Trade and democracy. An empirical investigation [1]

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Authoritative governments, like Chile in the 1970's and China today, have promoted trade openness. In the meantime, the "greatest democracy in the world", India, kept its domestic market quite closed. Democracies would leave free course to pressure from protectionist lobbies. In democracies, industrial lobbies are likely to be more organized than pro-trade consumers, because it is easier to control free-riding inside small groups than inside large ones. The votes that politicians risk to lose implementing protectionist measures may be regained through financial supports offered by protectionist-organized groups.

However, in the 1980's, the general evolution towards free trade and democracy, particularly in the developing countries, discredits the idea that protectionist lobbies dominate democratic countries. Would democracies support trade openness? According to Mayer (1984), if the median voter owns less capital than the average, a labor-intensive democratic country should be a free trader. Indeed, according to the Stolper and Samuelson's theorem, the real remuneration of labor increases when the tariffs decrease. Milner & Kubota (2003) use this theoretical approach to highlight a negative relation between tariffs and democracy. Granger & Siroën (2001) show that the respect of democratic principles exerts a direct influence on the volume of trade, which depends not only on "natural" factors but also on the choice of trade policy. This relationship takes a U shape: from initially low levels, openness decreases with the enforcement of democratic institutions, and increases after reaching a threshold, estimated to be between the level of democracy of Malaysia and Brazil. For Mansfield, Milner & Rosendorff (2000), the nature of trade policy is unpredictable in autocracies because it depends on particular interests of the dominating group.

If the existing studies concern the incidence of democracy on trade openness, other questions should be asked. Does a transition to democracy lead to a reorientation of trade? Does democracy favor a singular type of trade partners? Do the democracies trade more with each other?

Our study aims to answer these questions. Section I presents the methodological process adopted in this paper. Section II is devoted to a gravity model to quantify the influence of democracy on bilateral trade flows.

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[1] A more complete first draft of this paper has been presented to the EURIsCO's seminar in june 2004. A final version is in process. It will expose new tests and panel estimations. This version has been exposed to the European Trade Study Group (ESTG) (Nottingham, September 2004) and at the AFSE Congress (Paris, September 2004). We are grateful to Régis Bourbornnais, Jean-François Jacques, Marie Bessec, Christophe Hurlin, Bernard Guillochon, Eric Strobl, Lionel Fontagné and other participants for their useful comments.

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The methodological process

In the literature, the political regime may have an incidence on bilateral trade flows through different ways. Here three of them are distinguished.

Hypothesis 1: Democratic countries would negotiate more easily reciprocal trade agreements.

According to Mansfield, Milner & Rosendorff (2000), if there are divergent opinions in a country about the opportunity to reduce its own tariffs, everybody agrees with the openness of foreign markets. Even if legislators, influenced by specific or regional lobbies, are more protectionists than the executive component of power, they may accept trade measures opening the national market if reciprocally the other country makes similar concessions. Using a negotiation game, the authors conclude that two democracies are more likely to enter into a reciprocal trade agreement than a democracy-autocracy couple. They cannot conclude about the expected relations between two autocracies. In a different paper, the same authors (Mansfield, Milner & Rosendorff, 2002) assume that leaders are more protectionists than their electorate, which is, moreover, badly informed on their intentions. The electorate wrongly attributes bad economic performances to a restrictive trade policy and may punish the government for bad reasons. Then, an international trade agreement would signal a pro-trade commitment from their government in the aim to remove uncertainty on the responsibility of politicians. This function of the trade agreement would be all the clearer since it includes sanctions and trade policy review mechanisms, what is the case for the WTO and some regional agreements. The authors find an empirical evidence that the probability to have two countries inside a trade agreement increases when both are democratic.

We can also argue in a different way. In accordance with the models inspired by the Stolper and Samuelson's theorem, democratic developing countries, where the median-voter is a worker, should prefer pro-trade policies. Thus, a reciprocal commitment is coherent with the preference of the country and thus more credible. A free trade agreement is likely to be effective. On the contrary, an agreement with a non-democratic country appears incoherent with leaders' preference if the oligarchy concentrates a significant share of the capital. Many regional agreements, like the EU, the NAFTA or Mercosur, introduce a democratic constraint, which may be considered as a commitment to respect it. Provided that a democratic country is a free trader, a democratic constraint can be interpreted as a commitment in favor of free trade. Such a guarantee is an incentive to negotiate broader agreements. Although, the absence of democratic binding does not imply that partners are autocratic, the countries linked to some "democratic" preferential agreement are nevertheless expected to trade more between them than countries belonging to a non-democratic one.

