

# Membership in International Organizations as a Signaling Device for Foreign Investors

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This paper examines the role of specific international organizations and conventions like the World Trade Organization (WTO) or the UN International Convention for Civil and Political Rights (ICCPR) as signaling device for foreign investors. According to our theoretical model, especially countries with mediocre country risk ratings can use membership in such organizations and conventions to signal their investment appeal to foreign investors as investor's certainty about such countries' actual country risk is relatively low and, therefore, membership constitutes a valuable signal. Using panel data for up to 104 countries over the period 1971 – 2000, we analyze in detail which country types (low, middle or high risk countries) can increase inflows of foreign direct investment by becoming member of a specific international organization or convention. Overall, membership has indeed a positive effect on foreign direct investment inflows. However, we find that the real world is more complex than suggested by our model. For the WTO, e.g., if at all rather low and middle risk countries profit. In contrast, as suggested by our model, for the ICCPR, e.g., only middle risk countries profit.

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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 WTO is supposed to enhance international trade, the IMF is supposed to stabilize the international financial system, the UN are 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? Rose (2004) is unable to show that GATT/WTO membership has increased international trade whereas Tomz et al. (2007) find that membership - rightly conceptualized - does increase trade. In addition, there is evidence that membership in international organizations bears direct benefits for these members: Temporary members of the UN Security Council, e.g., receive larger loans from the US, as well as more programs and projects from the IMF and the World Bank (Kuziemko and Werker 2006, Dreher, Sturm and Vreeland 2009). Countries serving on the Board of Executive Directors at the World Bank receive substantially larger credits than other countries (Kaja and Werker 2007). *In this paper, we are interested in a slightly different question; can countries use membership in specific international organizations (IOs) to signal to foreign investors that they are good investment locations and, thereby, increase inflows of foreign direct investment (FDI)?*

It has often been pointed out that it can be a disadvantage to be too strong (e.g. Weingast 1993). A state that is strong enough to protect private property rights and to enforce private contracts is also strong enough to expropriate private wealth. This could be called the dilemma of the strong state. Rational subjects know this and will therefore invest less than they would if they could be sure that the state will not misuse its strength. States that have not had the chance to build up a reputation as meticulously sticking to their own promises will be especially affected. In such cases, the creation of domestic

independent agencies will often not be a credible commitment because such agencies can be abolished with relative ease. It might therefore be rational for these countries to delegate relatively more powers internationally. Majone (1996, 12) has even argued that “credibility, rather than the legitimate use of coercion is now the most valuable resource of policy-makers.” We test whether policy-makers can “buy” credibility by delegating powers internationally.

By a simple signaling model we show that countries with low country risk become member in IOs, whereas countries with high country risk stay out. The intuitive reason for this outcome is that by becoming member in IOs low risk countries can separate from high risk countries and signal to investors that they have indeed a low country risk. Thus, once an investor observes that a country is member in IOs, she knows that it must have a low country risk, hence, is *ceteris paribus* a better investment location than a country which is not member. Consequently, member-countries should possess *ceteris paribus* higher investment than non-member-countries.

Going from theory to the real world, the question is whether foreign investors indeed take membership in certain IOs as a valuable signal about a country’s country risk *given that they possess albeit imperfect information about the quality of the country’s institutions and, hence, can deduce its country risk at least to some degree directly*. Presumably, countries with very weak (strong) economic or democratic institutions or a very high (low) country risk will not profit from becoming member in an IO. The bad (good) conditions in these countries are most probably open and undoubted information, thus, membership actions will not constitute any new information to investors. In contrast, countries with a middle country risk may profit. Investors will probably not be as sure about the (future) conditions in these countries. Consequently, once a country in this category becomes member, this will constitute a valuable signal to investors. *So, we hy-*

*pothesize that the marginal effect of IO membership on FDI is insignificant for countries with low and high quality of domestic institutions and positively significant for countries with middle-rate quality of domestic institutions.*

Using panel data for up to 104 countries over the period 1971 – 2000, we find that the above hypothesis cannot be confirmed in general. Instead, the picture is more diverse; for which type of country (low, middle or high risk country) foreign investors take IO membership as a valuable signal about a country's investment appeal, and, hence, which type of country profits from IO membership, crucially depends on the specific IO. For the WTO/GATT and the International Finance Corporation, if at all rather low and middle risk countries profit. In contrast, for the International Center for the Settlement of Investment Disputes if at all rather high (but not too high) risk countries profit. Further, for the UN International Convention for Civil and Political Rights and the UN International Convention for Economic, Social and Cultural Rights rather countries with middle country risk profit.

