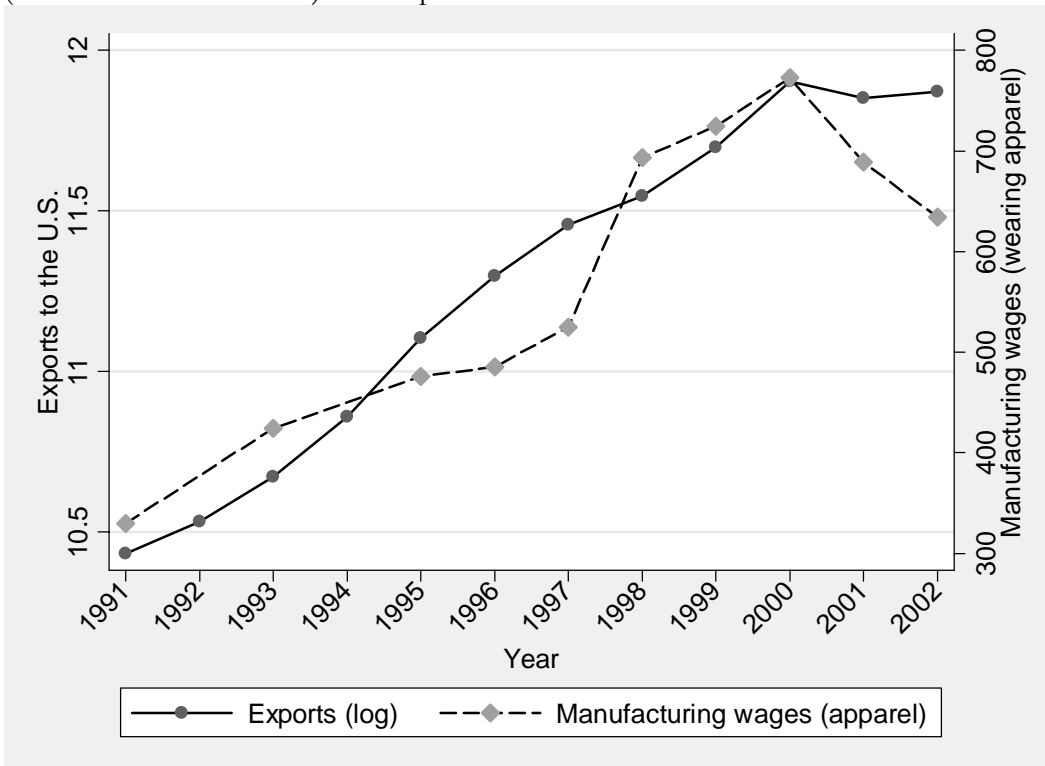


Figure 8. Wages in Mexican Manufacturing of electrical machinery (ILO: ISIC Rev.3-D #31) and Exports from Mexico to the U.S.