Hypothesis 2 – A democracy would adopt lower tariffs with partners having lower transaction costs.

From Mayer's model (Mayer, 1984), in a relatively labor abundant country, a voter owning less capital than the average ("worker") should prefer a lower tariff since the import price, including transaction costs, is low. In a democratic country, if the median voter is a worker, the "elected" tariff will be weaker with a lower transaction cost. Duc, Granger & Siroën (2004) show that this relation holds at a bilateral level. Contrary to Mayer, they assume a total specialization. The expansion of the capital-intensive non-tradable sector (including public utilities) plays the same role in the factorial allocation as capital-intensive imports in the

Mayer's model. In equation [1] presented below, $\partial m_{ji}/\partial t_{ji}$ is negative (m_{ij} country j's imports from country i; (t_{ji} – 1), the tariff applied by j to i); ϕ_k is the income share of the individual k in the factor income. If k is a "worker" ("capitalist"), $\partial\phi_k/\partial t_{ji}$ is negative (positive), Ω_{ji} is also negative (positive) and the "elected" tariff is lower (higher). Moreover, for a given world price π_i , the "worker" ("capitalist") will propose a lower (higher) tariff for a low (high) transaction cost $\beta_{ij.}$

$$t_{kij} = 1 - \frac{PIB_j}{\beta_{ji}\pi_i\left(\partial m_{ji}/\partial t_{ji}\right)} \times \frac{\left(\partial\phi_k/\partial t_{ji}\right)}{\phi_k} = 1 + \Omega_{ji} \qquad [1]$$

The broader the electorate is, the more the median voter is likely to be a "worker". If the tradable sector is relatively labor abundant, the median-voter will systematically chooses a tariff lower than the one preferred by the capitalist and a bilateral tariff significantly lower when the bilateral cost of transaction is low. Conversely, in non-democratic countries where the electorate is confined to a more restricted group, the median voter is likely to be a "capitalist" and weak transactions costs should be associated with higher tariffs.

Hypothesis 3 - The costs of transaction would be weaker between a pair of democracies.

In hypothesis 2, transaction costs are independent of the political regime. Actually, democratic regimes have better institutions and respect the rule of law (property rights, respect of contracts). Anderson & van Wincoop (2004) consider that direct policy instruments, such as tariffs, count less in transaction costs than other policies as "*law enforcement and related property rights institutions, informational institutions, regulation*". Empirical evidences confirm that political freedom drives to good institutions (Clague & alii, 1996; Dawson, 1998; Haan & Sturm, 2003) and that inadequate institutions constrain trade far more than tariffs do (Anderson & Marcouiller, 2002). Consequently, the transaction cost should be lower in democratic countries. For example, we can expect corruption to be less widespread. If democratic countries trade more intensively with each other, it is not only because their "natural" transaction costs (transport, common culture, etc.) are weaker, but also because being democratic induces pro-trade institutions and lower transaction costs.

Empirical model and econometric estimations

Most of the empirical studies rest on trade models, where the volume of trade is defined as the ratio of the sum of exports and imports to total GDP, and they use a simple indicator of democracy. These studies present methodological difficulties: for example, they ignore the endogeneity problem between trade and democracy; they also consider democracy as a unilateral characteristic of the importer or exporter, which acts in the same way for each bilateral relation.

Very few empirical studies focus on the influence of political regimes on bilateral trade flows. Bliss & Russet (1998) like Mansfield, Milner & Rosendorff (2000) use gravity models to test this relation.

Gravity models are usually derived from the "new international economy". But, they are also compatible with a HOS benchmark model as long as the specialization is total (Deardorff, 1998), what is assumed by Duc, Granger & Siroën (2004).

We use an Anderson & van Wincoop (2003) specification of the gravity model, which allows to make a distinction between the effects of the democracy on the volume of trade on one hand and on the bilateral trade flow on the other hand.