The remainder of the paper is organized as follows: the next section contains the basic argument. Section three formalizes the argument in a simple signaling theoretical model, while section four contains some more detailed arguments. Section five presents our data about membership in IOs. Section six presents further data and discusses our empirical strategy, while section seven contains the empirical results. Finally, section eight concludes.

## **2 International organizations as signaling device**

Investment creates employment and generates public revenue, which can be used for public good provision. Employment and public goods in turn enhance people's or at least some people's wealth. Hence, improving investment conditions and attracting invest-

ment usually figures among the pretended or true key goals of a country's government.

But what determines a country's attractiveness for investors? How appealing a country is for investors usually depends on various interrelated factors. One of these factors is what can be labeled as "country risk." The term country risk refers to the likelihood that 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, or political factors such as mass riots or civil war contribute to companies' operational risk.

Now, how can investors detect a country's true country risk?<sup>1</sup> Or the other way round, how can countries signal to investors that they have indeed a low country risk and separate from those countries which just *pretend* to have a low country risk? Note that this problem applies especially to *foreign* investors as this group has usually higher information costs than domestic investors. Therefore, in this paper, we will narrow our attention to foreign investors.

There are several strategies how countries can signal a low country risk. One of them is by joining certain IOs or ratifying certain conventions like (a) the GATT/WTO, (b) sub-organizations of the International Bank of Reconstruction and Development (IBRD), namely, (ba) the International Finance Corporation (IFC) or (bb) the International Center for the Settlement of Investment Disputes (ICSID), (c) certain UN conventions like (ca) the International Convention for Civil and Political Rights (ICCPR), (cb) the International Convention for Economic, Social and Cultural Rights (ICESCR), (cc) the Convention on the Recognition and Enforcement of Foreign Arbitral Awards ("New

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<sup>1</sup>Investors may just consult one of the country risk ratings out there. We come to this point in section 4.

York Convention”) or (cd) the Convention against Torture and Other Cruel, Inhuman or Degrading Treatment or Punishment (CAT), or (e) the International Court of Justice (ICJ). This way of signaling should be examined thoroughly not only because it is widely used, but also because it can tell us about the *raison d’être* of international organizations.

Thus, let us explain in more detail how countries might be able to use membership in IOs or conventions like the ones listed above to signal to foreign investors that they have a low country risk, hence, are good investment locations, and separate from those countries which just *pretend* to have a low country risk. In order to qualify for such organizations or conventions, countries have to comply (or at least pretend to comply) with certain requirements. For instance, membership in the WTO requires non-discrimination of various kinds (“Most Favoured Nation Principle” and “International Treatment Obligation”), prohibition of tariff and trade restrictions, reciprocity and multilateralism. Deviation from these principles result in costly sanctions; ultimately, deviation and non-compliance can even lead to an exclusion from the organization. *The crucial point now is that compliance with such requirements is more costly for countries with high country risk than for countries with low country risk.* The reason for this is as follows. High risk countries do not fulfill these requirements, at least they fulfill them less than low risk countries do.<sup>2</sup> In order to qualify for membership, high risk countries would need to either change actual policy, i.e. start complying, or make big efforts to fake compliance. Both strategies entail high costs. In contrast, low risk countries fulfill such requirements anyway, at least they fulfill them more than high risk countries do. Hence, compliance is less costly for them. In conclusion, given that membership requirements are strict enough, sanctions for deviation from compliance are harsh enough, and/or costs from exclusion are high enough, membership in organizations or conventions like the ones

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<sup>2</sup>In fact, this is exactly why high risk countries are high risk countries and low risk countries are low risk countries.

mentioned above is so costly for high risk countries that they prefer to stay out. Therefore, by joining such organizations or conventions low risk countries can separate from high risk countries and credibly signal to foreign investors that they are indeed of low risk. Once a foreign investor learns that a country is member in such organizations or conventions, she knows that its country risk must be low.<sup>3</sup>

The following section formalizes the basic argument.

