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# Membership has its Privileges – The Effect of Membership in International Organizations on FDI

## Abstract

We argue that membership in International Organizations (IOs) is an important determinant of FDI inflows. To the extent that membership restricts a country from pursuing policies that are harmful to investors, it can signal low political risk. Using data over the 1971-2005 period, we find that membership in IOs does indeed increase inflows of FDI. Controlling for the endogeneity of membership, we find this effect to be substantively important and robust to the method of estimation.

JEL-Code: F02, F21, H11, K33, P26.

Keywords: membership in international organizations, FDI, investment climate, political risk, signaling, separating equilibrium.

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## **1 Introduction**

Membership in international organizations is often considered to have beneficial consequences for their member countries, as well as for the international community at large. The World Trade Organization (WTO) is supposed to enhance international trade, the International Monetary Fund (IMF) is supposed to stabilize the international financial system, and the United Nations (UN) is supposed to increase security and peace, to name but a few possible examples. But what do we really know about the consequences of being a member in international organizations? There is evidence that membership in international organizations bares direct benefits: For example, temporary members of the UN Security Council receive larger loans from the United States, as well as more programs and projects from the IMF and the World Bank (Kuziemko and Werker 2006, Dreher, Sturm and Vreeland 2009a, 2009b). Countries serving on the Board of Executive Directors at the World Bank receive substantially larger credits than other countries (Kaja and Werker 2010). According to Schneider (2010), European Union (EU) governments attempting to increase their re-election prospects can increase their country's share in the EU's budget prior to an election. Fang and Owen (2009) find that especially non-democracies use IMF status as a commitment device. In this paper, we ask a related question, namely whether membership in international organizations (IOs) increases inflows of foreign direct investment (FDI).

Foreign direct investment (FDI) brings about great opportunities but also substantial risks. Thus, before important investment decisions are made, potential investors regularly look for information regarding not only production conditions in various locations, but also with respect to political risks. Many political decisions have direct effects on the profitability of direct investments. These include not only the abolition of property rights but also the watering down of these rights such as caps on the transferability of profits, on pricing, being taxed and so on. In this paper we argue that membership in international organizations can affect such policies.

Consider an international organization or convention that promotes good investment conditions, such as protection of property rights, and non-discrimination of various kinds. The extent to which membership or ratification implies that deviation from the IO's requirements will result in sanctions or harm the reputation of the government gives a credible promise of investor-friendly policies. We argue that compliance with the IOs' requirements is more costly for countries with ex ante high political risk than for countries with low political risk. This is because it is generally more difficult for high-risk countries to comply with many of the IOs'

policies. In order to qualify for membership or ratification, high-risk countries would need to either change their actual policies (i.e., comply with the IOs' policies) or engage in substantial efforts to fake compliance. Both strategies entail costs. Consequently, we would expect countries with low risk are more likely to be members of IOs. IO membership is thus a signal of low risk. Using data over the 1971-2005 period, we find that membership in IOs does indeed increase inflows of FDI. Controlling for the endogeneity of membership, we find the effect to be substantively important and robust to the method of estimation. Specifically, an increase in the level of our indicator of IO membership by 0.1 (on a scale from 0 to 1) increases FDI inflows by between 4.5 and 6.4 percent. We also find that countries cannot increase FDI inflows by joining IOs if they have a low level of directly observable political risk. The intuition behind this result is that such countries do not reveal any new information to foreign investors by attaining membership in an IO.

We proceed as follows: In Section 2, we motivate the empirical analysis with a simple signaling model. Section 3 describes the data, while Section 4 reports the results. Section 5 concludes and discusses the policy implications of our analysis.

## **2 The model**

How appealing a country is for foreign investors usually depends on various interrelated factors. One of these factors is what can be labeled as "country risk" or "political risk." The term refers to the likelihood that politically-induced changes in the business environment adversely affect the profitability of doing business in a country. For instance, financial factors such as currency controls, devaluation or regulatory changes, institutional factors such as an increase in corruption or social factors such as mass riots or civil war contribute to a company's operational risk.

Foreign investors can acquire information about a country's political risk by analyzing the experiences of former investors, or by consulting publically available media information or professional political risk rankings. However, this kind of information only provides foreign investors with a *noisy* or *imperfect* signal about a country's actual political risk. Low-risk countries will want to provide an additional signal about their investment conditions. In this paper, we argue that one way countries can signal low political risk is by joining international organizations, or ratifying conventions which fulfill the following criteria: First, the organization/convention promotes good investment conditions. Basics for good investment

conditions, such as strong protection of property rights, non-discrimination of various kinds etc. are a prerequisite for membership or ratification. Second, membership/ratification entails a credible commitment to the sanctioning of countries which deviate from their responsibilities as members.<sup>1</sup>

In the following, we illustrate formally how countries can use international organizations/conventions to provide a signal about their investment conditions. Let us assume there is a foreign investor who has to choose among different countries. There exist two types of countries, one with low political risk, another one with high political risk. The fraction of countries with low political risk is denoted by  $\lambda$ . If the investor invests in a country with low (high) political risk, her expected profit is  $\theta_{LR}$  ( $\theta_{HR}$ ), where  $\theta_{LR} > \theta_{HR} > 0$ . Now, consider the following multistage game with the investor and one country.

At stage 1 the country is privately aware of its type, while the investor is unable to observe this. The investor only knows the probability that the country is of low political risk,  $prob\{\theta = \theta_{LR}\}$ , i.e., the investor knows that  $prob\{\theta = \theta_{LR}\} = \lambda$  and  $prob\{\theta = \theta_{HR}\} = 1 - \lambda$ .

At stage 2 the country chooses a level of membership in international organizations,  $m$ , between  $\bar{m}$  and  $\underline{m}$ . Becoming and being member in international organizations entails costs. We then denote the cost of membership to country of type  $\theta$  by  $c(m, \theta)$ , where  $\theta = \{\theta_{LR}, \theta_{HR}\}$ . Assume that  $c(m, \theta)$  has the following properties:

- $c(0, \theta) = 0$ ,
- $\partial c / \partial m > 0$ ,
- $\partial(\frac{\partial c}{\partial m}) / \partial m > 0$ ,
- $\partial(\frac{\partial c}{\partial m}) / \partial \theta < 0$ ,
- $\partial c / \partial \theta < 0$ .

The first property is not problematic: Non-membership entails no costs. The second and third properties are also straight-forward: Costs as well as marginal costs increase with the level of membership. The fourth property means that marginal costs decrease in  $\theta$ . This property is known as the Spence-Mirrlees condition or single-crossing property. We will come back to it

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<sup>1</sup> For sake of brevity in the following sections of the paper we will only speak of (membership in) international organizations. The whole argument applies equally to (ratification of) international conventions.

later. The fifth property implies that membership costs for countries with low political risk are lower than for countries with high political risk. This central assumption can be rationalized as follows. Normally, high-risk countries do not fulfill the organizations' membership requirements, or do so to a lesser degree than low-risk countries (In fact, this is exactly the reason why high-risk countries are considered as high-risk and low-risk countries as low-risk). In order to qualify for membership, high-risk countries would need to either change their actual policies (i.e., start complying), or make efforts to fake compliance. Both strategies entail costs. In contrast, low-risk countries fulfill the membership requirements anyhow, at least more than high-risk countries do. Hence, compliance is less costly for them.

At stage 3, the investor observes  $m$ , forms a belief that the country has a low political risk with probability  $\gamma(m)$ , and pays a tax  $\tau(m) = \gamma(m) \mu \theta_{LR} + (1 - \gamma(m)) \mu \theta_{HR}$ . The amount of  $\tau$  is the result of a bargaining process between the investor and the country, and  $\mu$  denotes a mark-up (or mark-down), which is dependent on the country's bargaining power. Note that if the investor could perfectly observe the country's type, they would pay  $\tau = \mu \theta_{LR}$  if the country had a low political risk and  $\tau = \mu \theta_{HR}$  if the country had a high political risk.<sup>2</sup> The higher the country's bargaining power, the higher  $\mu$  will be. The bargaining power depends on several factors, most notably on how suitable alternative countries are for investment. Although the issue is important from a global perspective, it is not particularly relevant for our model. Furthermore, note that in the absence of signaling, the investor pays  $\tau = \mu E[\theta] = \lambda \mu \theta_{LR} + (1 - \lambda) \mu \theta_{HR}$ .<sup>3</sup>

Graph 1 shows the country's preference map, both for the case when it has a low political risk or a high political risk. It depicts the indifference curves between higher (but costly) membership and higher (and utility increasing) tax revenue. The higher the political risk in a country, the steeper the indifference curves are. Suppose that at any point in the diagram, the country increases its level of  $m$ . As argued above, this action entails higher costs when the country has a high political risk. Hence, in order for its utility to remain unchanged, i.e., in order to stay on the same indifference curve, it has to be compensated with a higher tax increase if it has a high political risk. Note that the fourth property from above assures that any two high- and low-risk indifference curves only cross once. This is why the property is known as single-crossing property.

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<sup>2</sup> In the first case  $\gamma(m) = 1$ , in the latter  $\gamma(m) = 0$ .

<sup>3</sup> In this case  $\gamma(m) = \lambda$ .

What are the equilibria in this game? If we look at perfect Bayesian equilibria, things are rather messy. First, there is a multiplicity of separating equilibria. These equilibria are shown in graph 2. All we know is that in any separating equilibrium, the level of membership of a high-risk country,  $m^*(\theta_{HR})$ , equals zero and the level of membership of a low-risk country,  $m^*(\theta_{LR})$ , lies between  $\tilde{m}$  and  $\hat{m}$ .  $\tilde{m}$  denotes the level of  $m$  implicitly determined by  $U_{HR}(m = 0, \tau = \mu \theta_{HR}) = U_{HR}(m = \tilde{m}, \tau = \mu \theta_{LR})$ , where  $U_{HR}(\cdot)$  is the utility of a high-risk country.  $\hat{m}$  denotes the level of  $m$  implicitly determined by  $U_{LR}(m = 0, \tau = \mu \theta_{HR}) = U_{LR}(m = \hat{m}, \tau = \mu \theta_{LR})$ , where  $U_{LR}(\cdot)$  is the utility of a low-risk country. In short, any separating equilibrium satisfies  $m^*(\theta_{HR}) = 0$ , and  $\tilde{m} \leq m^*(\theta_{LR}) \leq \hat{m}$ . Second, there is a multiplicity of pooling equilibria (see graph 3). The only thing we can say is that any  $m^*$  in  $[0, \tilde{m}]$  can be sustained as a pooling equilibrium. Note that the equilibrium with  $m^* = 0$  pareto-dominates the other pooling equilibria, as there is no deadweight loss from inefficient membership in international organizations. This equilibrium is the same as the no-signaling equilibrium.