Anderson & van Wincoop introduce the concept of multilateral resistance. The bilateral trade flows correspond to the equilibrium between the import demand from *j* addressed to *i* and the export supply from *i* towards *j*. In the first side, the tariff applied by the importer must be appreciated relatively to the tariff applied to all the other countries. If the country *j* increases its tariffs against all the countries except for *i*, the imports from *i* will increase although the tariff is hold constant. In the same way, an exporting country *i* increases its supply towards *j* if all the other partners increase their tariffs. Therefore, a given bilateral tariff is all the more restrictive since the "multilateral resistance"is weak[2].

The equation to test is:

$$X_{ij} = \frac{Y_i Y_j}{Y_W}\left(\frac{P_i P_j}{\beta_{ji}\, t_{ji}}\right)^{\sigma-1} \qquad [2]$$

where X_{ij} represents exports of country *i* to country *j*; Y_i and Y_j are the *i* and *j* national incomes (GDP);Y_w is the world income and does not have to be estimated because it is constant.

P_i and P_j are the national price index, which account for the "multilateral resistance": prices are all the higher since the multilateral resistance is strong. $\sigma(> 1)$ is the elasticity of substitution between the product produced by *i* and the one produced by *j*. Anderson & van Wincoop propose an iterative method to estimate P_i and P_j,. Because this process is complex, and following the alternative method presented by the authors, empirical studies prefer to replace the computed price index by fixed effects, i.e. dummy variables that locate the exporting country and the importing country (see for example, Rose & van Wincoop, 2001; Subramanian & Wei, 2003). These fixed effects take into account all the "unilateral" characteristics of the countries (including the level of democracy). Thus, with this specification, we do not test directly the assumption that democratic countries trade more, but whether two democracies trade more with each other.

In equation [2], β_{ij} represents the "natural" transaction costs between the exporter *i* and the importer *j*. It includes transportation costs and the cultural community, like a common language. Proxy variables can take into account certain components of these costs (distance; the existence of a common borders…). t_{ji} represents the bilateral tariff applied by *j* to *i* and, by extension, the transaction costs influenced by the nature of the political regime. Since a decrease in β_{ji} or t_{ji} implies a rise in exports from *i* to *j*, our econometric model, which directly tests the influence of political regimes, may be considered as a reduced form of a bilateral trade equation.

We estimate equation [2], in which various indicators of democracy in countries *i* and *j* are introduced in order to test the three theoretical hypothesis that have been previously discussed.[3] In equation [2], the exponent of the GDPs is equal to 1, so that it is strictly

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[2] This methodological choice presents the advantage to circumvent the endogeneity problem. Here, we are not in the case of bilateral variables as “common currency” which are exposed to the endogeneity problem because it is plausible that if A and B trade intensively they would adopt a common currency with a relatively high probability (see Anderson & van Wincoop, 2004). It is possible that multilateral openness “causes” democracy, but democracy is a variable concerning all bilateral relations. It is not because country A trade more with country B and less with C that it can be democratic with B and autocratic with C !

[3]We use the MCG method, the heteroscedasticity having been corrected by the White’s method.

equivalent to let appear this product on the dependent variable side. The model can thus be rewritten

$$Log(Xij/YiYj) = \alpha_1 Log(D_{ij}) + \alpha_2 Demo_{ij} + \sum_k \alpha_k Z_{ijk} + \sum_i \alpha_i DE_i + \sum_j \alpha_j DI_j + \varepsilon_{ij} \qquad [3]$$

X_{ij} = exports (F.O.B.) of country *i* to *j*, in current U.S. dollars = imports of country *j* from country *i*.

Y_i (Y_j) = GDP of country i (j), in U.S. current dollars.

D_{ij} = great arc circle kilometric distance between the two countries' capitals.

$Demo_{ij}$ = a bilateral variable, which accounts for the respect of democracy in country *i* compared to *j*.

Z_{ijk} = k variables indicating a common element: a trade agreement, a common language or a common border.

DE_i (DI_j) = exporter (importer) country-fixed effect. This dummy variable is equal to 1 if country *i* (country *j*) is the exporter (importer) country.

ε_{ij} = an error term.

The three effects of the democracy on bilateral trade, discussed in the previous part, are represented by three different variables.