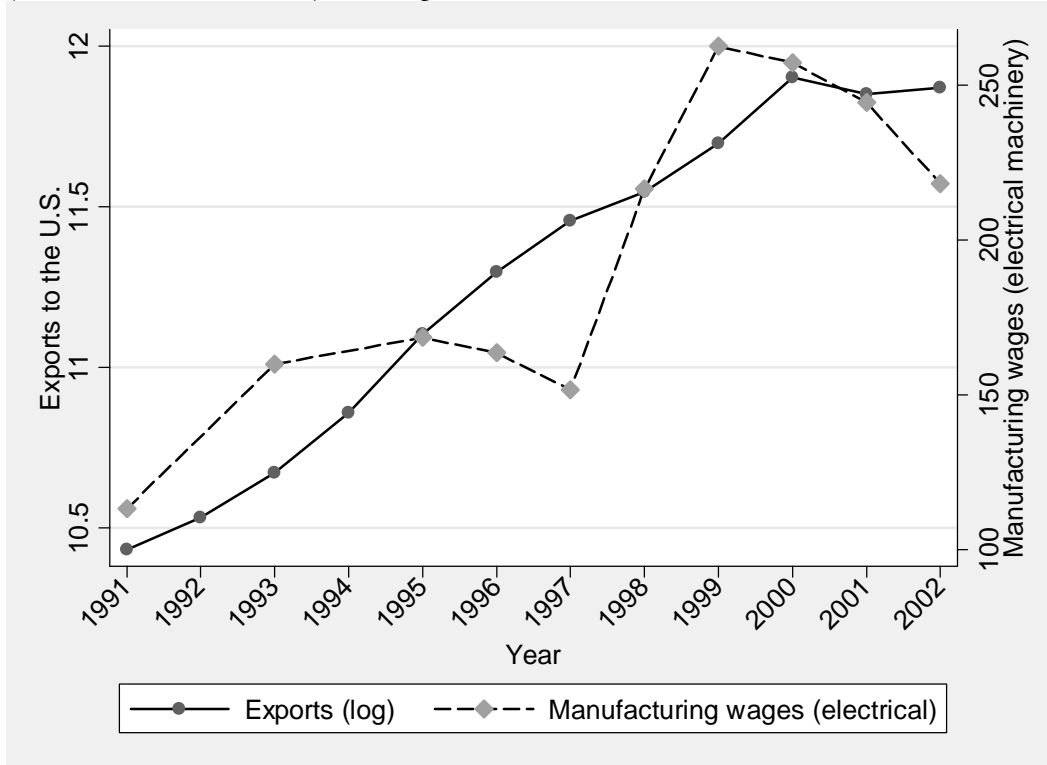


Figure 9. Wages in Mexican Manufacturing of motor vehicles (ILO: ISIC Rev.3-D #34) and Exports from Mexico to the U.S.