The multiplicity of equilibria is due to the fact that in the classical Nash or perfect Bayesian equilibrium concept, the players' (here the investors') beliefs are unrestricted *off* the equilibrium path. This seems counter-intuitive. If we apply the Cho-Kreps Intuitive Criterion (see Cho-Kreps, 1987, Fudenberg and Tirole, 1991) to our model, things turn out to be quite different. Consider, for instance, the pooling equilibrium in graph 4. The high-risk country would be strictly worse off by choosing  $m \in (m_1, m_2]$  instead of  $m = m^*$ , whatever belief,  $\gamma(m)$ , the investor has. Therefore, the Cho-Kreps Intuitive Criterion requires that  $\gamma(m) = 1$  for  $m \in (m_1, m_2]$ . Given this, the low-risk country is no longer acting optimally by choosing  $m = m^*$ . Hence, the pooling equilibrium is destroyed. This rationale applies to all pooling equilibria. In short, none of the pooling equilibria survive the Cho-Kreps Intuitive Criterion.<sup>4</sup> Next, consider the separating equilibrium in graph 5.  $\tau^*(m)$  is a tax schedule supporting this equilibrium (Obviously there is a multiplicity of alternative tax schedules supporting the equilibrium). The high-risk country would be strictly worse off by choosing  $m \in (\tilde{m}, m^*(\theta_{LR})]$ , whatever belief,  $\gamma(m)$ , the investor has. Therefore, the Cho-Kreps Intuitive Criterion requires that  $\gamma(m) = 1$  for  $m \in (\tilde{m}, m^*(\theta_{LR})]$ . Given this, the low-risk country is no longer acting optimally by choosing  $m = m^*(\theta_{LR})$  (This implies the tax schedule is actually *not* as drawn in graph 5). Hence, the

<sup>4</sup> To better understand the Cho-Kreps Intuitive Criterion, consider the following intuition. The low-risk country knocks out every pooling equilibrium by convincing the investor that, by deviating from the equilibrium level,  $m^*$ , to another level  $m \in (m_1, m_2]$ , it proves that it must be a low-risk country, hence, deserves  $\tau = \mu \theta_{LR}$ .

separating equilibrium is destroyed. This rationale applies to all separating equilibria except one. Therefore, bar this exception, none of the separating equilibria survive the Cho-Kreps Intuitive Criterion.

The only equilibrium that survives the Cho-Kreps Intuitive Criterion is displayed in graph 6. It is known as the Spence equilibrium. A high-risk country chooses a zero level of membership,  $m^*(\theta_{HR}) = 0$ . In contrast, a low-risk country chooses the level of membership which is sufficiently large enough to remove the incentive for a high-risk country to mimic a low-risk country,  $m^*(\theta_{LR}) = \tilde{m}$ . Thus, if the investor observes the country choosing  $m = \tilde{m}$ , they receive a credible signal that it must be a low-risk country, whereas if they observe the country choosing  $m = 0$ , they know it must be a high-risk country. Or, in formal terms,  $\gamma(m = m=1$  and  $\gamma m=0=0$ . Consequently, the investor can discriminate regarding tax payments: In equilibrium, the high-risk country receives a tax  $\tau^*(\theta_{HR}) = \mu \theta_{HR}$ , and the low-risk country receives a tax  $\tau^*(\theta_{LR}) = \mu \theta_{LR}$ . Note that there is a multiplicity of belief and tax schedules supporting the equilibrium. A special belief schedule is  $\gamma(m) = 0$  for  $0 \leq m < \tilde{m}$  and  $\gamma(m) = 1$  for  $\tilde{m} \leq m$ . The corresponding tax schedule is  $\tau^*(m) = \mu \theta_{HR}$  for  $0 \leq m < \tilde{m}$  and  $\tau^*(m) = \mu \theta_{LR}$  for  $\tilde{m} \leq m$ . An alternative tax schedule is displayed in graph 6.

Importantly, although the Spence equilibrium is the most efficient among all separating equilibria, it is not necessarily pareto-optimal. Consider for instance, the case displayed in graph 7. A low-risk country is certainly worse off in the Spence equilibrium than in the pooling equilibrium with  $m = 0$ . Notably, so too is a high-risk country. This case is most likely for high  $\lambda$ . A small share of high-risk countries is enough to induce the low-risk countries to incur costs of membership in international organizations, in order to separate themselves from the high-risk countries. Welfare could be improved by prohibiting international organizations – at least in the world of our simple model, where we assumed that membership in international organizations is of no value, other than for signaling.

To sum up, drawing on a simple signaling model we have shown that there exists only one stable equilibrium outcome in which countries with low political risk become members of international organizations, whereas countries with high political risk stay out. The reason for this outcome is that by becoming a member of international organizations, low-risk countries can separate themselves from high-risk countries and signal to investors that they are indeed of low political risk. Because of this, once investors observe that a country is a member, they know,



ceteris paribus, that it is a better investment location than a country which is non-member. Consequently, member countries should possess higher levels of foreign direct investment than non-member-countries, ceteris paribus. This leads us to the following, empirically testable, hypotheses:

H1: Countries with a higher level of membership in international organizations receive higher foreign direct investment than countries with a lower level of membership.

H2: When controlling for publically available information on a country's political risk, the relationship between membership and foreign direct investment still holds.

An important additional question is whether international delegation via membership in international organizations can serve as a substitute for good domestic institutions. We can analyze this question in the context of our study. As stated above, publically available information, such as media content or professional political risk rankings, contains only a *noisy* or *imperfect* signal about a country's political risk. However, the degree of imperfection is likely to vary across countries. For some countries, such as the United States or Sweden for example, publically available information on political risk constitutes a signal which investors perceive to be sufficiently precise. The very low country risk in these countries is most probably open and reliable information. Consequently, membership will not reveal any new information to foreign investors, thus these countries will not be able to attract more foreign direct investment by becoming a member in international organizations. (Naturally this does not mean that there are not other reasons for such countries to become members.) In contrast, in countries such as Panama or Tunisia, the signal which investors can draw from publically available information on political risk is less precise. Therefore, once one of these countries becomes a member, foreign investors will gain an additional and valuable signal that its political risk is actually not as high as the risk of a comparable country which is not a member. This might persuade foreign investors to invest in the member country rather than in a comparable country which is not a member. We can condense this argument into the following hypothesis.

H3: The lower a country's *directly observable* degree of political risk, the lower is the marginal effect of membership in international organizations on foreign direct investment.

Membership in international organizations does not only serve to signal low political risk, but also to mitigate the problem of time inconsistency. Before an investment is made, any government has an incentive to promise the complete implementation of property rights. Once the investment has been made however, government incentives are different: it could be tempted to reduce, or even ignore, these property rights to benefit itself. Rational investors anticipate this and do not invest unless the government possesses the ability to turn simple promises into credible commitments. Given that international organizations can make property rights more secure and non-compliance is sanctioned, membership in international organizations can serve as a commitment device which fosters foreign direct investment. Sanctioning can be both formal (e.g., by the international organizations themselves) and informal (e.g., loss of reputation for a country's government).

### **3 Data and Method**

Our model largely follows Tobin and Rose-Ackermann (2010). The dependent variable is (log) foreign direct investment net inflows in constant 2000 US dollars, taken from the World Development Indicators (2008).

Rather than testing the impact of membership in single international organizations on FDI, we are interested in how a country's *level of membership in international organizations* affects its FDI inflows. A general indicator measuring "membership" could consist of counting the number of inter-governmental IOs that a country is member of (in a particular year), then comparing them with the membership numbers of other countries. However, this is an overly crude indicator with definite disadvantages. Some countries appear to be "more integrated" simply because they are located in areas of the world that have more regional IOs. This indicator would therefore contain serious bias. Furthermore, no distinction whatsoever is made between the substantive areas in which IOs are active, i.e., IOs like international financial institutions or the WTO are counted in the same way as IOs that have nothing to do with property rights, or are even inimical to their protection. Different degrees of membership, which might indicate

different degrees of “earnestness” in membership, are not taken into account in this approach either; whether a state has ratified additional conventions within the realm of an IO would be valuable information that is not included in this very simple indicator.

To construct a proxy for the membership level which is in line with our theory, rather than just taking any international organization into account, we confine the analysis to organizations which fulfill the following criteria:

- The organization promotes good investment conditions. Basics for good investment conditions, such as strong protection of property rights, are a prerequisite for membership or ratification.
- Deviating countries are sanctioned.
- Actors are endowed with standing before international dispute settlement mechanisms.
- The organization is active/accessible globally.

The first criterion ensures that investors care about the organizations. The second and third criteria ensure that membership involves credible commitments, rather than being mere window-dressing. As we analyze a worldwide country panel below, the fourth criterion, which allows for international comparison, is also required.

Dreher and Voigt (2008) collected data on membership in the following organizations/ratification of the following conventions. Each of these organizations/conventions matches the above criteria.

- *General Agreement on Tariffs and Trade (GATT)/World Trade Organization (WTO)*
- *International Center for the Settlement of Investment Disputes (ICSID)*, a sub-organization of the World Bank: In order to join the ICSID, countries must explicitly agree to have their behavior monitored by third parties. Membership in the ICSID gives private investors who believe that a member country did not comply with its contractual obligations the possibility to file suit against the country. The sanction mechanism is strengthened by the fact that all member countries are required to enforce any arbitral award.
- *International Finance Corporation (IFC)*, another sub-organization of the World Bank: The aim of the IFC is to promote private enterprise by improving the investment climate.

- *UN International Convention for Civil and Political Rights (ICCPR)*: The ICCPR guarantees basic individual rights; some of these rights are preconditions for secure property rights (freedom from torture and slavery, right to personal freedom and security), others are important aspects of the rule of law (right to a fair trial, prohibition of ex post facto laws etc.). The convention is endowed with a supervisory committee which monitors compliance.
- *UN International Convention for Economic, Social and Cultural Rights (ICESCR)*: The convention includes standards such as the right to work, the right to social security, the right to an adequate standard of living and the right to “the highest attainable standard of physical and mental health.” The ICESCR is also endowed with a supervisory committee which monitors compliance.
- *The UN’s so-called Optional Protocol (OP)*: By subscribing to the OP, countries promise to abolish capital punishment. Despite ratification of the protocol not directly being related to property rights, investors may interpret it as a signal of a country’s earnestness to comply with the rules it has agreed upon.
- *UN Convention on the Recognition and Enforcement of Foreign Arbitral Awards (“New York Convention”)* (NYC): The NYC specifies conditions under which countries promise to accept and enforce arbitration awards which are issued by international or transnational courts.
- *UN Convention against Torture and Other Cruel, Inhuman or Degrading Treatment or Punishment (CAT)*: The CAT guarantees basic human rights. Complying with these rights is a necessary (albeit not sufficient) condition for the protection of property rights.

Dreher and Voigt (2008) construct binary dummy variables which indicate for every individual organization/convention whether or not a country is a member. They add the dummy variables for all organizations, resulting in a country-specific *index of membership in international organizations*. Note that such summation implies that every organization gets equal weight. For the sake of convenience, Dreher and Voigt normalize the indicator to a range from zero to one. We adopt this index as a proxy for a country’s level of membership in international organizations.

Our regressions are pooled time-series cross-section analyses (panel data), covering the period 1971-2005. Fixed country and time effects are significant at the one percent level in all estimated model specifications. We use robust standard errors clustered at the country level. Since some of the data are not available for all countries or years, the panel data are unbalanced and the number of observations depends on the choice of explanatory variables. We include a lag of the dependent variable, which turned out to be highly significant according to most specifications. The basic equation takes the following form:

$$y_{i,t} = \alpha + \beta_1 y_{i,t-1} + \beta_2 IO_{i,t-1} + \beta_3' X_{i,t-1} + \eta_i + \lambda_t + \varepsilon_{i,t}, \quad (1)$$

where  $y_{i,t}$  represents log of FDI net inflows in country  $i$  at year  $t$ , and  $IO_{i,t-1}$  is the (lagged) measure of membership in international organizations.  $X_{i,t-1}$  is the vector of control variables,  $\eta_i$  and  $\lambda_t$  represent country and year fixed effects respectively, while  $\varepsilon_{i,t}$  represents the disturbance.