According to relation 1, trade agreements requiring a mutual commitment to respect democratic values should be more favorable to trade than the others. We test this hypothesis introducing two variables into the equation. The first one, *DA* is a dummy variable, which represents the common membership to a trade agreement including a democratic clause. The second variable, *NDA*, represents the common membership to a non-democratic trade agreement. The benchmark situation corresponds to the absence of trade agreements. Thus the expected signs of the variables *DA* and *NDA* are both positive since trade agreement should always be favorable to bilateral trade, but the coefficient should be significantly higher for *DA* than for *NDA*.

Relation 2, summarized by equation 1, shows that the tariff of *j* towards *i* is an increasing (decreasing) function of transaction costs if the importing country *j* is democratic (autocratic). In order to check the relevance of this theoretical result, a second type of variable is tested: the bilateral distance between *i* and *j* multiplied by the index of democracy in the importing country *j*. Distance is here used like a proxy of transaction costs. Two variables of distance are thus created: one for the democratic importing countries and the other for the autocratic importing countries. In accordance with Relation 2, distance should have a more important negative impact on bilateral trade if the importing country is democratic. Democracy is approached by a dummy variable, built from the *Freedom House*'s indicators[4] in the following way: the countries in the sample are divided into two groups, democratic and autocratic, according to their note compared with the median.

Relation 3 assesses that two democracies should trade more with each other because they bear weaker transaction costs. In order to confirm the existence of such an attraction effect, bilateral indicators of democracy are introduced in the equation. It deals with dummy variables, built from the *Freedom House*'s indicators and defined by:

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[4] This index is usually used in the literature (see for example, Granger and Siroën, 2001; Tavares and Wacziarg, 2001). It includes two components, which both correspond to a note ranging from1 to 7: the first accounts for the respect of political freedom; the second for the respect of civil freedom. In this study, we only retain the first component because it is nearest of our theoretical issue.

- $FH0_{ij}$ = 1 if the exporting country *i* and the importing country *j* are not democratic (autocratic).
- $FH1_{ij}$ = 1 if the exporting country *i* and the importing country *j* are democratic.

The benchmark situation is a mixed case where only one partner is democratic. In accordance with the theoretical arguments, if transaction costs are lower in democracy, the expected sign is positive for $FH1_{ij}$ and negative for $FH0_{ij}$.

The model is initially estimated on the whole sample including 146 developed and developing countries, and for the year 2000. The three indicators of democracy are successively tested in the gravity model (table 1; models 1 to 3). The coefficients of *DA* and *NDA* are both significant and positive but the latter is higher than the former: agreements that include a democratic clause are more favorable to bilateral trade. Our first results also confirm that the distance has a higher impact in democracies [5]. In the same way, the $FH0_{ij}$ and $FH1_{ij}$ coefficients are highly significant and, as expected, the first one is negative while the second one is positive. In a second time, the indicators of democracy are simultaneously introduced into the gravity model (table 1; model 4). They all keep their expected sign and remain highly significant. This result may be evidence that political regimes have different specific effects on bilateral trade.

Table 1: The influence of democracy on bilateral trade flows

Dependent variable: $Log(X_{ij}/Y_iY_j)$				
	(1)	(2)	(3)	(4)
Distance (*LogDij*)	-0.72***		-0.77***	
Adjacency	0.95***	0.97***	0.93***	1.00***
Common language	0.41***	0.41***	0.39***	0.41***
Common Free Trade Agreement		1.00***	1.01	
Democratic trade agreement (*DA*)	0.75***			0.74***
Non-democratic trade agreement (*NDA*)	0.21***			0.22***
Democracy x Distance (*FH1j* LogDij*)		-0.84***		-0.79***
Autocracy x Distance (*FH0j* LogDij*)		-0.68***		-0.58***
Autocracy in *i* and *j* (*FH0ij*)			-2.40***	-5.53***
Democracy in *i* and *j* (*FH1ij*)			2.57***	5.71***
Exporter fixed effect (DE_i)	Yes		Yes	Yes
Importer fixed effect (DI_j)	Yes		Yes	Yes
Number of observations	18832		18832	18832
Fisher's statistic	150.36	143.20	143.36	152.55
Adjusted R^2	0.703	0.703	0.702	0.705

Note: ***, ** and * means the coefficient is significant respectively at 1, 5 and 10% level. *Sources*: *Xij:* FMI, Direction of Trade Statistics; Yi(Yj): World Bank, *World Development indicators*; *Dij*, *Adjacency*: CEPII database; *Free Trade areas*: CIA, World factbook; *FH0ij and FH1ij*: author's computations from Freedom House database; *DA* and *NDA*, author's building from different sources.