### 3 A simple signaling model

Let there be a foreign investor who has to choose between different investment locations or countries. There exist two types of countries, one with low country risk, another with high country risk. Denote the fraction of countries with low country risk by  $\lambda$ . If the investor invests in a country with low (high) country risk, her expected profit is  $\theta_{LR}$  ( $\theta_{HR}$ ), where  $\theta_{LR} > \theta_{HR} > 0$ .

Now, consider the following multi-stage game with the investor and one country.

At stage 1, the country privately observes its type, while the investor cannot observe the country's type. She only knows the probability, that the country has a low country risk,  $prob\{\theta = \theta_{LR}\}$ . That is the investor knows that  $prob\{\theta = \theta_{LR}\} = \lambda$  and  $prob\{\theta = \theta_{HR}\} = (1 - \lambda)$ .

At stage 2, the country chooses a degree (or level) of membership in international organizations,  $m$ , between  $\underline{m}$  and  $\bar{m}$ . Assume that  $\underline{m} = 0$ . Assume that membership in

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<sup>3</sup>Of course, in reality the story is often not that simple. Important side effects may come into play. Here, however, we abstracted from all side-effects to clarify the main line of reasoning.

international organizations is of no value, other than signaling. Becoming and being member in international organizations entails costs. Denote the cost of membership,  $m$ , to country of type  $\theta$  by  $c(m, \theta)$ . Assume that  $c(m, \theta)$  has the following properties:

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

The first property is unproblematic: no membership entails zero costs. The second and third properties are also trouble-free: costs as well as marginal costs are increasing in the degree of membership. The fourth property implies that membership costs for countries with low country risk are lower than for countries with high country risk. Arguments in favor of this have been provided above. Finally, the fifth property means that marginal costs decrease in  $\theta$ . Such a property is known as Spence-Mirrless condition or single-crossing property. We will come back to it later.

At stage 3, the investor observes  $m$ , forms a belief that the country has a low country 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  $\tau$  results from a bargaining process between the investor and the country, and  $\mu$  denotes a mark-up (or mark-down) which depends on the country's bargaining power. Note that if the investor could observe the country's type perfectly she would pay  $\tau = \mu\theta_{LR}$  if the country had a low country risk and  $\tau = \mu\theta_{HR}$  if the country had a high country risk.<sup>4</sup> (The higher the country's bargaining power the higher  $\mu$ . The

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<sup>4</sup>In the first case,  $\gamma(m) = 1$ , in the latter,  $\gamma(m) = 0$ .



bargaining power depends on several factors, most notably on how suitable alternative countries are for investment. Albeit the issue is important from a global perspective, it is not that relevant for our model. So, we do not need to go into detail here.) Note further that in the absence of signaling the investor pays  $\tau = \mu E[\theta] = \lambda\mu\theta_{LR} + (1-\lambda)\mu\theta_{HR}$ .<sup>5</sup>

Graph 1 shows the country's preference map both for the case when it has a low country risk and for the case when it has a high country risk. Note that the country's indifference curves are steeper if it has a high country risk than if it has a low risk country risk. The reason for is as follows. Suppose, at any point in the diagram, the country increases its level of  $m$ . As argued above, this action entails higher costs if the country has a high country risk than if it has a low country risk. Hence, in order for its utility to be 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 country risk than if it has a low country risk. Note further that the fifth property from above assures that any two high and low risk indifference curves only cross once. (This is exactly why the property is known as single-crossing property.)

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 can say is that in any separating equilibrium, the degree of membership of a high risk country,  $m^*(\theta_{HR})$  equals zero and the degree 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 equilibria satisfies  $m^*(\theta_{HR}) = 0$

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<sup>5</sup>In this case,  $\gamma(m) = \lambda$ .

and  $\widetilde{m} \leq m^*(\theta_{LR}) \leq \widehat{m}$ . Second, there is a multiplicity of pooling equilibria – displayed in graph 3. The only thing we can say is that any  $m^*$  in  $[0, \widetilde{m}]$  can be sustained as a pooling equilibrium.<sup>6</sup>