In choosing our control variables, we follow Tobin and Rose-Ackermann (2010) and include (log) population, (log) per capita GDP, (log) per capita GDP growth and a country's openness to trade (measured as the sum of exports and imports as a percentage of GDP). The variables are taken from the Penn World Tables (Version 6.2). We also control for (directly observable) political risk, employing the risk rating from the International Country Risk Guide (ICRG) of the PRS Group. The index assesses political risk based on 12 indicators, ranging from zero (high risk) to 100 (low risk).<sup>5</sup> This index is available over the 1984-2005 period. Arguably, a lower degree of political risk is likely to increase FDI inflows. Appendix A shows the exact definitions of all variables with their sources, while Appendix B reports descriptive statistics. The next section presents the results.

## 4 Results

Table 1 shows the results for the basic setup, including fixed country and year effects. Column 1 excludes the indicator of membership in international organizations and our index of institutional quality. The results are in line with the previous literature. At the one percent level, FDI net inflows increase with the size of inflows in the previous year. FDI inflows also increase with per capita GDP and its growth rate, and openness to trade, at least at the ten percent level of significance. Quantitatively, an increase in the previous year's inflows by one percent increases

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<sup>5</sup> Specifically, the index includes indices on Government Stability, Socioeconomic Conditions, Investment Profile, Internal Conflict, External Conflict, Corruption, Military in Politics, Religious Tensions, Law and Order, Ethnic Tensions, Democratic Accountability, and Bureaucracy Quality.

FDI by more than 0.5 percent. The elasticity for per capita GDP is slightly lower (0.46), and an increase in the GDP growth rate by one percentage point increases FDI inflows by 47 percent. An increase in trade openness (as a percentage of GDP) by one percentage point increases FDI inflows by 0.5 percent. Population size, on the contrary, does not affect FDI flows at conventional levels of significance.

In column 2 we include our index of membership in international organizations. While column 2 focuses on the broadest sample available, column 3 replicates the regression for those observations where we also have data on political risk. This is to alleviate comparison with column 4, where the ICRG index for the absence of political risk is included in addition. The number of observations decreases from more than 3,000 to less than 2,000 due to its inclusion. In particular, we lose all years prior to 1985, for which this (lagged) index is not available.<sup>6</sup> Finally, in column 6 we interact the ICRG rating with the IO membership index to test whether the marginal effect of IO membership on FDI decreases or increases with a country's directly observable degree of political risk (see hypothesis 3 of section 2).

FDI inflows are positively correlated with membership in international organizations at the five percent level of significance. Quantitatively, the coefficients of columns 2-4 imply that an increase in the membership index by 0.1 (on the 0-1 scale) increases FDI inflows by between 4.5 percent and 6.4 percent. Compared to the effects of the other covariates in the model, this effect is substantial.<sup>7</sup> These results render first support for our signaling model from section 2. It seems that countries can indeed signal a low political risk by joining international organizations, thereby increasing FDI inflows. According to column 4, FDI inflows also increase with the absence of political risk at the ten percent level of significance. The coefficient shows that an increase in the index by 1 point (on the 0-100 scale) increases FDI by almost 1 percent. When we interact the ICRG index with the membership index, we find a negative and significant effect at the ten percent level. We illustrate the quantitative impact and the statistical significance across the range of the political risk index in Figure 1.

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<sup>6</sup> Note that we test for the robustness of our results using alternative indices below. Some of these indices span a broader period of time.

<sup>7</sup> Note that with the inclusion of the IO index, the effect of population becomes significant at the ten percent level. However, while the negative coefficient is surprising, the effect is not robust across the different specifications shown in Table 1.

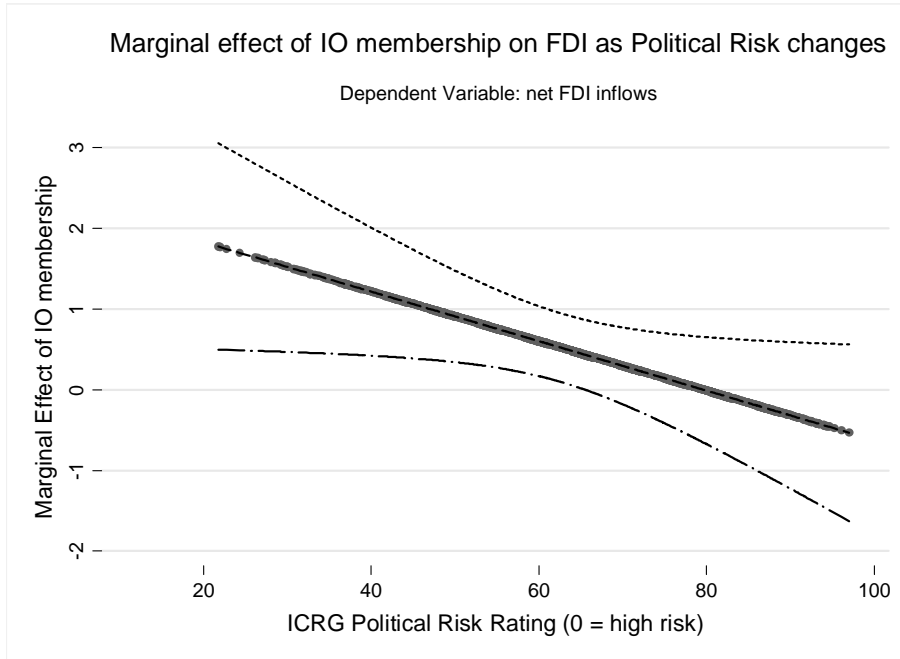


Figure 1: Marginal effect of IO membership corresponding to Table 1, column 5

The figure shows that membership in international organizations and the absence of directly observable political risk are substitutes rather than complements. According to the 90 percent confidence interval, FDI is no longer significantly affected by membership in international organizations when the political risk index exceeds a level of about 60. For values below 60, the marginal effect of IO membership is positive and significant at the ten percent level, but decreases quantitatively with lower risk. This finding supports hypothesis 3 in section 2 of the paper. In Table 2 we test for the potential endogeneity of membership in international organizations. We replicate the analysis by employing 2SLS (excluding column 1, where the IO variable has not been included). Regarding the choice of instrumental variables, Rose (2004a) suggests measures of democracy, polity, and civil rights as instruments for membership in the World Trade Organization (WTO). However, he contends that these variables provide a poor fit in the first stage of his IV regressions. In Rose (2004b), when focusing on the impact of WTO membership on trade volatility, he uses a country's score on the Polity index as an instrument for General Agreement on Tariffs and Trade (GATT)/WTO membership. This is done to tackle simultaneity bias and measurement error. Arguably, more democratic countries are more likely

to become members of international organizations.<sup>8</sup> Therefore, we also use the Polity score here. In addition, we employ the number of embassies located in a country and a country's contribution to United Nations' Peacekeeping Operations (personnel relative to population size) as instrumental variables. Both variables have been suggested in Dreher, Gaston and Martens (2008) as a proxy for political integration and are likely to affect membership in international organizations also (but are unlikely to affect FDI).<sup>9</sup>

Testing for the quality of our instrumental variables (in column 2), a first-stage F-test of 13.39 indicates some power in our instruments. The Anderson canonical correlation likelihood ratio statistic indicates that underidentification is no issue here (p-value 0.00) and the Hansen test does not reject the overidentification restrictions at conventional levels of significance (p-value of 0.42). Similarly, in columns 3 and 4 the instruments are also not rejected.

Before turning to the results of the 2SLS estimates, we perform Wooldridge's (1995) robust score chi-square and robust regression-based F-tests to check for the endogeneity of membership in international organizations, employing the instruments just described.<sup>10</sup> According to column 1, where we focus on the broadest sample available, the exogeneity of membership cannot be rejected at conventional levels of significance. However, columns 2-4, which focus on the smaller sample and include the political risk index and its interaction with IO membership, show that exogeneity is clearly rejected.

The results show that the coefficient of membership remains significant, at least at the ten percent level. However, it substantially increases in size. Specifically, according to the estimates in columns 2 and 3, an increase in the membership index by 0.01 increases FDI inflows by more than 5 percent. Interestingly, FDI inflows are not significantly affected by the absence of directly observable political risk once we allow for the endogeneity of IO membership.

Figure 2 reports the marginal effect of IO membership on FDI inflows, based on the ICRG rating. As can be seen, the marginal effect is again positive and significant at the ten percent level for index values below about 60, but no longer statistically significant at

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<sup>8</sup> To qualify as an instrument, democracy has to have no direct effect on FDI. Controlling for the quality of institutions, we see no reason to expect there is one. We will show further below that this conjecture holds true.

<sup>9</sup> One might argue that the number of embassies and membership in international organizations are driven by the same underlying variables proxying for "political openness." While controlling for fixed country and year effects we doubt this is the case, we can only rely on the usual test statistics on these instruments (that are reported below).

<sup>10</sup> These tests replace the usual Durbin and Wu-Hausman tests when 2SLS comes with Eicker-Huber-White standard errors in order to account for heteroskedasticity.



conventional levels for better institutional quality. This result confirms hypothesis 3 in section 2 regarding the substitutive relationship between IO membership and political risk.

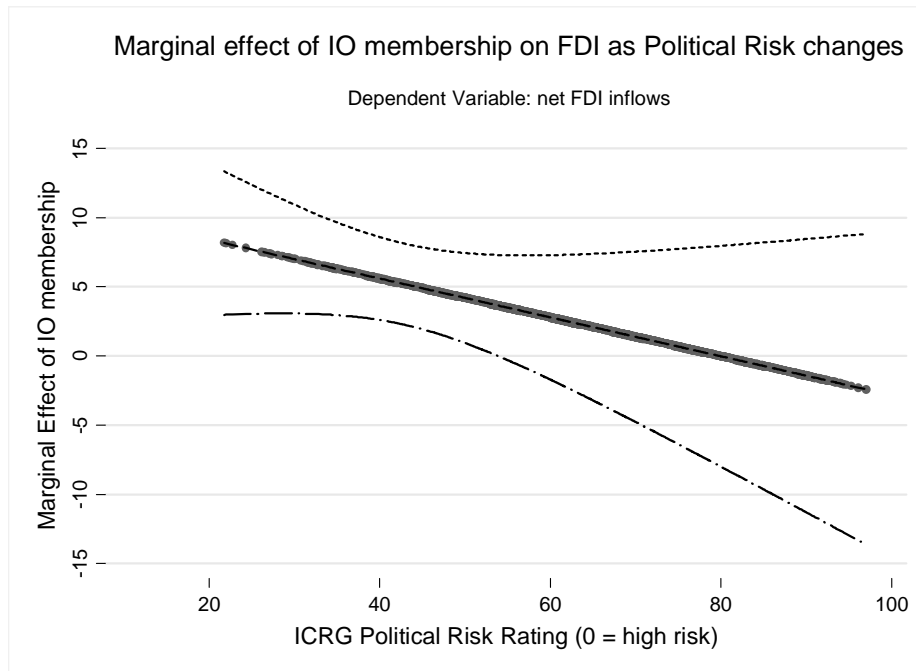


Figure 2: Marginal effect of IO membership corresponding to Table 2, column 4

While the usual specification tests do not reject the external instruments suggested above, we acknowledge that some readers might remain skeptical about their validity. We therefore proceed with employing internal, rather than external, instruments and employ the GMM estimator as suggested by Arellano and Bond (1991), Arellano and Bover (1995) and Blundell and Bond (1998). This also addresses a potential Nickell bias due to the inclusion of country fixed effects and the lagged dependent variable in a short panel (Nickell 1981). Results are based on the two-step estimator implemented by Roodman (2005) in Stata, including Windmeijer's (2005) finite sample correction.