[5] A Fisher's test confirm that the coefficients of *AD* compared with *AND* and *LogDij * FH1ij* compared with *LogDij * FH0ij* are significantly different at 1% level.

However, the sensitivity of these first results must be tested.

Firstly, we use a traditional specification of the gravity equation, where the product of the GDP appears as a dependent variable; fixed effects are dropped and we introduce a constant term (table 2 – model 5). Compared to the first model, this specification brings two differences: $FH0_{ij}$ is no longer significant and the impact of the distance is not significantly different for democracies and autocracies. A specification of the gravity model *à la* Anderson & van Wincoop has thus few consequences on the results. However we prefer to keep this initial specification because it is more theoretically founded than the usual model.

Table 2: The influence of democracy on bilateral trade flows
(other specifications for the gravity equation)

Dependant variable	$LogX_{ij}$	$Log(X_{ij}/Y_iY_j)$		
	(5)	(6)	Monde-Sud (7)	Sud-Sud (8)
$GDP(Y_iY_j)$	0.53***			
Adjacency	1.14***	0.90***	1.03***	1.01***
Common Language	0.54***	0.46***	0.48***	0.47***
Democratic trade agreement (*DA*)	0.83***	0.60***	1.86***	1.99***
Non-democratic trade agreement (*NDA*)	0.28***	0.16***	0.08	0.20*
AutocracyxDistance (*FH0j* LogDij*)	-0.56***		-0.80***	-0.76***
DemocracyxDistance (*FH1j* LogDij*)	-0.55***		-0.76***	-0.74***
AutocracyxDistance (*D012j* LogDij*)		-0.65***		
DemocracyxDistance (*D345j* LogDij*)		-0.86***		
Autocracy in *i* and *j* (*FH0ij*)	-0.01		-1.23***	-2.43***
Democracy in *i* and *j* (*FH1ij*)	0.16***		1.24***	2.42***
Autocracy in *i* and *j* (*Dij012*)		-0.14***		
Democracy in *i* and *j* (*Dij345*)		0.14***		
Exporter fixed effect (DE_i)	No	Yes	Yes	Yes
Importer fixed effect (DI_j)	No	Yes	Yes	Yes
Number of observations	18832	15181	15829	10598
Constant	-19.24*** (0.24)			
Fisher's statistic	2286.24	113.20	132.87	165.37
Adjusted R^2	0.651	0.669	0.699	0.757

Note: ***, ** and * means the coefficient is significant respectively at 1, 5 and 10% level.

Sources: Idem Table 1; *Dij012* and *Dij0345*: authors from the Polity IV database.

Secondly, we test the sensitivity of our results compared with the indicator of democracy used. In model (6), the estimation is made with the indicator, PARCOMP, derived from the Polity IV database. PARCOMP ranks the countries from 0 to 5, according to their degree of political pluralism. The original indicator is unilateral. We thus transformed it into two dummy bilateral variables: *Dij012* equals 1 when the two partners are autocratic and *Dij345*

equals 1 when they are democratic. To preserve the homogeneity of the different estimations, the indicator PARCOMP in the importing country *j* is also used to multiply the distance. Compared to the previous indicator, PARCOMP rates a higher number of countries as democratic, what could explain why the coefficients of the democratic indicators are lower for *Dij012* and *Dij345* and for *DA* and *NDA*[6]. Despite those modifications, our conclusions on the positive incidence of democratic regimes on the bilateral trade are preserved.

Thirdly, we test the stability of the model relatively to the size of the sample. To do so, two new dummy variables have been introduced in the benchmark model: the first one indicates that bilateral trade flows concern a developing country with a developed country. The second variable indicates a South-South trade relation; North-North relations are used as the benchmark situation. These two variables being significant at the 1% threshold, we can conclude that our model is not stable and must be re-estimated on different subsamples[7].