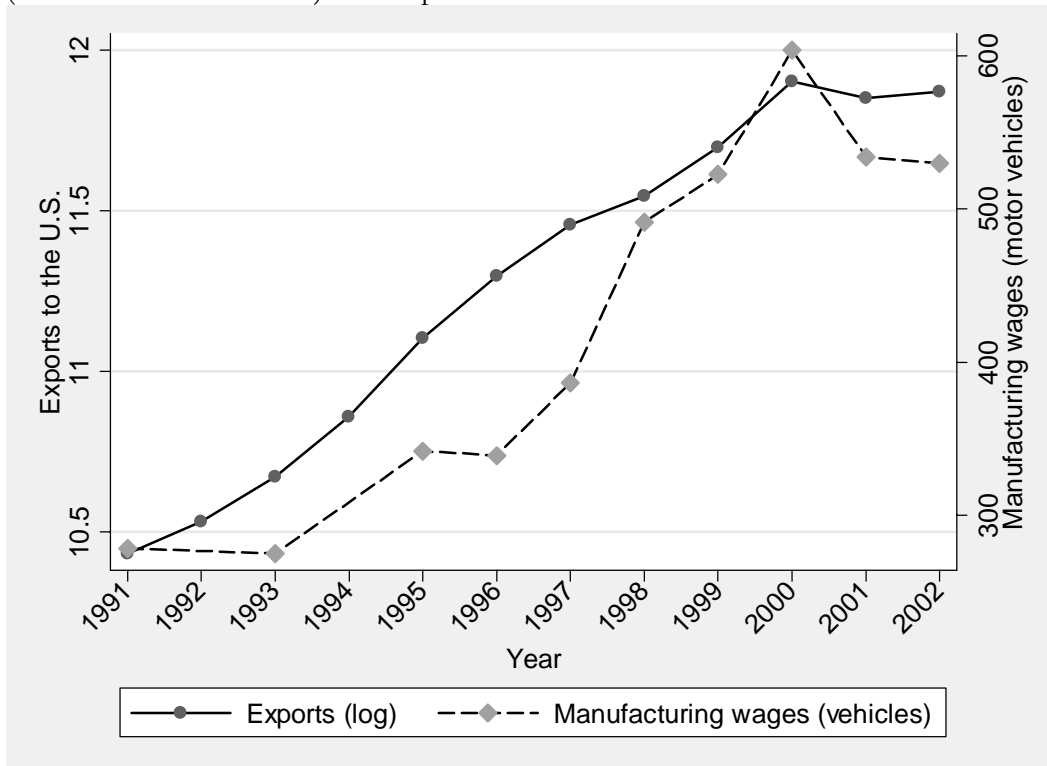


Figure 10. Exports from Mexico to the U.S. and Mexico's Polity score

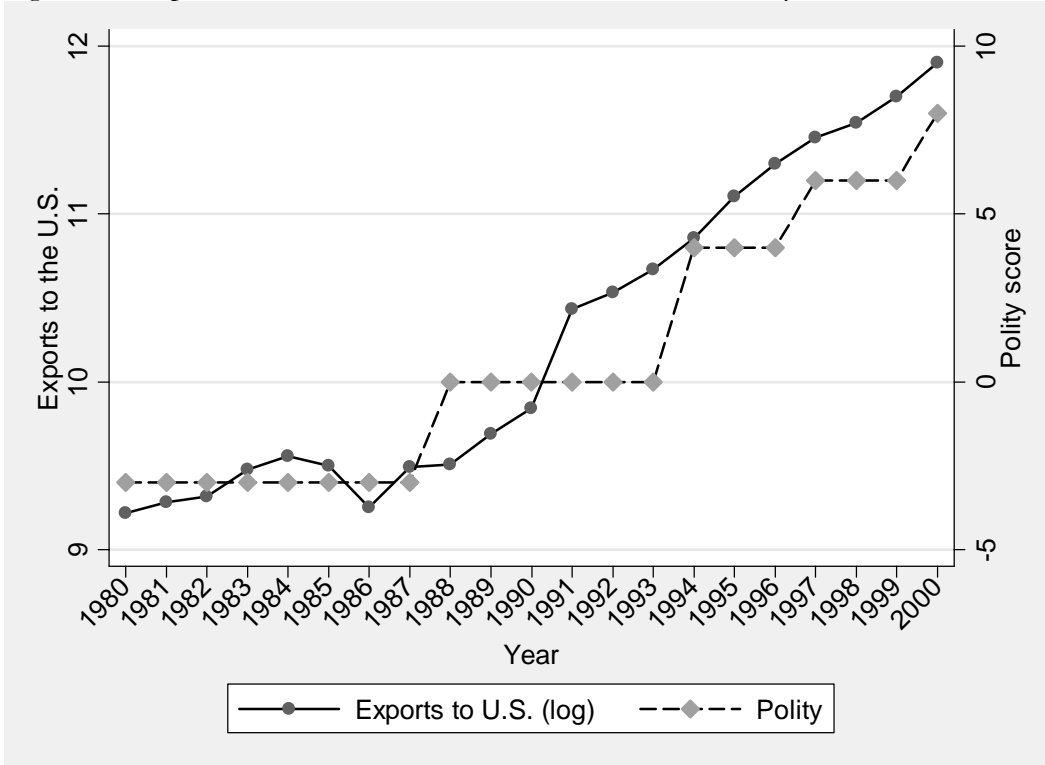