In order to avoid an explosion of the number of instruments, we tried to keep the number of variables that we take to be endogenous as small as possible. However, the specification tests do not accept the specifications unless the rate of economic growth is treated as endogenous in addition to the lag of the dependent variable. Once we collapse the matrix of instruments, as suggested in Roodman (2006), the number of instruments seems acceptably low, as indicated in

Table 3. The Hansen test on the validity of the instruments used (amounting to a test for the exogeneity of the covariates), and the Arellano-Bond test of second order autocorrelation (which must be absent from the data in order for the estimator to be consistent), do not reject the full specification shown in column 1 at conventional levels.

The results in columns 1-3 are very much in line with those reported in Table 1 above, both qualitatively and quantitatively. Column 4 again includes the interaction between IO membership and absence of political risk. The marginal effect of IO membership is shown in figure 3.

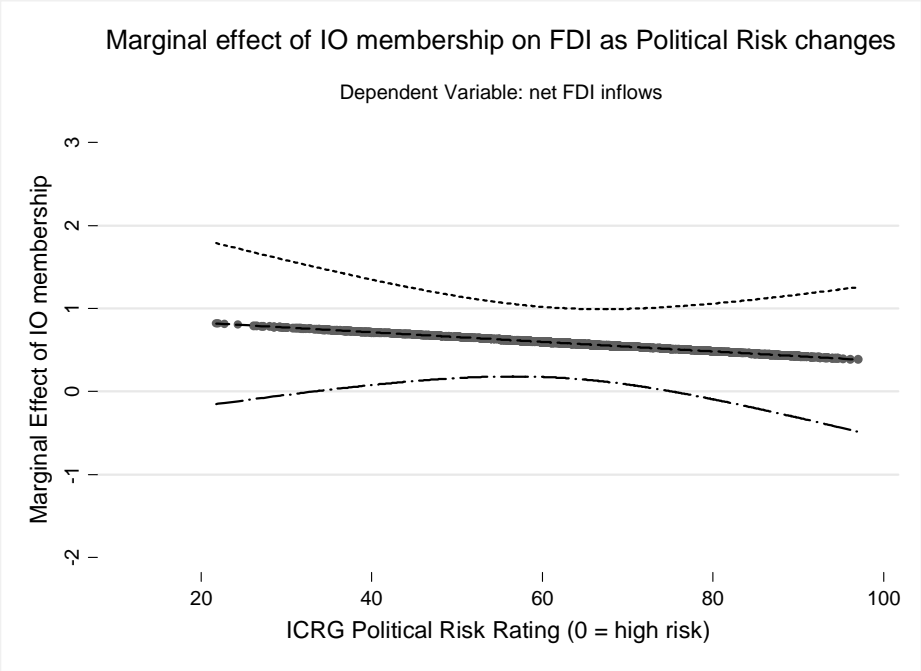


Figure 3: Marginal effect of IO membership corresponding to Table 3, column 4

The figure shows a different pattern compared to figures 1 and 2 above. While the slope is again (slightly) negative, the marginal effect of IO membership is not significant at the ten percent level for low and high values of observable political risk alike. However, the marginal effect is positive and significant for a range of about 40-75. Apparently, countries with high risk do not profit from IO membership. This is intuitive. Given their low level of credibility, investors might assume that they are not overly concerned about a further loss in reputation following the disregard of IO policies. In these countries, IO membership can hardly be expected to provide credibility. The same holds for countries with low political risk. Credibility is sufficiently high,

and property rights sufficiently secure, to the point that IO membership does not provide additional signals.

In summary, our results are extremely robust to the choice of method. We consistently find that membership in international organizations increases FDI inflows. According to the OLS and GMM results, the absence of political risk also increases FDI. This effect is, however, not significant at conventional levels according to our 2SLS results in Table 2. Regarding the interaction between directly observable political risk and “buying” credibility by joining international organizations, we consistently find that the effect of IO membership is not significant in countries with particularly low levels of political risk. Whether countries with particularly high political risk can profit from membership in international organizations depends on the method of estimation.

We proceed with some additional tests. Table 4 runs Granger causality tests as another route to address the question of causality. Causality as defined in the sense of Granger (1969), who maintains that a variable  $x$  is (Granger-)causing a variable  $y$  if past values of  $x$  help to explain  $y$ , once the past influence of  $y$  has been accounted for.

If we have  $N$  cross-sectional units observed over  $T$  time periods, the model is:

$$y_{i,t} = \sum_{j=1}^J \alpha_j y_{i,t-j} + \sum_{j=1}^J \beta_j x_{i,t-j} + \eta_i + \lambda_t + \varepsilon_{i,t}, \quad (2)$$

where  $i=1, \dots, N$  and  $t=1, \dots, T$ . The parameters are denoted  $\alpha_j$  and  $\beta_j$ , the maximal lag length is  $J$ ,  $\eta_i$  and  $\lambda_t$  again represent country and year fixed effects respectively, while  $\varepsilon_{i,t}$  represents the disturbance. Given that IO membership is likely to be endogenous, we estimate the regressions with GMM.

Table 4 reports the results. What we find is, when  $J$  is set to two, membership explains FDI inflows at the one percent level of significance. Increasing to a lag length of three, the coefficients of the membership indices are jointly significant at the ten percent level. At least at the ten percent level this holds when one or, respectively, two further lags are added. When we focus on membership in international organizations as the dependent variable (columns 5-8), there is generally no significant impact of lagged FDI on membership (with one exception, column 6). There is thus evidence that membership in international organizations Granger-causes FDI inflows, but no evidence that FDI Granger-causes membership.

In Table 5 we test for the robustness of our results by employing alternative indices of directly observable political risk. First, we use the country risk ratings produced by Euromoney.

Euromoney's risk ratings are based on the view of experts, heads of syndication and loans, as well as data from the World Bank, forfaiting houses and credit rating agencies. They are available as of 1982. To obtain the overall country risk score, Euromoney assigns weights to nine categories. These are political risk (25% weight), economic performance (25%), debt indicators (10%), debt in default or rescheduled (10%), credit ratings (10%), access to bank finance (5%), access to short-term finance (5%), access to capital markets (5%), and discount on forfaiting (5%). The resulting index ranges between zero and 100, with higher values representing higher credibility. Our second alternative index is the Economic Freedom Index provided by the Fraser Institute (Gwartney, Lawson and Norton, 2008). The data are available in five year-intervals over the 1970-2006 period. It covers five broad categories of market-oriented policies and institutions: Size of Government, Legal Structure and Security of Property Rights, Access to Sound Money, Exchange with Foreigners, and Regulation of Credit, Labor and Business. Each index ranges from 0-10, with 10 indicating the highest value of economic freedom. Finally, we employ Institutional Investor's country risk scores.<sup>11</sup> The ratings are based on a survey of leading international banks who are asked to rate each country on a scale from zero to 100 (with higher values representing a greater creditworthiness). Institutional Investor averages these ratings, providing higher weights to respondents with greater worldwide exposure and more sophisticated country analysis systems.

The results in Table 5 show that the significance of the alternative indices depends on the method of estimation. According to the GMM results of columns 4-6, all indicators are significant at the ten percent level at least, with a positive coefficient. However, the 2SLS results reported in columns 1-3 show that only economic freedom increases FDI flows at the one percent level, while the indices by Euromoney and Institutional Investor are not significant at conventional levels. Notably, the coefficient of our IO membership index is significant throughout all regressions, at least at the ten percent level.

In Table 6 we replicate the main regressions excluding OECD countries. OECD countries are arguably less likely to rely on international organizations to signal quality. In order to make sure that the results are not driven by these wealthy states, which enjoy low political risk and are members in many IOs, we rerun the regressions excluding OECD member states. As can be seen, FDI inflows still increase with membership in international organizations at the ten percent level

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<sup>11</sup> We thank Carmen Reinhart for providing these data (as used in Reinhart et al., 2003).

of significance. The exception is the GMM specification reported in column 5. However, when the interaction of IO membership with political risk is included, the marginal effect of IO membership remains significant for high-risk countries (not shown in the table). While the coefficients of IO membership become significant in the OLS and 2SLS specifications when the interaction term is included, the interaction itself is completely insignificant. Thus it seems that our main results are robust to excluding OECD countries but the interaction effect is not. This is not surprising. Excluding the countries with arguably the lowest risk reduces variation in the risk rating across the sample, so that the effect of membership becomes relevant throughout.

To summarize, there is strong evidence that membership in international organizations increases net FDI inflows. Regarding the potential interaction between political risk and IO membership, our results are less robust. In the overall sample, countries with high levels of directly observable political risk seem particularly likely to profit from membership in international organizations. However, this result is not completely robust to the choice of indicator for political risk. It also does not hold throughout different model specifications.

It is now interesting to ask whether membership in different IOs has differential impacts on FDI. Table 7 contains the answer to this question. One by one, we add our variables for membership in the seven individual organizations/conventions to the regressions.<sup>12</sup> We used the same instruments for the individual organizations that have also been used for the overall index above. However, the overidentification test rejected these instruments in some cases. This is true for the ICSID, IFC, and the New York Convention. In the regressions reported in the table, we therefore excluded one instrument for these organizations.<sup>13</sup>

As can be seen, most of the organizations increase FDI inflows at conventional levels of significance. The exception is ratification of the ICSID and the New York convention, which have no significant influence in the 2SLS regressions at conventional levels. However, note that the Wooldridge test does not reject the exogeneity of ICSID ratification at conventional levels, so the OLS regression reported in column 3 is more efficient. According to this regression, FDI inflows increase with the ratification of the ICSID at the ten percent level of significance. Quantitatively, the effect of membership on FDI ranges between 0.38 percent (ICSID) and 15.1

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<sup>12</sup> Note that we cannot include the individual organizations and conventions in one regression given the lack of sufficient instruments.

<sup>13</sup> For the ICSID, democracy had to be omitted in order for the overidentification test to accept the specification, while the number of embassies had to be excluded in the New York Convention and IFC regressions.

percent (IFC). The size of the effect of IFC membership clearly stands out compared to all other organizations. IFC's express goal is to improve the investment climate and it seems that it is rather successful in achieving this. GATT/WTO-membership is also quite conducive to FDI: Membership increases FDI by almost nine percent. Creating the preconditions for international trade simultaneously improves the climate for FDI. Compared to the effects of these two organizations, ratification of conventions concerned with human rights is of limited relevance: Membership increases FDI by two to three percent depending on the specific convention. The rather small effect of ICSID on FDI is surprising given the attention that ICSID received in the aftermath of the Argentine debt crisis. But this might already be the explanation: Our panel ends in 2005. ICSID has only become better known to many potential investors in light of some of the decisions made by private investors towards Argentina, but most of these were issued after 2005. Replication of this study five or ten years down the road might therefore lead to an increase in the coefficient for ICSID.

## **5 Summary and Conclusions**

Based on a simple signaling model, we have shown that membership in international organizations can be a valuable signal to potential foreign direct investors. We find this effect to be of substantial importance and remarkably robust to the method of estimation. Furthermore, we find a substitutive relationship between membership in IOs and political risk. Countries cannot increase FDI inflows by joining IOs once they have a low level of directly observable political risk. The intuition behind this result is that such countries do not reveal any new information to foreign investors by becoming a member of an IO. In contrast, countries with higher levels of directly observable political risk do indeed seem to profit from joining IOs. However, it remains unclear whether this result holds for countries with extremely high levels of directly observable country risk. The main goal of this paper has been to introduce a framework allowing for estimation of the extent to which membership in international organizations can signal low political risk. It is important to keep in mind that this is by no means the only function of IOs. If one is interested in their effects on internalizing border-crossing externalities, encouraging cooperation and the like, other approaches are needed.