Has our equilibrium analysis already come to an end? The multiplicity of equilibria is due to the fact that in the classical Nash or perfect Bayesian equilibrium concept the players' (here the investor's) beliefs are unrestricted *off* the equilibrium path. This does not make full sense. If we apply the Cho-Kreps Intuitive Criterion to our model, things turn out quite differently.<sup>7</sup> Consider for instance the pooling equilibrium in graph 4. The high risk country would be strictly worse off choosing  $m \in (m_1, m_2]$ , 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 does no longer play optimally choosing  $m = m^*$ . Hence, the pooling equilibrium is destroyed. This rationale applies to all pooling equilibria. In short, none of the pooling equilibria survives the Cho-Kreps Intuitive Criterion.<sup>8</sup> Next, consider the separating equilibrium in graph 5.  $\tau^*(m)$  is a tax schedule supporting this equilibrium. (Of course, there is a multiplicity of alternative tax schedules supporting the equilibrium.) The high risk country would be strictly worse off choosing  $m \in (\widetilde{m}, m^*(\theta_{LR})]$ , whatever belief  $\gamma(m)$  the investor has. Therefore, the Cho-Kreps Intuitive Criterion requires that  $\gamma(m) = 1$  for  $m \in (\widetilde{m}, m^*(\theta_{LR})]$ . Given this, the low risk country does no longer play optimally choosing  $m = m^*(\theta_{LR})$ . (That implies, the tax schedule is actually *not* as drawn in graph 5.) Hence, the separating equilibrium is destroyed. This rationale applies to all separating equilibria except one.

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<sup>6</sup>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.

<sup>7</sup>For the Cho-Kreps Intuitive Criterion, see Cho-Kreps, 1987, Fudenberg and Tirole, 1991, and the intuition given in the next footnote.

<sup>8</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 a tax  $\tau = \mu\theta_{LR}$ .

In short, none of the separating equilibria except one survives the Cho-Kreps Intuitive Criterion.

The only equilibrium that survives the Cho-Kreps Intuitive Criterion is displayed in graph 6. It is known as Spence equilibrium. A high risk country chooses a zero degree of membership,  $m^*(\theta_{HR}) = 0$ . In contrast, a low risk country chooses the degree of membership which is just sufficiently large such that a high risk country has no incentive to mimic a low risk country,  $m^*(\theta_{LR}) = \tilde{m}$ . Thus, if the investor observes the country choosing  $m = \tilde{m}$ , she receives a credible signal that it must be a low risk country, whereas if she observes the country choosing  $m = 0$ , she knows that it must be a high risk country. Or, in formal terms,  $\gamma(m = \tilde{m}) = 1$  and  $\gamma(m = 0) = 0$ .<sup>9</sup> Consequently, it can discriminate regarding tax payments: in equilibrium the high risk country gets a tax  $\tau^*(\theta_{HR}) = \mu\theta_{HR}$ , and the low risk country gets a tax  $\tau^*(\theta_{LR}) = \mu\theta_{LR}$ .

Note that, albeit 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 from the high risk countries. At least in the world of our simple model, welfare could be improved by banning international organizations.

To sum up, we have shown by a simple signaling model that there exists only one stable

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<sup>9</sup>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.

equilibrium outcome. That is countries with low country risk become member in international organizations, whereas countries with high country risk stay out. The reason for this outcome is that by becoming member in international organizations low risk countries can separate from high risk countries and signal to investors that they have indeed a low country risk.

Thus, once an investor observes that a country is member in IOs, she knows that it must have a low country risk, hence, is *ceteris paribus* a better investment location than a country which is not member. Consequently, member-countries should possess *ceteris paribus* higher investment than non-member-countries.

This leads us to the following *empirically testable hypothesis*: *Once one controls for other determinants of investment, countries which are member in certain international organizations or have ratified certain conventions possess higher investment than countries which are not member in such organizations or did not ratify such conventions.*

The above hypothesis will be further developed in the following section.

## **4 IO membership as a substitute for good domestic institutions**

If foreign investors had perfect information about the institutional quality of a country, they could deduce its country risk *directly*.<sup>10</sup> Consequently, whether a country is member in certain IOs would not provide any valuable information, the whole idea of IOs as signaling device would be obsolete. In contrast, our model from section 3 assumed that investors cannot observe the quality of a country's institutions or risk type. However,

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<sup>10</sup>To be more exact, a country's country risk is determined by the quality of its institutions *in the future*.

both scenarios (perfect information and zero information) do not seem to be very reasonable. In reality, foreign investors will have some *imperfect* information about the quality of a country's institutions and its country risk. Just consider publically available media information, the various professional country risk rankings or the investors' experience from former investments.