Figure 11. Mexico's Trade Openness and Polity score: 1980-2000

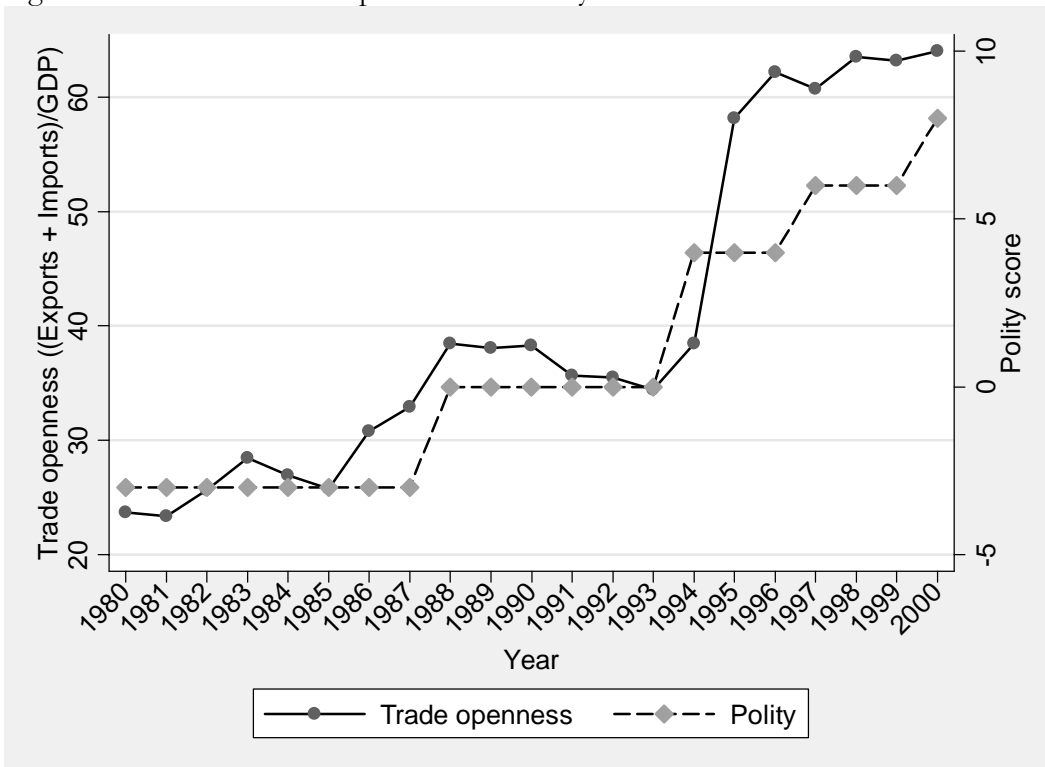


Figure 12. Manufacturing wages in South Korea (ISIC-Rev.2, 1968, won per month) and Exports to the U.S