Other aspects that need to be dealt with in future work include the endogenization of the delegation decisions: Under what conditions do politicians prefer to delegate competence

domestically, and under what conditions do they prefer international delegation? What is the relationship between the political economy surrounding that decision and its welfare effects? Some major normative issues also loom large: How much competence should be delegated? Will too much delegation lead to a hollowing out of democracy? Will it lead to lower degrees of legitimacy etc.? What policy areas should optimally be delegated to domestic agencies and what areas to international agencies? These questions certainly deserve a thorough analysis because they promise to become more and more relevant over time. The ever rising number of international treaties attests to this. While our analysis does not provide answers to these questions, we do provide the first real evidence that membership in international organizations can indeed lead to higher levels of FDI.

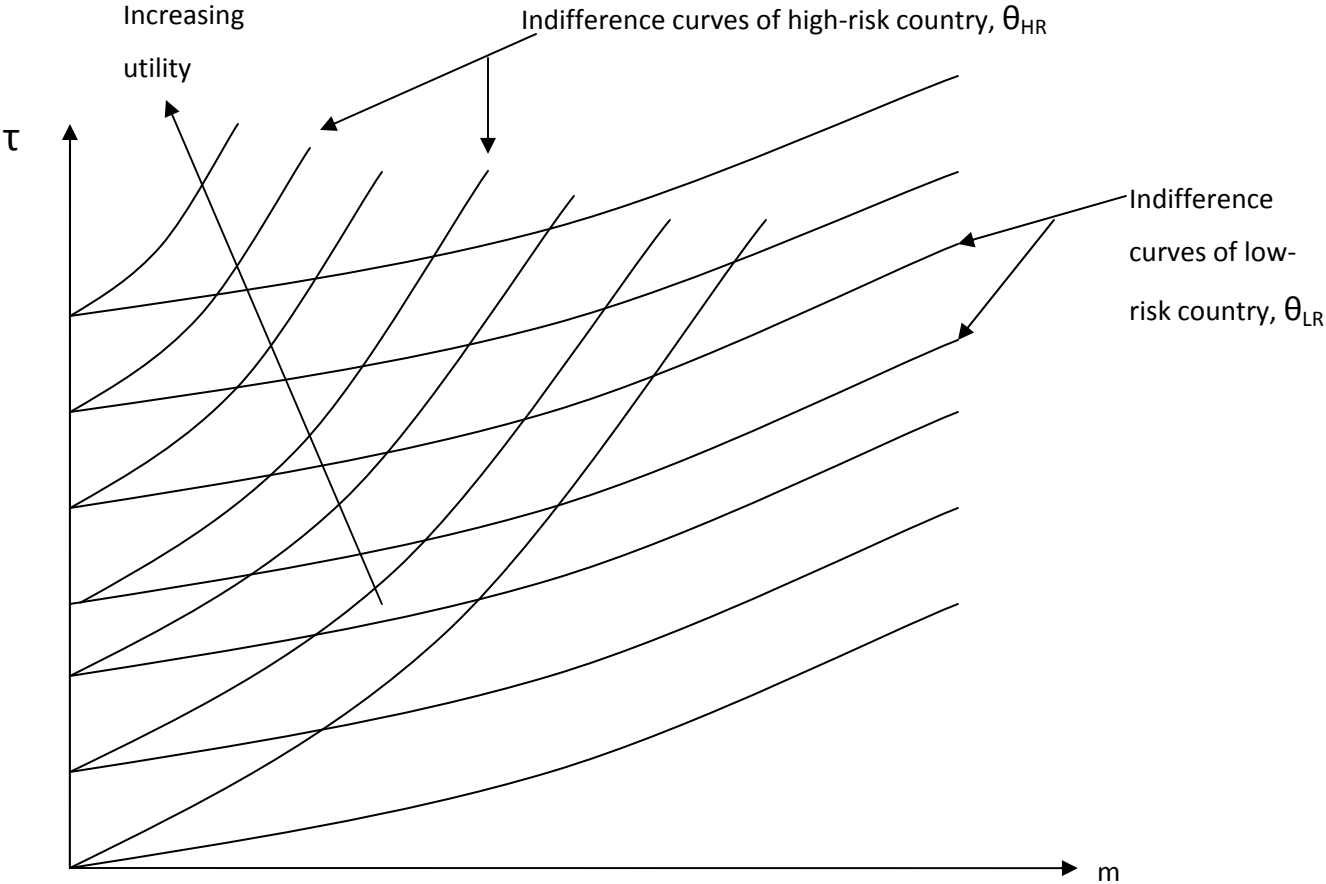
## References

- Arellano, M. and S. Bond. 1991. Some tests of specification for panel data: Monte Carlo evidence and an application to employment equations. *The Review of Economic Studies* 58: 277-97.
- Arellano, M. and O. Bover. 1995. Another look at the instrumental variable estimation of error-components models. *Journal of Econometrics* 68: 29-51.
- Blundell, R., and S. Bond. 1998. Initial conditions and moment restrictions in dynamic panel data models. *Journal of Econometrics* 87: 115-43.
- Cho, I.-K. and D. Kreps. 1987. Signaling Games and Stable Equilibria. *Quarterly Journal of Economics* 102(2): 179-221.
- Dreher, A., N. Gaston and P. Martens. 2008. *Measuring Globalization – Gauging its Consequences*. New York: Springer.
- Dreher, A. and S. Voigt. 2008. Does Membership in International Organizations Increase Governments' Credibility? Testing the Effects of Delegating Powers. CESifo Working Paper Series 2285, CESifo Group Munich.
- Dreher, A., J.-E. Sturm and J.R. Vreeland. 2009a. Global Horse Trading: IMF loans for votes in the United Nations Security Council. *European Economic Review* 53: 742-757.
- Dreher, A., J.-E. Sturm and J.R. Vreeland. 2009b. Development Aid and International Politics: Does membership on the UN Security Council influence World Bank decisions? *Journal of Development Economics* 88: 1-18.
- Euromoney. Various Years. *Country Risk Survey*. Available at [www.euromoney.com](http://www.euromoney.com).
- Fang, S. and E. Owen. 2009. *Subtle Signals, Limited Device: International Institutions and Credible Commitment of Nondemocracies*, Rice University, mimeo.
- Fudenberg, D. and J. Tirole. 1991. *Game Theory*. Cambridge, Mass: MIT Press.
- Granger, C.W.J. 1969. Testing for causality and feedback. *Econometrica* 37(3): 424-438.
- Institutional Investor. Various Years. *Country Credit Ratings*. Available at [www.institutionalinvestor.com](http://www.institutionalinvestor.com).
- International Country Risk Guide. Various Years. *Country Rankings*. The PRS Group. Available at [www.prsgroup.com](http://www.prsgroup.com).

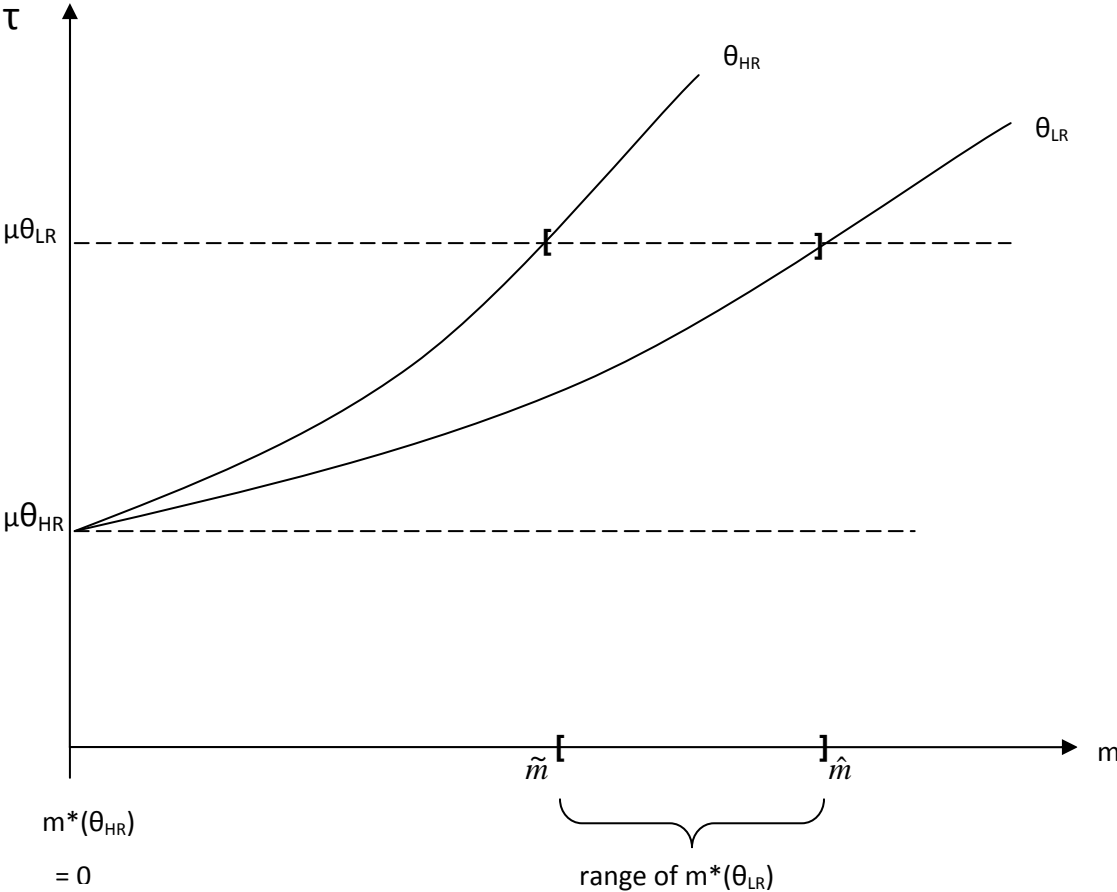


- Gwartney, J. and R. Lawson with S. Norton. 2008. *Economic Freedom of the World: 2008 Annual Report*. Vancouver, BC: The Fraser Institute. Data retrieved from [www.freetheworld.com](http://www.freetheworld.com).
- Kaja, A. and E. Werker . 2010. Corporate Governance at the World Bank and the Dilemma of Global Governance. *World Bank Economic Review*. 24(2): 171–198.
- Kuziemko, I. and E. Werker . 2006. How Much Is a Seat on the Security Council Worth? Foreign Aid and Bribery at the United Nations, *Journal of Political Economy* 114(5): 905–930.
- Nickell, S.J. 1981. Biases in Dynamic Models with Fixed Effects. *Econometrica* 49: 1417-1426.
- Reinhart, C.M., K.S. Rogoff and M.A. Savastano .2003. Debt Intolerance. *Brookings Papers on Economic Activity* 2003(1): 1-74.
- Roodman, D. 2005. *xtabond2: Stata Module to Extend xtabond Dynamic Panel Data Estimator*. Center for Global Development, Washington, D.C.
- Roodman, D. 2006. How to Do xtabond2: An Introduction to "Difference" and "System" GMM in Stata. Working Paper 103. Center for Global Development, Washington.
- Rose, A.K. 2004a. Do We Really Know that the WTO increases Trade? *American Economic Review* 94(1): 98-114.
- Rose, A. K. 2004b. Do WTO members have more liberal trade policy? *Journal of International Economics* 63(2): 209-235.
- Schneider, C.J. 2010. *Globalizing Electoral Politics: International Political Budget Cycles in the European Union*, University of California, San Diego, mimeo.
- Tobin, J. L. and S. Rose-Ackerman. 2010. When BITs have some bite: The political-economic environment for bilateral investment treaties. *Review of International Organizations*, forthcoming.
- Windmeijer, F. 2005. A finite sample correction for the variance of linear efficient two-step GMM estimators. *Journal of Econometrics* 126: 25-51.
- Wooldridge, J. M. 1995. Score diagnostics for linear models estimated by two stage least squares. In *Advances in Econometrics and Quantitative Economics: Essays in Honor of Professor C. R. Rao*, ed. G. S. Maddala, P. C. B. Phillips, and T. N. Srinivasan. Oxford: Blackwell: 66-87.