*So, our empirical analysis has to answer the following questions: Do foreign investors indeed take membership in certain IOs as a valuable signal about a country's country risk given that they possess albeit imperfect information about the quality of the country's institutions and, hence, can deduce its country risk at least to some degree directly?*

The above question may be further developed. Not every country may profit from IO membership to the same degree.

Presumably, countries with very weak economic or democratic institutions or a very high country risk will not be able to draw any positive effect from becoming member in IOs. The reason for this is as follows. Most probably, any foreign investor will be well informed about the bad conditions in these countries; furthermore, she will be quite sure that the conditions prevail in the future. Hence, if such a country becomes member, investors will think of such actions as a fraud rather than perceiving it as a credible signal. Just imagine that all of a sudden North Korea becomes member of the WTO. Rather than taking this a signal for increased investment appeal of North Korea, investors would believe in a fake and start doubting the credibility of the WTO.

Also, countries with very strong economic or democratic institutions or a very low country risk will presumably not profit. The good (future) conditions in these countries are most probably open and undoubted information as well, thus, such actions will not constitute any new information to investors.

In contrast, countries in the middle may profit. Investors will probably not be as sure about the (future) conditions in these countries. Consequently, once a country in this category becomes member, this will constitute a valuable signal to investors.

We can condense the above argument to the following hypothesis: *The marginal effect of IO membership on FDI is insignificant for countries with low and high quality of domestic institutions and positively significant for countries with middle-rate quality of domestic institutions.*

In the next section, we present our data about membership in IOs.

## 5 Making IO membership measurable

The goal of this paper is to analyze how a country's membership in certain international organizations affects its FDI inflows. Ideally, we should test for any organization. Actually, we confine to organizations which fulfil the following criteria:

- Strong protection of property rights is a prerequisite for membership or ratification.
- Deviating countries are sanctioned.
- Actors are endowed with standing before international dispute settlement mechanisms.
- Organization is active/accessible globally.

Dreher and Voigt (2008) collected data on membership in the following organizations/ratification of the following conventions. All of these organizations/conventions to some extent match the above criteria.

1. *General Agreement on Tariffs and Trade (GATT)/World Trade Organization (WTO)*

2. *International Center for the Settlement of Investment Disputes (ICSID)*, a sub-organization of the International Bank of Reconstruction and Development (IBRD): 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 think 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 contracting countries are required to enforce any arbitral award.
3. *International Finance Corporation (IFC)*, another sub-organization of the IBRD: The aim of the IFC is to promote private enterprise by improving the investment climate.
4. *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.
5. *UN International Convention for Economic, Social and Cultural Rights (ICESCR)*: The ICESCR is also endowed with a supervisory committee which monitors compliance. The convention includes, e.g., 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”. Admittedly, whether these rights promote or even weaken property rights is an open question. Anyway, it makes sense to compare the impact of the ICESCR with the one of the ICCPR.
6. *UN so-called Optional Protocol (OP)*: By subscribing to the OP, countries promise

to abolish capital punishment. Albeit ratification of the protocol is not directly related to property rights, investors may interpret it as a signal of a country's earnestness to comply to the rules it once agreed on.

7. *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.
8. *UN Convention against Torture and Other Cruel, Inhuman or Degrading Treatment or Punishment (CAT)*: The CAT guarantees basic human rights. Complying to these rights is a necessary (albeit not sufficient) condition for the protection of property rights.
9. *International Court of Justice (ICJ)*: The ICJ is the dispute settlement branch of the UN. Recognition of the ICJ is optional, i.e. it is not a prerequisite for membership in the UN.

In the next section, we present the dependent and control variables. Moreover, we discuss the empirical strategy.

## 6 Data, empirical strategy and baseline regression

Our main data source are the World Development Indicators (WDI) 2008 published by the World Bank. The panel covers yearly observations for up to 104 countries over the period 1971 – 2000.<sup>11</sup>

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<sup>11</sup>Due to data limitations for skilled labor endowment (see below) we could not go beyond the year 2000.



As dependent variable we chose NET INFLOWS OF FOREIGN DIRECT INVESTMENT (FDI) IN PERCENT OF GDP (WDI 2008).<sup>12</sup> Of course, our estimates shall be determined by the numerator (FDI in current US dollars) of this variables only, but not by its demoninator (GDP in current US dollars). For this reason one of our dependent variables will be GDP in current US dollars (WDI 2008). We always keep this variable in the regression, even in case of insignificance.