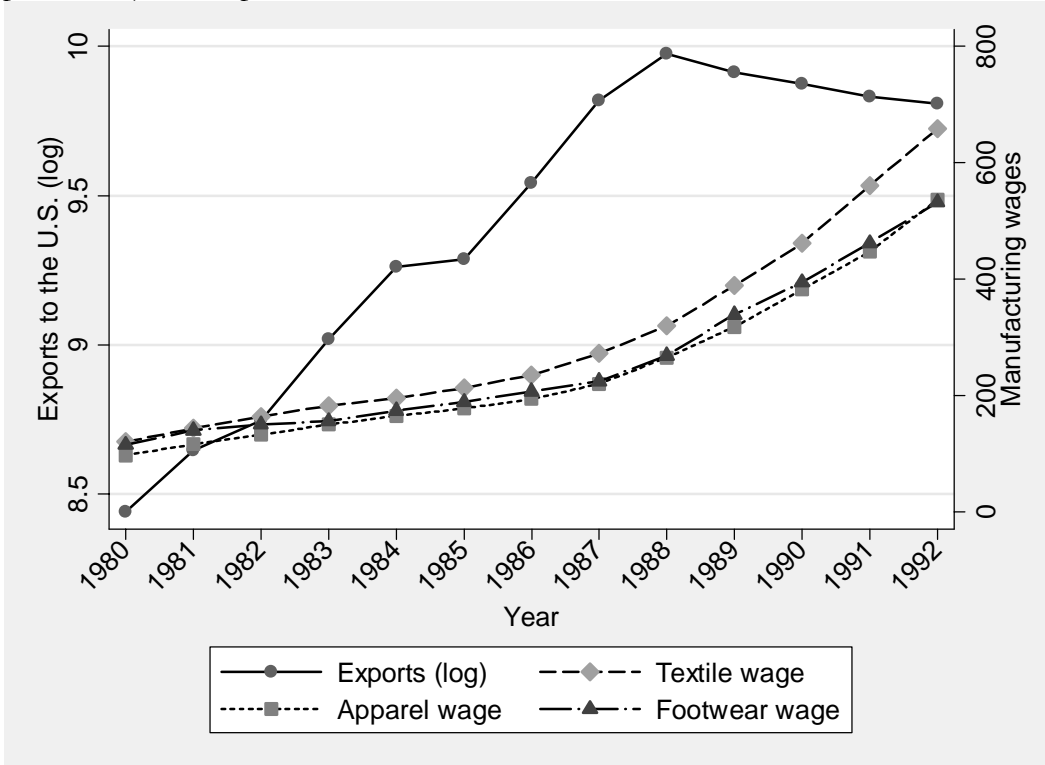


Figure 13. Exports from South Korea to the U.S. and South Korea's Polity score

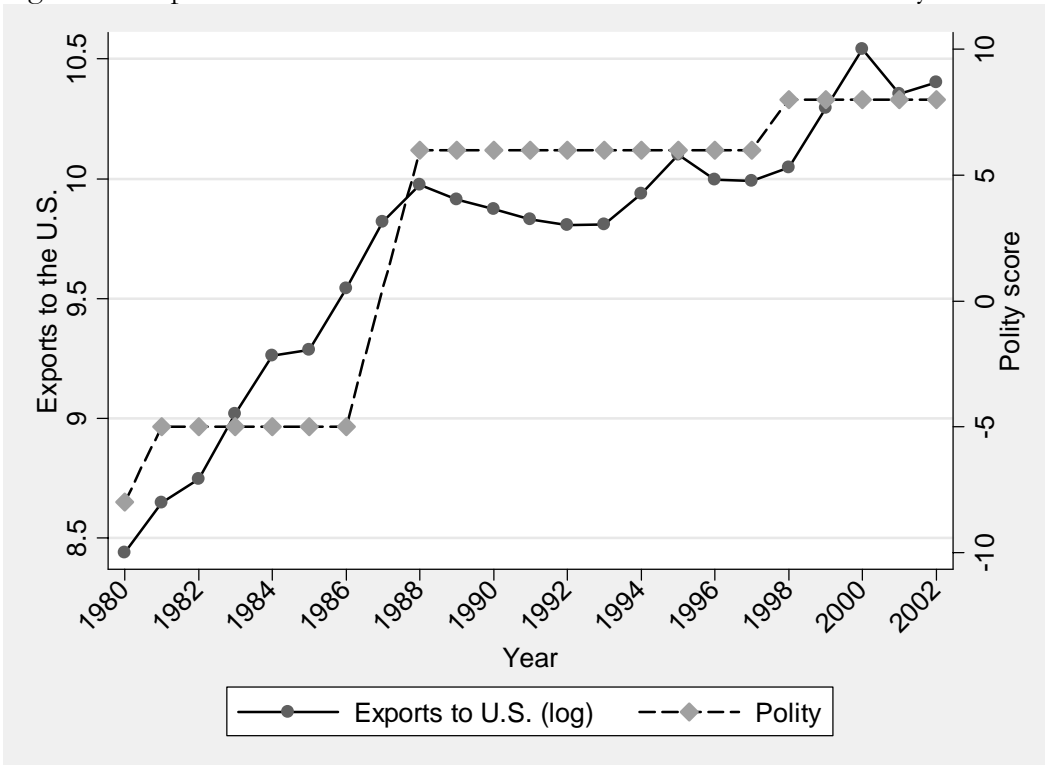


Figure 14. Manufacturing wages in