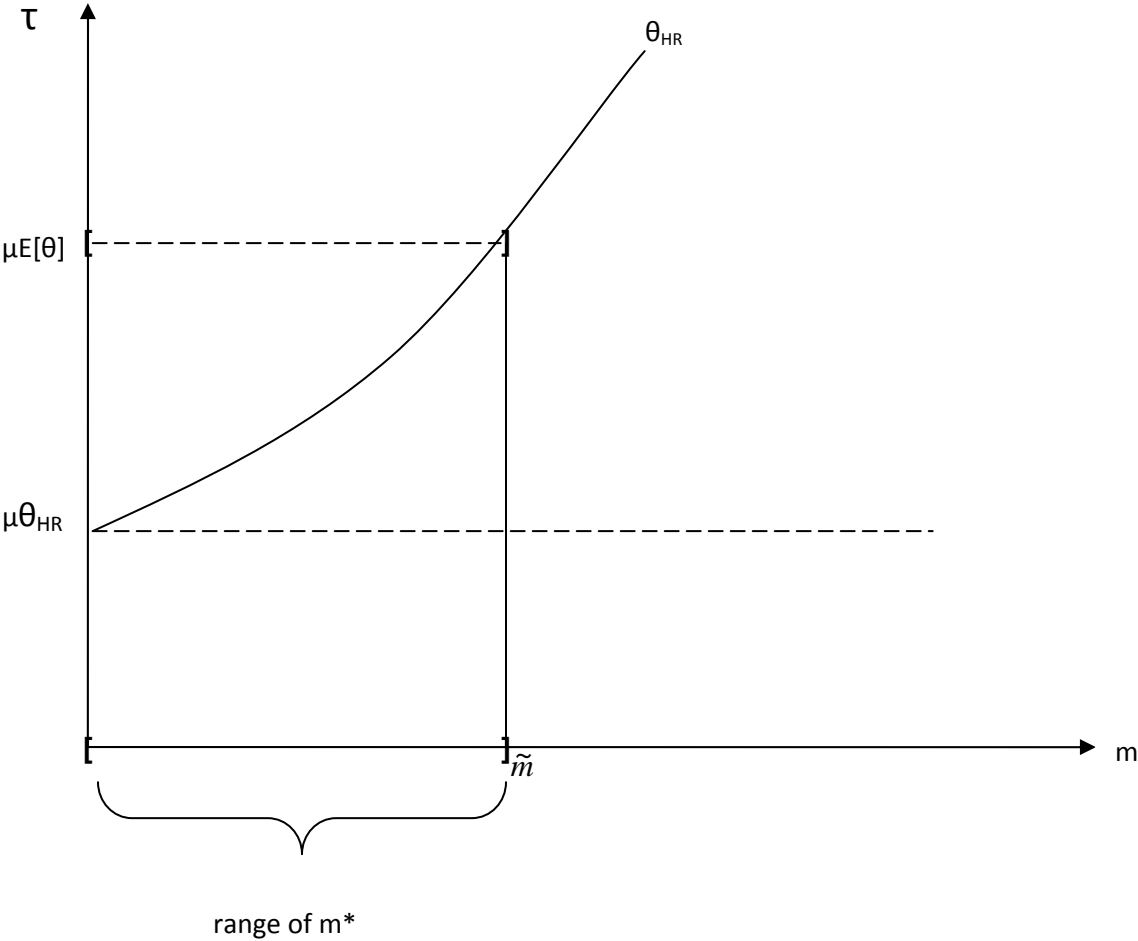
**Graph 1: Preference map of high-risk country and low-risk country**



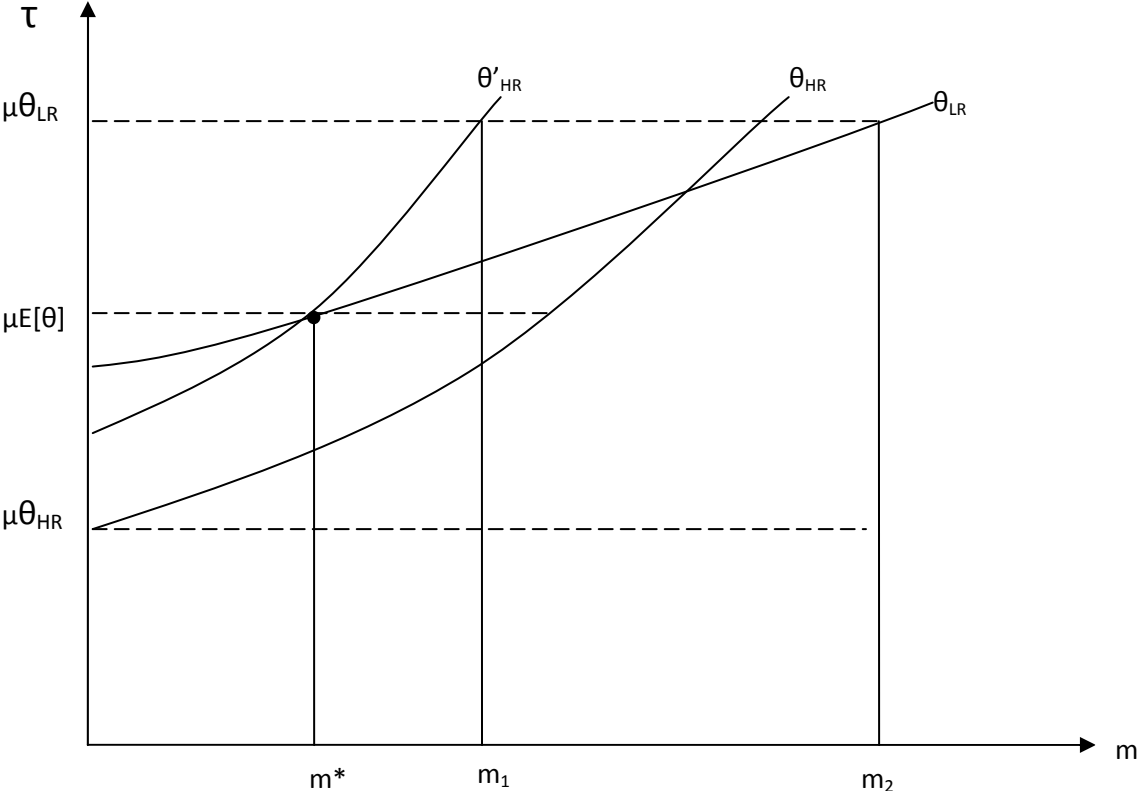
**Graph 2: Separating equilibria**



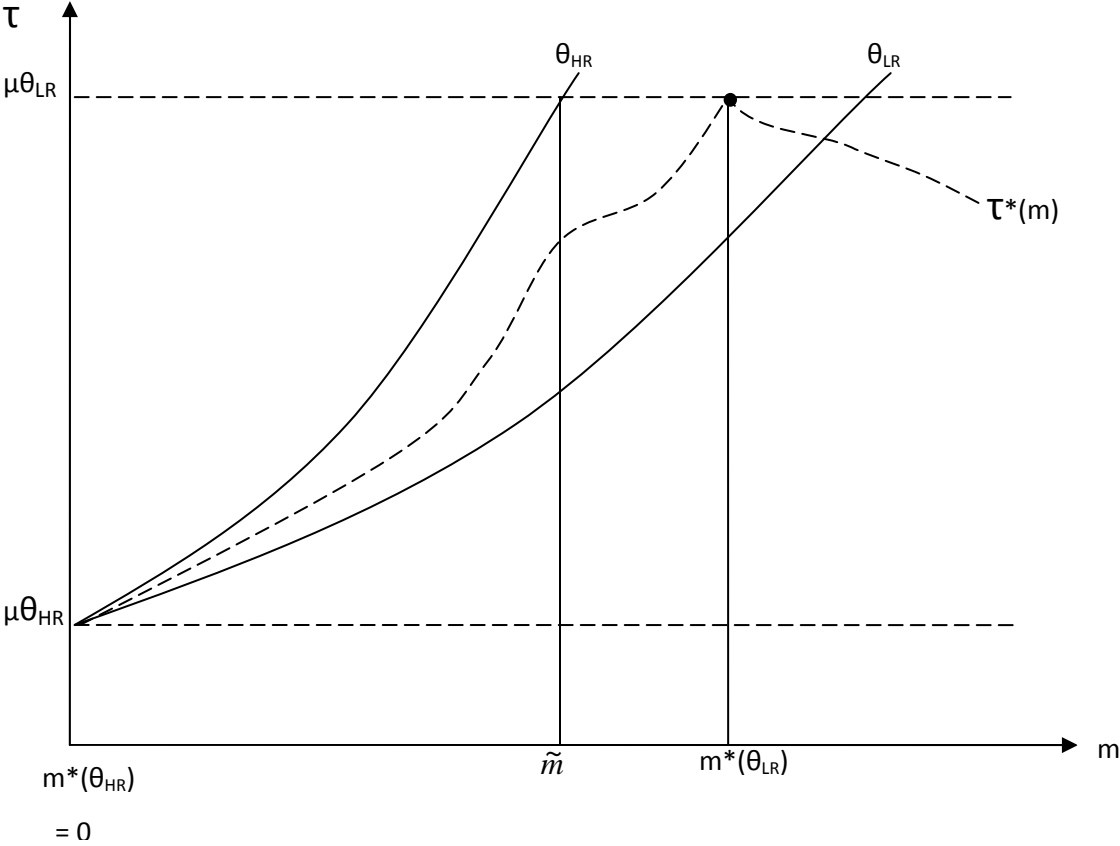
**Graph 3: Pooling equilibria**



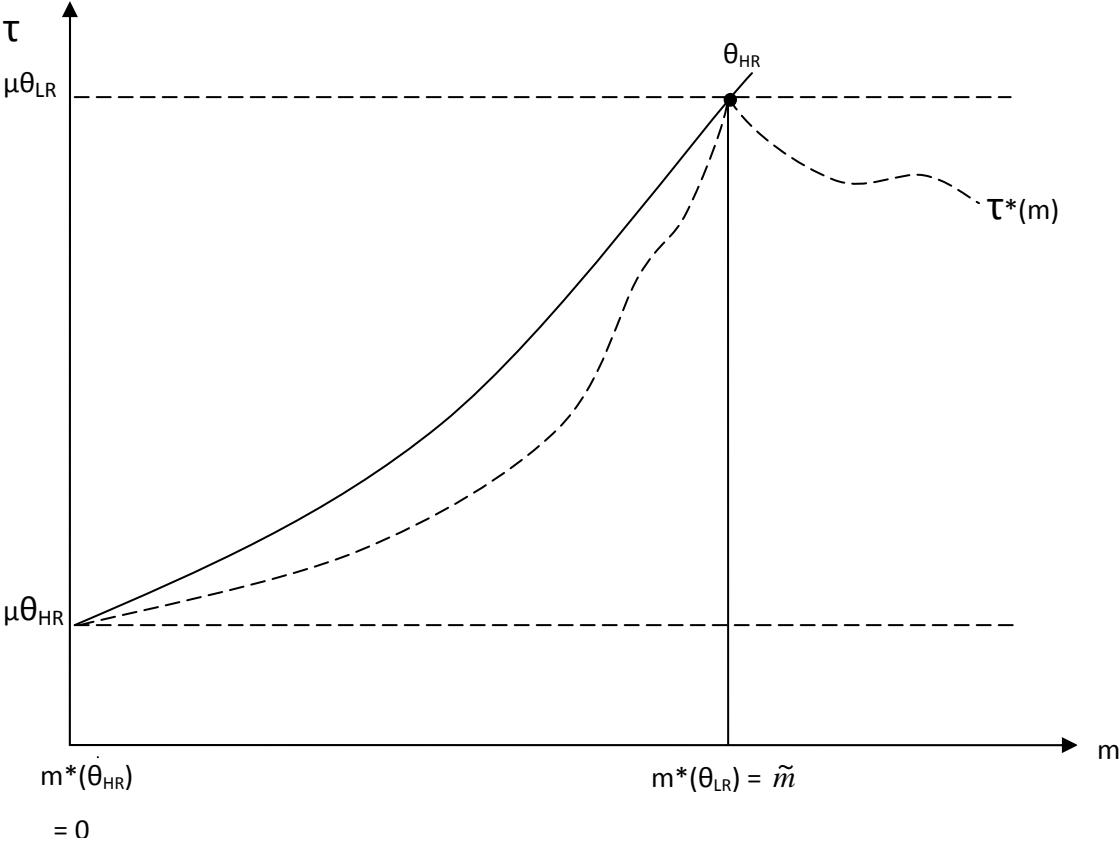
**Graph 4: A specific pooling equilibrium**