Our explanatory variables are implemented in three steps. First, we specify a baseline regression consisting of relevant *economic* control variables. Then, we add our main explanatory variables (see section . Just thereafter, we test whether our results hold for the inclusion of variables which control for the quality of domestic institutions.

Generally, there is a time lag between an investor's investment *decision* and the actual *realization* of investment. An investment observed in period  $t$  is decided upon information given in one of the former periods. In order to control for this effect, the explanatory variables - being proxys for the information upon which investors make their decisions - ought to be in lags. The size of the time lag depends on the characteristics of the specific project and can vary substantially. We decided to employ all independent variables in lags of *one* period; the sole exception being GDP which must not be lagged in order to control for changes in the denominator (see above).

Following Markusen (1998a), Markusen (1998b), Markusen and Maskus (1999), Jensen (2003, p. 597) and Baltagi et al. (2008, p. 196) the most important *economic* determinants of a country's inward FDI are its market size, skilled labor endowment, and trade and investment frictions. A common proxy for MARKET SIZE is GDP; as argued above we need to employ GDP in current US dollar (WDI 2008) anyway. Our proxy

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<sup>12</sup>We also employed stocks of FDI (relying on estimates in the Word Investment Report). However, this variable turned out to be non-stationary, so we did not pursue the analysis further.

for SKILLED LABOR ENDOWMENT is the percentage of “higher school attained” of the over age 25 in the population (Barro and Lee, 2000). As these data are available every five years only, we interpolated them linearly to get yearly data. As a measure for TRADE AND INVESTMENT FRICTIONS we employed the sum of imports and exports divided by GDP (WDI 2008).<sup>13</sup>

We conducted a wide array of model specification tests including the above variables. The tests revealed a need for country and time fixed effects. Moreover, we need to control for heteroskedasticity and first order serial correlation. In order to account for these disturbances we chose a feasible generalized least square (FGLS) model with a heteroskedastic error structure of the following form:

$$y_{it} = \alpha + \beta_1 y_{it-1} + \beta_2 io_{it-1} + \beta_4 x'_{it-1} + \eta_i + \lambda_t + \epsilon_t,$$

where  $y_{it}$  represents the dependent variable in country  $i$  at year  $t$ ,  $io_{it-1}$  is the respective main explanatory variable lagged by one period,  $x'_{it}$  is the vector of control variables,  $\eta_i$  and  $\lambda_t$  represent country and time fixed effects and  $\epsilon_t$  is the error term.<sup>14</sup>

In order to broaden our baseline regression, we tested a number of further economic variables one by one. The following variables turned out to be significant: GDP PER CAPITA in constant 2000 US dollar, GDP GROWTH (both WDI 2008) and GOVERNMENT SHARE OF GDP PER CAPITA (Penn World Tables Version 6.2).<sup>15</sup>

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<sup>13</sup>This composed variable can also be interpreted as a measure for economic openness.

<sup>14</sup>The FGLS estimator has been shown to perform efficiently under heteroskedasticity and autocorrelation as compared to standard panel estimators. The procedure of estimation employed here is standard in the recent literature (see, e.g., Kilby, 2006).

<sup>15</sup>Variables which proved insignificant and were therefore omitted from the baseline regression are development level as proxied by log of GDP per capita, general government final consumption expenditure in percent of GDP, log of general government final consumption expenditure in percent of GDP (all WDI 2008), total population (one variable from WDI 2008, another one from Penn World Tables Version 6.2 which partly bases on WDI 2001), a dummy for OECD membership, log of government

In order to determine which of the six variables raised so far are robust, we include all in one regression and employ a general-to-specific approach in the spirit of Hoover and Perez (2004).<sup>16</sup> Eventually, we repeated the model specification tests including the three variables; it turned out that the above FGLS model is still the appropriate one. The results of the final baseline model are shown table 1 (not shown so far). A country's FDI inflows are the higher, the better the country is endowed with skilled labor, the lower its trade and investment frictions, the higher its GDP per capita, the higher its GDP growth and the lower its government consumption expenditure.