the Philippines (ISIC-Rev.2, 1968, pesos per month) and Exports to the U.S

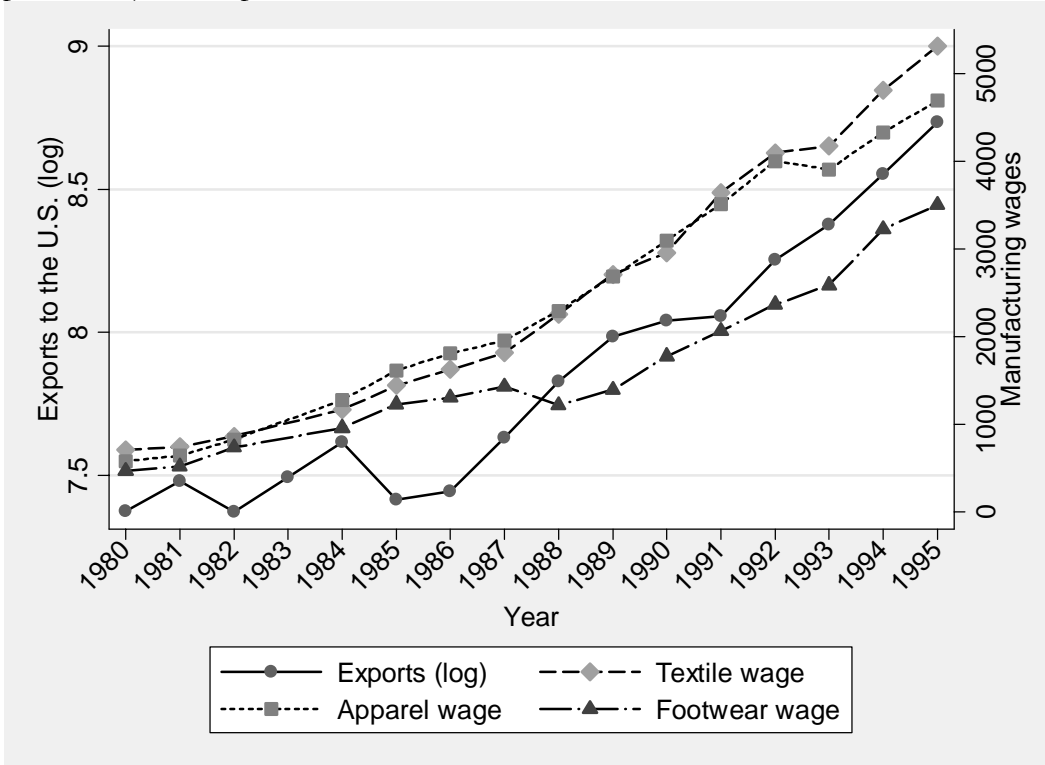


Figure 15. Exports from the Philippines to the U.S. and Philippines's Polity score