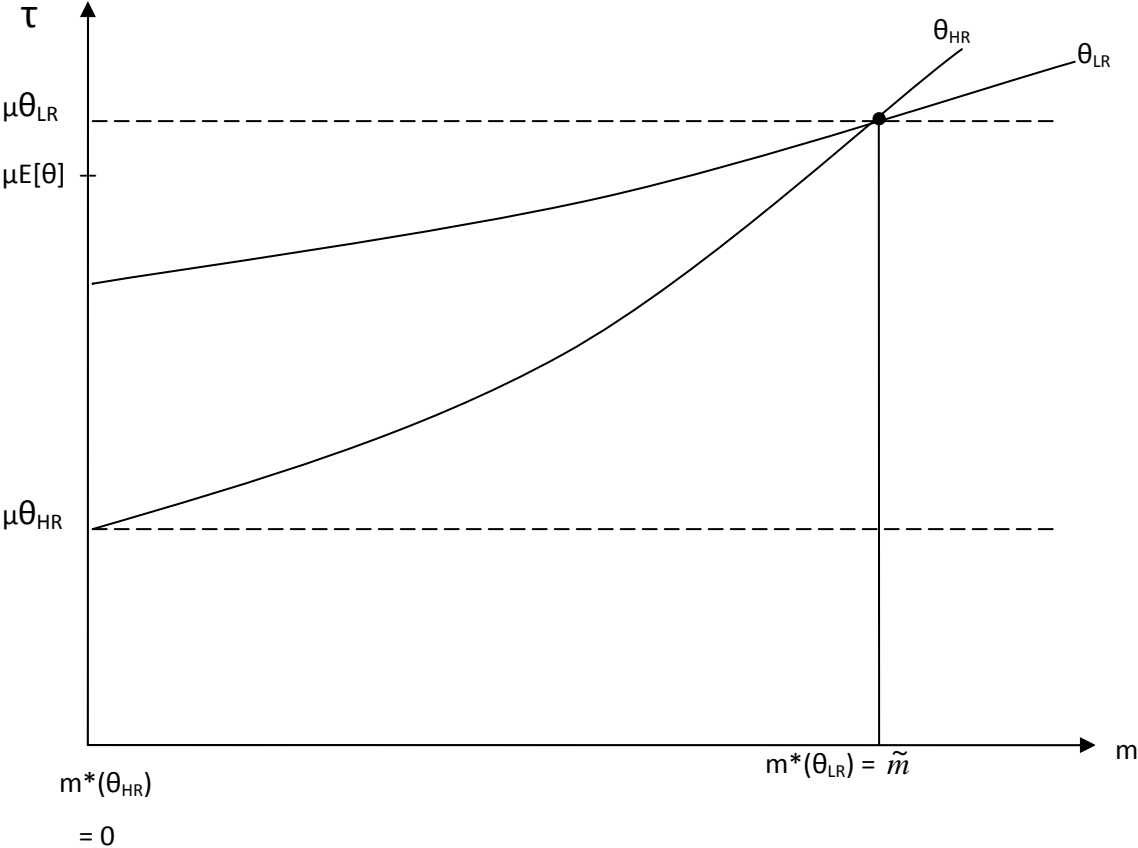
**Graph 5: A specific separating equilibrium**



Graph 6: Spence equilibrium



**Graph 7: Case of non-pareto optimal Spence equilibrium**





**Table 1: Baseline and control for investment quality**

	(1)	(2)	(3)	(4)	(5)
(Log) FDI net inflows, t-1	0.528*** (0.000)	0.525*** (0.000)	0.456*** (0.000)	0.448*** (0.000)	0.443*** (0.000)
(Log) Population, t-1	-0.347 (0.170)	-0.530* (0.080)	-0.705 (0.273)	-0.910 (0.173)	-1.450** (0.037)
(Log) GDP p.c., t-1	0.463*** (0.000)	0.396** (0.014)	0.212 (0.419)	0.121 (0.654)	0.124 (0.644)
GDP p.c. growth, t-1	0.469* (0.084)	0.573 (0.163)	0.961* (0.080)	0.917* (0.090)	0.923* (0.097)
Openness, t-1	0.005*** (0.000)	0.005*** (0.002)	0.003 (0.103)	0.003 (0.112)	0.003 (0.134)
IO membership, t-1		0.449** (0.030)	0.635** (0.018)	0.610** (0.022)	2.441** (0.036)
ICRG Rating, t-1				0.009* (0.087)	0.029** (0.036)
IO membership*ICRG, t-1					-0.031* (0.089)
Number of observations	3896	3233	1878	1878	1878
Number of countries	168	133	115	115	115
R-squared	0.51	0.51	0.50	0.50	0.51
R-squared Adj.	0.50	0.51	0.50	0.50	0.50

Notes: The dependent variable is FDI inflows. Standard errors are clustered at the country level. A dummy for each year is included. Absolute t-statistics in parentheses; \* (\*\*, \*\*\*) indicates significance at 10 (5, 1) percent level.

**Table 2: Baseline and control for investment quality, 2SLS**

	(1)	(2)	(3)	(4)
(Log) FDI net inflows, t-1	0.518*** (0.000)	0.395*** (0.000)	0.393*** (0.000)	0.399*** (0.000)
(Log) Population, t-1	-0.645*** (0.003)	-2.452*** (0.001)	-2.485*** (0.001)	-4.073** (0.011)
(Log) GDP p.c., t-1	0.377*** (0.001)	0.104 (0.636)	0.055 (0.806)	0.128 (0.558)
GDP p.c. growth, t-1	0.546 (0.199)	1.096* (0.055)	1.067* (0.059)	0.999* (0.081)
Openness, t-1	0.004*** (0.001)	0.002 (0.281)	0.002 (0.292)	0.002 (0.410)
IO membership, t-1	1.196* (0.078)	5.491*** (0.002)	5.230*** (0.004)	11.212** (0.043)
ICRG Rating, t-1			0.005 (0.252)	0.101 (0.226)
IO membership*ICRG, t-1				-0.140 (0.250)
Number of observations	3088	1819	1819	1819
Number of countries				
R-squared	0.86	0.85	0.86	0.87
R-squared Adj.	0.86	0.84	0.85	0.86
Wooldridge test (p-value)	0.295	0.003	0.006	0.024
Robust regression-based F (p-value)	0.309	0.004	0.008	0.028
Overidentifying restrictions (p-value)	0.816	0.419	0.386	0.210

Notes: The dependent variable is FDI inflows. Standard errors are clustered at the country level.

A dummy for each year is included. Absolute t-statistics in parentheses; \* (\*\*, \*\*\*) indicates significance at 10 (5, 1) percent level.

**Table 3: Baseline and control for investment quality, GMM**

	(1)	(2)	(3)	(4)
(Log) FDI net inflows, t-1	0.319*** (0.000)	0.433*** (0.000)	0.413*** (0.000)	0.413*** (0.000)
(Log) Population, t-1	0.606*** (0.000)	0.498*** (0.000)	0.516*** (0.000)	0.514*** (0.000)
(Log) GDP p.c., t-1	0.980*** (0.000)	0.811*** (0.000)	0.700*** (0.000)	0.704*** (0.000)
GDP p.c. growth, t-1	0.058 (0.894)	0.485 (0.481)	0.715 (0.260)	0.721 (0.276)
Openness, t-1	0.007*** (0.000)	0.005*** (0.000)	0.005*** (0.000)	0.005*** (0.000)
IO membership, t-1	0.468** (0.034)	0.740*** (0.004)	0.597** (0.019)	0.943 (0.271)
ICRG Rating, t-1			0.016*** (0.001)	0.020* (0.063)
IO membership*ICRG, t-1				-0.006 (0.663)
Number of observations	3233	1878	1878	1878
Number of countries	133	115	115	115
Number of instruments	137	124	124	125
Arellano-Bond test (Pr>z)	0.17	0.54	0.54	0.54
Hansen test (Prob>chi2)	0.74	0.71	0.71	0.72

Notes: The dependent variable is FDI inflows. Standard errors are clustered at the country level.

A dummy for each year is included. Absolute t-statistics in parentheses; \* (\*\*, \*\*\*) indicates significance at 10 (5, 1) percent level.

**Table 4: Granger Causality Tests, GMM**

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
(Log) FDI net inflows, t-1	0.420*** (0.000)	0.501*** (0.000)	0.454*** (0.000)	0.547*** (0.000)	0.001 (0.325)	0.002 (0.162)	0.001 (0.276)	0.001 (0.298)
(Log) FDI net inflows, t-2	0.065** (0.042)	0.126*** (0.002)	0.104*** (0.001)	0.158*** (0.000)	-0.000 (0.672)	0.000 (0.951)	-0.000 (0.740)	-0.001 (0.637)
(Log) FDI net inflows, t-3		0.022 (0.531)	0.013 (0.639)	0.041 (0.153)		-0.000 (0.729)	0.000 (0.882)	-0.000 (0.933)
(Log) FDI net inflows, t-4			-0.033 (0.222)	0.008 (0.748)			0.000 (0.861)	-0.000 (0.801)
(Log) FDI net inflows, t-5				0.041 (0.290)				0.000 (0.681)
IO membership, t-1	0.405 (0.392)	0.252 (0.565)	0.110 (0.811)	0.323 (0.408)	0.963*** (0.000)	0.941*** (0.000)	0.956*** (0.000)	0.951*** (0.000)
IO membership, t-2	1.018** (0.018)	0.433 (0.369)	0.564 (0.253)	0.036 (0.939)	-0.002 (0.898)	0.017 (0.355)	0.016 (0.295)	0.017 (0.435)
IO membership, t-3		0.339 (0.287)	0.455 (0.126)	0.627* (0.078)		-0.019 (0.249)	-0.004 (0.828)	-0.013 (0.534)
IO membership, t-4			0.327 (0.381)	-0.575 (0.215)			-0.014 (0.292)	0.004 (0.825)
IO membership, t-5				0.256 (0.535)				-0.000 (1.000)
Dependent variable	FDI	FDI	FDI	FDI	IO membership	IO membership	IO membership	IO membership
Number of observations	3276	3021	2785	2568	3565	3276	3021	2785
Number of countries	135	135	135	134	135	135	135	135
Number of instruments	83	84	85	86	76	77	78	79
Arellano-Bond test (Pr>z)	0.75	0.38	0.26	0.22	0.80	0.50	0.83	0.90
Hansen test (Prob>chi2)	0.92	0.76	0.93	0.79	0.07	0.11	0.44	0.19
F-stat for lagged x-variables (p-value)	0.004	0.056	0.052	0.034	0.552	0.058	0.104	0.739

Notes: The dependent variable is FDI inflows. Standard errors are clustered at the country level. A dummy for each year is included.