In the following empirical analysis, we employ INVESTOR'S RISK as proxied by the Euromoney country risk rating. It bases on a survey of experts, heads of syndication and loans, as well as data from the World Bank, forfaiting houses and credit rating agencies.<sup>17</sup> A country's overall risk score is build from nine categories: 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 forfaiting (5%). The resulting index ranges from 0 to 100, where higher values represent lower country risk.

The next session presents the results of our empirical analysis.

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share of real GDP per capita, gross national product, log of gross national product (all Penn World Tables Version 6.2). Albeit significant, GDP growth per capita (WDI 2008) could not be included due to multicollinearity problems (correlation coefficient of about 0.97 with GDP growth.

<sup>16</sup>Hoover and Perez can show by Monte Carlo simulations that their approach is quite effective in tagging the true parameters of a model. It outstripes alternative variable selection procedures like the extreme bounds approaches of Levine and Renelt (1992) and Sala-i-Martin (1997).

<sup>17</sup>Since 1993, the rating is provided semi-annually. We used the September version.

## 7 Empirical results

In order to test the hypothesis from section 4<sup>18</sup>, we employed a threshold model of the following form:

$$y_{it} = \alpha + \beta_1 y_{it-1} + \beta_2 io_{it-1} + \beta_3 cr_{it-1} + \beta_4 (io_{it-1} * cr_{it-1} * D_{0.33}) \\ + \beta_5 (io_{it-1} * cr_{it-1} * D_{0.66}) + \beta_6 (io_{it-1} * cr_{it-1} * D_1) + \beta_9 x'_{it-1} + \eta_i + \lambda_t + \epsilon_t.$$

As in section 6  $y_{it}$  represents the dependent variable in country  $i$  at year  $t$ ,  $io_{it-1}$  is a dummy for membership in the respective international organization lagged by one period,  $x'_{it}$  is the vector of control variables,  $\eta_i$  and  $\lambda_t$  represent country and time fixed effects and  $\epsilon_t$  is the error term. Further,  $cr_{it-1}$  is the Euromoney country risk index variable lagged by one period,  $io_{it-1} * cr_{it-1}$  is the interaction effect, and  $D_{0.33}(D_{0.66}, D_1)$  is a dummy variable which equals 1 if  $cr_{it-1}$  is within the first (second, third) third of the index scale of  $cr_{it-1}$  and equals 0 otherwise.

This threshold model allows for different slopes of the interaction effect across the different thirds of the scale of the country risk variable. By this, we can detect, how the effect of international delegation on FDI inflows changes conditional on the level of country risk.

As can be seen from graph 8 (so far, labeled “wtogatt\_dum\_regression”) the effect of membership in the General Agreement on Tariffs and Trade/World Trade Organization (GATT/WTO) on FDI inflows is insignificant for countries with high and low country risk, but positively significant for countries with middle country risk.<sup>19</sup> However, from this one should not infer that our hypothesis from section 4 can be confirmed; the level of

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<sup>18</sup> “The marginal effect of IO membership on FDI inflows displays an inverted U-shape form conditional on the level of country risk.”

<sup>19</sup>Note again that higher index values reflect *lower* country risk.

the effect is about the same for middle and low risk countries but the confidence interval for the latter is bigger due to less observations. So, we conclude that our hypothesis cannot be confirmed. Instead, we conclude that by joining the WTO/GATT, countries with *at least* middle country risk can increase FDI inflows whereas for countries with high country risk membership is not profitable.

The effect of membership in the International Center for the Settlement of Investment Disputes (ICSID), a sub-organization of the International Bank of Reconstruction and Development (IBRD), on FDI inflows is increasing with the level of country risk but insignificant throughout all country risk levels (cf. graph 9 (so far, labeled “icsid\_dum\_regression”)). However, the effect is not far from being significant for countries with high and high middle country risk. In contrast, the effect of membership in the International Finance Corporation (IFC), another sub-organization of the IBRD, on FDI inflows is decreasing with country risk and insignificant for countries with high country risk, high middle and middle middle country risk, but positively significant for countries with low middle country risk and nearly significant (partly even just significant) for countries with low country risk (cf. graph 10 (so far, labeled “ifc\_dum\_regression”)).

So, our hypothesis from section 4 cannot be confirmed neither for the ICSID nor for the IFC. Anyway, we got an interesting insight: whereas ICSID membership tends to be more profitable for countries with rather high (but not too high) country risk, IFC membership tends to be more profitable for countries with rather low country risk.