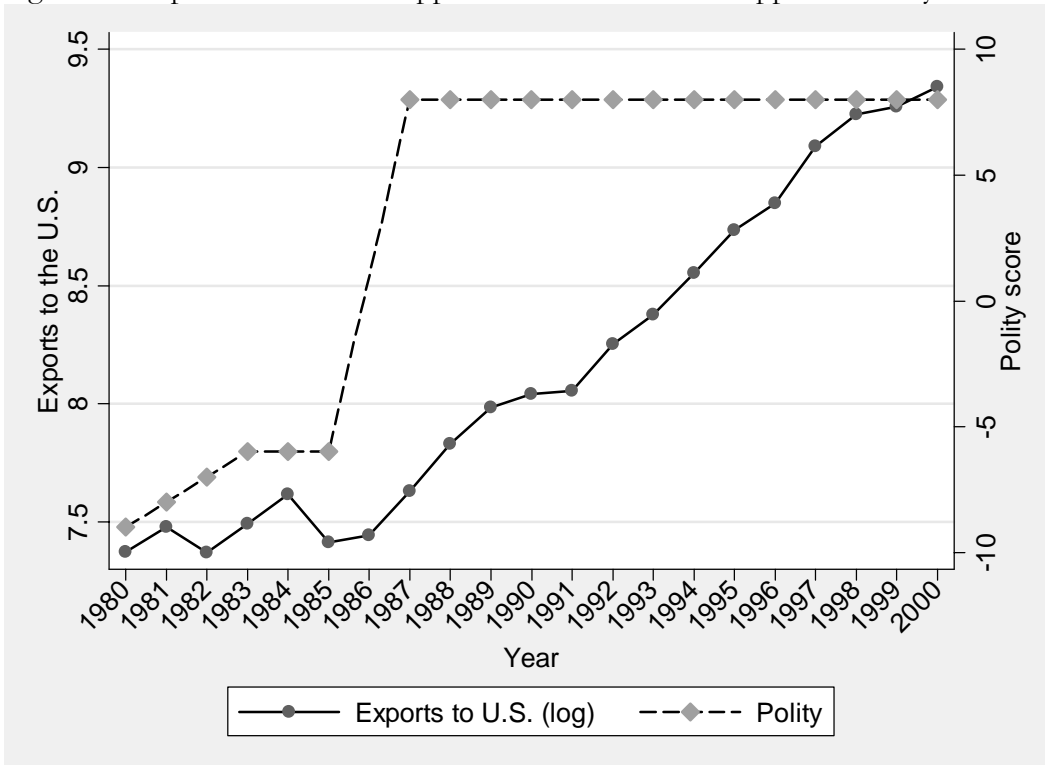


Figure 16. Exports from Bangladesh to the U.S. and Bangladesh's Polity score

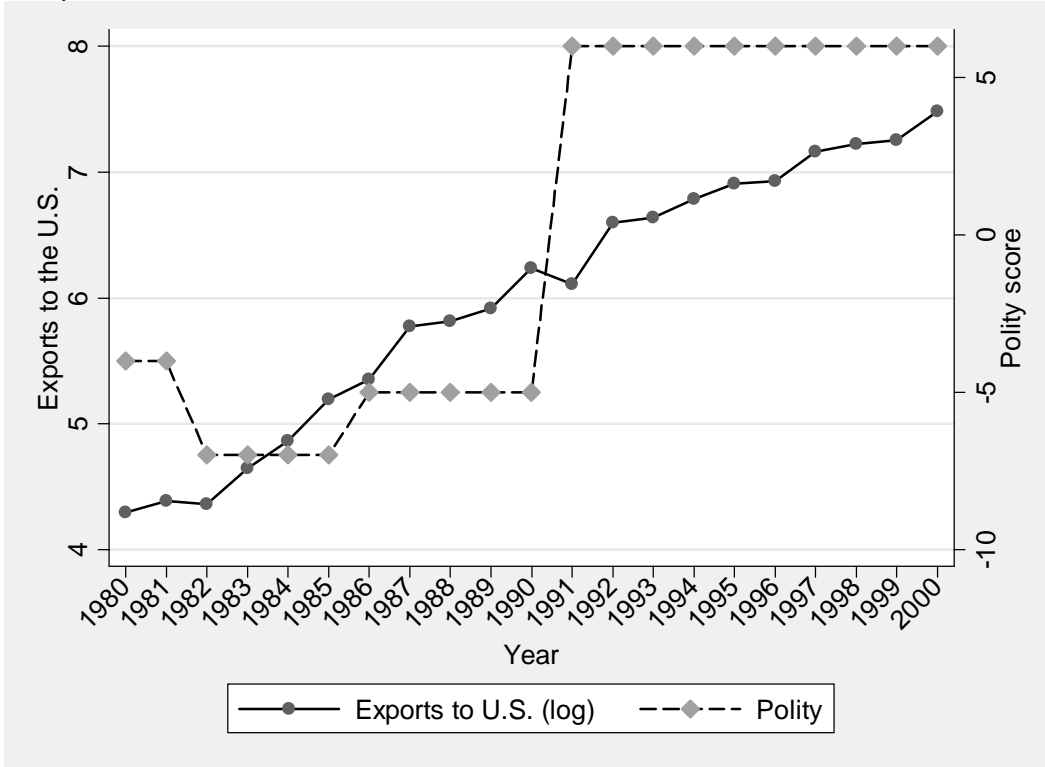


Figure 17. U.S. Imports of Woven Jute Fabric from Bangladesh

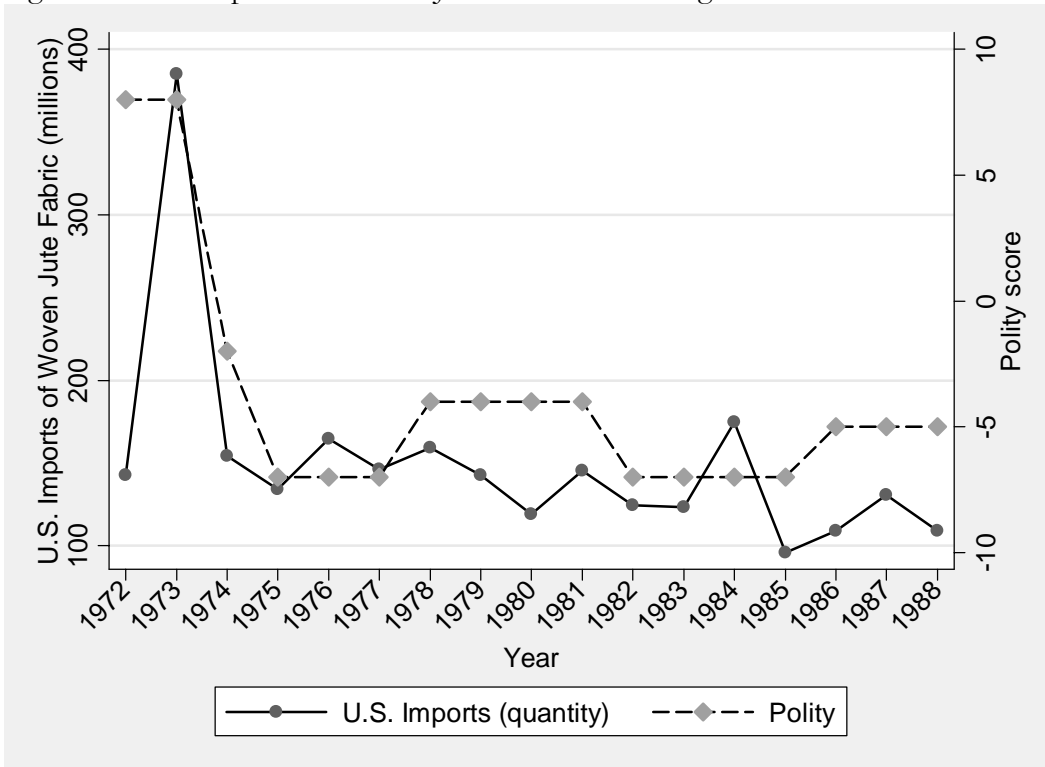


Figure 18. Comparisons of trade dependence for United States, Iran, Jamaica, Iran, and Cuba.