Absolute t-statistics in parentheses; \* (\*\*, \*\*\*) indicates significance at 10 (5, 1) percent level.

**Table 5: Control for some further institutional variables**

	(1)	(2)	(3)	(4)	(5)	(6)
(Log) FDI net inflows, t-1	0.355*** (0.000)	0.464*** (0.000)	0.484*** (0.000)	0.334*** (0.000)	0.420*** (0.000)	0.347*** (0.000)
(Log) Population, t-1	-1.871*** (0.001)	-1.561*** (0.000)	-0.367 (0.139)	0.576*** (0.000)	0.537*** (0.000)	0.565*** (0.000)
(Log) GDP p.c., t-1	0.373* (0.083)	0.791*** (0.008)	0.377*** (0.008)	0.774*** (0.000)	0.796*** (0.000)	0.851*** (0.000)
GDP p.c. growth, t-1	-0.118 (0.847)	1.336** (0.042)	0.571 (0.275)	-0.004 (0.994)	1.063 (0.159)	0.437 (0.471)
Openness, t-1	0.002 (0.252)	0.000 (0.998)	0.003** (0.036)	0.006*** (0.000)	0.005*** (0.000)	0.005** (0.024)
IO membership, t-1	5.672*** (0.000)	4.365*** (0.001)	1.614* (0.084)	0.581** (0.021)	0.466** (0.020)	0.608** (0.040)
Euromoney country risk, t-1	-0.003 (0.455)			0.010*** (0.001)		
Institutional Investor country risk, t-1		0.005 (0.179)			0.007* (0.077)	
Fraser index of economic freedom, t-1			0.194*** (0.000)			0.220*** (0.009)
Method	2SLS	2SLS	2SLS	GMM	GMM	GMM
Number of observations	2134	1718	2514	2213	1757	2590
Number of countries				133	88	114
Wooldridge test (p-value)	0.000	0.001	0.202			
Robust regression-based F (p-value)	0.000	0.001	0.213			
Overidentifying restrictions (p-value)	0.954	0.521	0.752			
Number of instruments				126	126	138
Arellano-Bond test (Pr>z)				0.54	0.92	0.20
Hansen test (Prob>chi2)				0.52	1.00	0.95

Notes: The dependent variable is FDI inflows. Standard errors are clustered at the country level. A dummy for each year is included.

Absolute t-statistics in parentheses; \* (\*\*, \*\*\*) indicates significance at 10 (5, 1) percent level.

**Table 6: Without OECD countries**

	(1)	(2)	(3)	(4)	(5)	(6)
(Log) FDI net inflows, t-1	0.425*** (0.000)	0.421*** (0.000)	0.388*** (0.000)	0.393*** (0.000)	0.404*** (0.000)	0.401*** (0.000)
(Log) Population, t-1	-1.294 (0.154)	-1.652* (0.078)	-1.990** (0.012)	-2.342 (0.296)	0.514*** (0.000)	0.511*** (0.000)
(Log) GDP p.c., t-1	0.122 (0.692)	0.137 (0.651)	0.045 (0.850)	0.079 (0.772)	0.697*** (0.000)	0.707*** (0.000)
GDP p.c. growth, t-1	0.881 (0.115)	0.878 (0.127)	1.009* (0.065)	0.975* (0.094)	0.742 (0.222)	0.804 (0.203)
Openness, t-1	0.002 (0.205)	0.002 (0.236)	0.001 (0.624)	0.001 (0.635)	0.005*** (0.000)	0.004*** (0.000)
IO membership, t-1	0.541* (0.069)	2.325 (0.106)	3.018* (0.081)	5.000 (0.652)	0.406 (0.188)	1.677 (0.132)
ICRG Rating, t-1	0.009 (0.156)	0.030* (0.096)	0.006 (0.251)	0.039 (0.838)	0.015** (0.019)	0.030** (0.046)
IO membership*ICRG, t-1		-0.031 (0.179)		-0.048 (0.861)		-0.023 (0.206)
Method	OLS	OLS	2SLS	2SLS	GMM	GMM
Number of observations	1339	1339	1316	1316	1339	1339
Number of countries	85	85			85	85
Wooldridge test (p-value)			0.137	0.336		
Robust regression-based F (p-value)			0.155	0.366		
Overidentifying restrictions (p-value)			0.919	0.675		
Number of instruments					124	125
Arellano-Bond test (Pr>z)					0.85	0.86
Hansen test (Prob>chi2)					1.00	1.00

Notes: The dependent variable is FDI inflows. Standard errors are clustered at the country level. A dummy for each year is included. Absolute t-statistics in parentheses; \* (\*\*, \*\*\*) indicates significance at 10 (5, 1) percent level.

**Table 7: Subcomponents of IO indices, 2SLS**

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
(Log) FDI net inflows, t-1	0.466*** (0.000)	0.443*** (0.000)	0.430*** (0.000)	0.401*** (0.000)	0.438*** (0.000)	0.431*** (0.000)	0.425*** (0.000)	0.951 (0.382)	0.416*** (0.000)
(Log) Population, t-1	-7.379* (0.065)	-0.870* (0.067)	-0.916 (0.138)	1.731 (0.227)	-2.025*** (0.003)	-2.532*** (0.002)	-0.790 (0.144)	17.951 (0.657)	-1.070 (0.100)
(Log) GDP p.c., t-1	-1.064 (0.193)	0.063 (0.765)	0.091 (0.738)	0.839* (0.068)	0.093 (0.668)	-0.023 (0.926)	-0.079 (0.722)	2.300 (0.649)	0.532 (0.145)
GDP p.c. growth, t-1	1.188 (0.332)	1.038** (0.042)	1.016* (0.094)	0.843 (0.228)	0.862 (0.123)	0.980 (0.117)	1.125** (0.038)	-3.078 (0.735)	1.074 (0.120)
Openness, t-1	0.007 (0.162)	0.002 (0.225)	0.002 (0.215)	0.002 (0.487)	-0.000 (0.870)	-0.002 (0.407)	0.003 (0.218)	-0.004 (0.822)	0.009** (0.032)
ICRG Rating, t-1	-0.033 (0.209)	0.008** (0.039)	0.009 (0.124)	0.034* (0.085)	0.009** (0.043)	0.017*** (0.002)	0.001 (0.895)	-0.033 (0.726)	-0.005 (0.577)
Gatt/WTO, t-1	8.948* (0.094)								
ICSID, t-1		0.020 (0.983)	0.376* (0.070)						
IFC, t-1				15.080* (0.075)					
ICCPR, t-1					2.168*** (0.006)				
ICESCR, t-1						3.196*** (0.006)			
Optional Protocol to ICCPR, t-1							2.494*** (0.001)		
New York Convention, t-1								-26.631 (0.639)	
Convention against Torture, t-1									3.388** (0.037)
Method	2SLS	2SLS	OLS	2SLS	2SLS	2SLS	2SLS	2SLS	2SLS
Number of observations	1819	1819	1819	1819	1819	1819	1819	1819	1819
Number of countries			111						
R-squared Adj.	0.36	0.88	0.48	0.66	0.85	0.82	0.83	.	0.76
Wooldridge test (p-value)	0.001	0.700		0.001	0.004	0.001	0.001	0.010	0.017
Robust regression-based F (p-value)	0.001	0.708		0.002	0.004	0.001	0.001	0.016	0.018
Overidentifying restrictions (p-value)	0.724	0.693		0.898	0.277	0.516	0.983	0.559	0.214

Notes: The dependent variable is FDI inflows. Standard errors are clustered at the country level. A dummy for each year is included.

Absolute t-statistics in parentheses; \* (\*\*, \*\*\*) indicates significance at 10 (5, 1) percent level.

## Appendix A: Sources and Definitions

Variable	Definition	Source
IO membership	Indicator of membership in selected international organizations and conventions.	Various sources as described in the text
(Log) FDI net inflows	Log of foreign direct investment net inflows in constant 2000 US dollars.	World Bank (2008)
(Log) Population	Log of population	Penn World Tables (Version 6.2)
(Log) GDP p.c.	Log of GDP per capita in constant 1996 US dollars	Penn World Tables (Version 6.2)
GDP p.c. growth	Growth of GDP per capita in constant 1996 US dollars	Penn World Tables (Version 6.2)
Openness	Sum of exports and imports in percent of GDP.	Penn World Tables (Version 6.2)
ICRG risk	Political risk rating based on 12 indicators, ranging from zero (high risk) to 100 (low risk): government stability, socioeconomic conditions, investment profile, internal conflict, external conflict, corruption, military in politics, religious tensions, law and order, ethnic tensions, democratic accountability, and bureaucracy quality. ICRG stands for International Country Risk Guide.	PRS Group (various years)
Euromoney risk	Country risk rating based on expert views as well as data from the World Bank, forfating houses and credit rating agencies. It comprises nine categories, ranging from zero (high risk) to 100 (low risk): political risk (25% weighting), economic performance (25%), debt indicators (10%), debt in default or rescheduled (10%), credit ratings (10%), access to bank finance (5%), access to short-term finance (5%), access to capital markets (5%), and discount on forfating (5%).	Euromoney (various years)
Institutional Investor risk	Country risk rating based on a survey of leading international banks. Institutional Investors averages the ratings, providing greater weights to respondents with higher worldwide exposure and more sophisticated country analysis systems. The rating ranges from zero (high risk) to 100 (low risk).	Institutional Investor (various years)
Fraser index of economic freedom	Index of economic freedom which assesses the strength and impartiality of the legal system as well as the popular observance of the law. It ranges from zero to six, where a higher number indicates a better system of law and order.	Fraser Institute (2008)
Embassies	Absolute number of embassies in a country.	Dreher, Gaston and Martens (2008)
Participation in U.N. Security Council Missions	Personnel contributed to U.N. Security Council Missions per capita.	Dreher, Gaston and Martens (2008)
Democracy index	Polity IV index of democracy, ranging from -10 to +10, with higher values implying more democracy.	Marshall and Jagers (2004)



**Appendix B: Descriptive Statistics (estimation sample, Table 1, column 1)**

Variable	Obs	Mean	Std. Dev.	Min	Max
IO membership, t-1	3867	0.52	0.34	0.00	1.00
(Log) FDI net inflows	3896	18.86	2.73	4.68	26.50
(Log) Population, t-1	3896	8.74	1.94	3.66	14.07
(Log) GDP p.c., t-1	3896	8.39	1.09	5.14	10.83
GDP p.c. growth, t-1	3896	0.02	0.07	-0.42	1.26
Openness, t-1	3896	77.17	48.19	0.85	427.88
ICRG risk, t-1	2006	64.45	15.19	11.50	97.00
Euromoney risk, t-1	2213	50.87	25.16	2.56	100.00
Institutional Investor risk, t-1	1765	47.05	25.48	4.60	98.90
Fraser index of economic freedom, t-1	2722	5.86	1.12	2.47	8.92
Embassies, t-1	3776	48.22	35.37	0.00	180.00
Participation in U.N. Security Council Missions	3860	1.73	8.15	0.00	104.94
Democracy index, t-1	3860	2	8	0	105