Political economy models *à la* Mayer envisage a different relation between democracy and trade policies depending on whether the country is a north capital-abundant one or a South labor-abundant one[8]. So, the analysis is now reduced to bilateral trade flows, only implying importing southern countries. We first make estimations when all countries export to southern countries (model 7); then we reduce the sample once more because only South-South relations are considered (model 8). In both cases, the variables of democracy keep the right sign and remain highly significant. The positive impact of democracy on bilateral trade flows is thus confirmed in the peculiar case of developing countries. However, compared to the benchmark model, reducing the size of the sample makes the coefficients of $FH0_{ij}$ and $FH1_{ij}$ in the models (7) and (8) increasingly lower and the coefficient of *DA* increasingly higher. Moreover, in both cases, there is no more significant difference between the impact of distance for democratic importing countries and for autocratic ones..

Conclusion

There is econometric evidence that the nature of political regimes into two partners influences their bilateral trade. Countries committed in a free trade agreement with democratic constraints trade significantly more than the others. The relation is even stronger for the importing developing countries. In accordance with the predictions of political economy models, distance is more trade reducing between democratic countries. However, this influence disappears when the importer is a developing country. Lastly, there is evidence that democratic countries trade more with each other than "mixed" countries and, *a fortiori*, autocratic countries. Coefficients of bilateral variables representing democracy are particularly high and robust. The hypothesis according to which transaction costs are weaker between democracies is thus reinforced. These three effects appear independent. These results require to be consolidated by a panel analysis.

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[6] The different possible thresholds have been tested and the coefficients change as waited : a larger definition of democracy decreases the coefficient of *FH1ij*.

[7] The results corresponding to this estimation are not reported here because the introduction of these two dummy variables into the benchmark model does not modify the previous conclusions. In particular, the coefficients of various democracy variables keep the same sign.

[8] Democratic developed countries would be protectionist and democratic developing countries would be free trader, what is questioned by Duc, Granger and Siroën (2004).

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Annex 1 : Synthetic indicator of democracy.

We report here the countries classification according to our unilateral indicator of democracy.

FH0 (autocratic)		*FH1 (democratic)*	
Albania	Kyrgyz Republic	Argentina	Italy
Algeria	Lao People's Dem.Rep	Australia	Jamaica
Angola	Lebanon	Austria	Japan
Azerbaijan	Macedonia, FYR	Bahamas, The	Korea
Bahrain, Kingdom of	Malawi	Bangladesh	Latvia
Belarus	Malaysia	Barbados	Lithuania
Burkina Faso	Mauritania	Belgium-Lux.	Madagascar
Burundi	Morocco	Belize	Mali
Cambodia	Niger	Benin	Malta
Cameroon	Nigeria	Bolivia	Mauritius
Canada	Oman	Brazil	Mexico
Central African Rep.	Pakistan	Bulgaria	Moldova
Chad	Paraguay	Cape Verde	Mongolia
China	Russia	Chile	Nepal
Colombia	Rwanda	Costa Rica	Netherlands
Congo, Dem. Rep. of	Saudi Arabia	Croatia	New Zealand
Congo, Republic of	Senegal	Cyprus	Norway
Côte d'Ivoire	Sierra Leone	Czech Republic	Panama
Djibouti	Singapore	Denmark	Papua New Guinea
Egypt	Sudan	Dominica	Peru
Equatorial Guinea	Syrian Arab Republic	Dominican Rep.	Philippines
Ethiopia	Tajikistan	Ecuador	Poland
Fiji	Tanzania	El Salvador	Portugal
Gabon	Togo	Estonia	Romania
Gambia, The	Tunisia	Finland	Samoa
Georgia	Turkey	France	Slovak Republic
Guinea	Turkmenistan	Germany	Slovenia
Guinea-Bissau	Uganda	Ghana	South Africa
Haiti	Ukraine	Greece	Spain
Indonesia	Uzbekistan	Grenada	Sri Lanka
Iran, I.R. of	Venezuela	Guatemala	Sweden
Jordan	Vietnam	Guyana	Switzerland
Kazakhstan	Yemen, Republic of	Honduras	Thailand
Kenya	Yugoslavia, SFR	Hungary	Trinidad and To.
Kuwait	Zambia	Iceland	United Kingdom
	Zimbabwe	India	United States
		Ireland	Uruguay
		Israel	

Source : Freedom House, *Freedom in the world country ratings, 1972-73 to 2001-2002.*

Annex 2 : Data Sources and Description

Variable Name : Bilateral exports (X_{ij})
Description: Bilateral exports of the country i to the country j, in F.O.B terms and in U.S. current $, year 2000.
Source: *IMF, Direction of Trade Statistics.*

Variable Name : GDP
Description: Gross Domestic Product in U.S. current $. Average for 1999-2001.
Source: *World Bank, World Development Indicators 2004*

Variable Name : Bilateral Distance (D_{ij})
Description: Great arc circle kilometric distance between the two capitals of countries i and j.
Source: *CEPII database*, http://www.cepii.fr/francgraph/bdd/bdd.htm

Variable Name : Common Language
Description: Dummy variable equals 1 if countries i and j share the same language.
Source: *CIA World Factbook*, http://www.cia.gov/cia/publications/factbook/index.html

Variable Name : Adjacency
Description: Dummy variable equals 1 if countries i and j share a common border.
Source: *CEPII database*, , http://www.cepii.fr/francgraph/bdd/bdd.htm

Variable Name : Freedom House indicator of political rights enforcement (FH)
Description: Index ranking from 0 (no respect) to 1 (total respect) of political rights
Source: *Freedom House Data*, http://www.freedomhouse.org/ratings/index.htm

Variable Name : Unilateral autocracy indicator (FH0)
Description: Index equal to 1 if the political rights index (FH) is lower than the median of FH for the whole sample
Source: Authors' computations from Freedom House Data..

Variable Name : Unilateral democracy indicator (FH1)
Description: Index equal to 1 if the political rights index (FH) is equal or greater than the median of FH for the whole sample
Source: Authors' computations from Freedom House Data..

Variable Name : Bilateral autocracy indicator (FH0ij)
Description: Dummy variable equals 1 if FH0 equal 0 for countries i and j.
Source: Authors' computations from Freedom House Data..

Variable Name : Bilateral democracy indicator (FH1ij)
Description: Dummy variable equals 1 if FH1 equals 1 for the country i and j.
Source: Authors' computations from Freedom House Data.

Variable Name : Common Free Trade Agreement
Description: Dummy variable equals 1 if countries i and j are members of a same trade agreement
Source: *CIA World Factbook*, Frankel, J.A., 1997. *Regional Trading Blocs in the World Trading System. Washington DC*: Institute for International Economics.

Variable Name : Democratic Agreement (DA)
Description: Dummy variable equals 1 if countries i and j are members of a same free trade agreement which includes a democratic clause.
Source: Authors'database (see annex 3)

Variable Name : Non-Democratic Agreement (NDA)
Description: Dummy variable equals 1 if countries i and j are members of a same free trade agreement which has no democratic clause.
Source: Authors' database (see annex 3)

Variable Name : PARCOMP
Description: Index, ranging from 0 to 5 (competitive), according to "*the extent to which alternative preferences for policy and leadership can be pursued in the political arena*".
Source: *Polity IV database*, http://www.cidcm.umd.edu/inscr/polity/

Variable Name : Bilateral autocracy indicator (D012ij)
Description: Dummy variable equals 1 if PARCOMP equals 0, 1 or 2 for countries i and j.
Source: Authors' computations from Polity IV database.

Variable Name : Bilateral democracy indicator (D345ij)
Description: Dummy variable equals 1 if PARCOMP equals 3, 4 or 5 for the country i and j.
Source: Authors' computations from Polity IV database.

Annex 3 : Regional Organization and Democratic Constraints.

We only care about preferential regional trade agreements like Customs Unions, Common Market or Free Trade Area. All other types of trade agreements (Generalized System of Preference and other unilateral preferential trade agreements, Sectorial Agreements) are not included.

The list of Regional Organizations with democratic constraints and Organizations without democratic constraints is reported below. Democratic constraints means that either democracy is a necessity to join the Organization, or the promotion of democracy is one of the organization's aim, or there exists sanctions in case of no-democratic political change. All these information have been collected by Cindy Duc in each Organizations' treaties and protocols.

Organizations with democratic constraints	**Organizations without democratic constraints**
European Union	ASEAN
European Free trade Agreement	CACM
Central European Free Trade Agreement	CARICOM
NAFTA	UDEAC (Economic and Customs Union of the Central African States)
Andean Pact	Gulf Cooperation Council
Mercosur	Arab Common Market
	Mano River Union
	WAEMU (West African Economic and Monetary Union)