The results for the UN International Convention for Civil and Political Rights (ICCPR) and for the UN International Convention for Economic, Social and Cultural Rights (ICESCR) confirm the hypothesis from section 4; the effect of membership on FDI inflows is positively significant for countries with middle country risk but relatively low and

insignificant for both low and high risk countries (cf. graphs 11 and 12 (so far, labeled “iccpr\_dum\_regression and icescr\_dum\_regression”)).

Further, the effects of the UN so-called Optional Protocol, the Convention on the Recognition and Enforcement of Foreign Arbitral Awards (“New York Convention”) and the Convention against Torture and Other Cruel, Inhuman or Degrading Treatment or Punishment are insignificant throughout all levels of country risk (cf. graphs 13 – 15 (so far, labeled “optional\_dum\_regression, nyc\_dum\_regression and folter\_dum\_regression”)).

*To conclude, our hypothesis from section 4 cannot be confirmed in general. Instead, the picture is more diverse; for which type of country (low, middle or high risk country) foreign investors take IO membership as a valuable signal about a country’s investment appeal, and, hence, which type of country profits from IO membership, crucially depends on the specific IO. For the WTO/GATT and the IFC, if at all rather low and middle risk countries profit. In contrast, for the ICSID if at all rather high (but not too high) risk countries profit. Further, for the ICCPR and the ICESCR rather countries with middle country risk profit.*

One may argue that not only does membership in certain IOs foster FDI inflows, but also does higher FDI inflows facilitate membership. Given this argument would be true, our results are biased by reverse causality or endogeneity. In our mind however, the argument is not very convincing. The core determinant for IO membership is domestic institutional quality; and institutional quality will also determine FDI inflows (that why we had to control for it). But that does by no means imply that FDI inflows determines IO membership.

## 8 Conclusion and Outlook

By a simple signaling model we show that countries with low country risk become member in IOs, whereas countries with high country risk stay out. The intuitive reason for this outcome is that by becoming member in IOs low risk countries can separate from high risk countries and signal to investors that they have indeed a low country risk. Thus, once an investor observes that a country is member in IOs, she knows that it must have a low country risk, hence, is *ceteris paribus* a better investment location than a country which is not member. Consequently, member-countries should possess *ceteris paribus* higher investment than non-member-countries.

Going from theory to the real world, the question is whether foreign investors indeed take membership in certain IOs as a valuable signal about a country's country risk *given that they possess albeit imperfect information about the quality of the country's institutions and, hence, can deduce its country risk at least to some degree directly*. Presumably, countries with very weak (strong) economic or democratic institutions or a very high (low) country risk will not profit from becoming member in an IO. The bad (good) conditions in these countries are most probably open and undoubted information, thus, membership actions will not constitute any new information to investors. In contrast, countries with a middle country risk may profit. Investors will probably not be as sure about the (future) conditions in these countries. Consequently, once a country in this category becomes member, this will constitute a valuable signal to investors. *So, we hypothesize that the marginal effect of IO membership on FDI is insignificant for countries with low and high quality of domestic institutions and positively significant for countries with middle-rate quality of domestic institutions.*

Using panel data for up to 104 countries over the period 1971 – 2000, we find that the above hypothesis cannot be confirmed in general. Instead, the picture is more diverse; for which type of country (low, middle or high risk country) foreign investors take IO

membership as a valuable signal about a country's investment appeal, and, hence, which type of country profits from IO membership, crucially depends on the specific IO. For the WTO/GATT and the International Finance Corporation, if at all rather low and middle risk countries profit. In contrast, for the International Center for the Settlement of Investment Disputes if at all rather high (but not too high) risk countries profit. Further, for the UN International Convention for Civil and Political Rights and the UN International Convention for Economic, Social and Cultural Rights rather countries with middle country risk profit.

This paper can only be a first step in estimating the effects of IO membership on FDI. Further robustness checks are needed. Moreover, it would, e.g., be interesting to estimate the costs of exiting IOs explicitly. On a more fundamental level, the sanctioning machinery of IOs deserves more explicit analysis: how does it work, how has the right to use it been applied, who has incentives to do so etc.

The main goal of this paper has been to lay the foundations for estimating the effects of an international delegation of power for the investment appeal of countries. 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, in encouraging cooperation and the like, other approaches are thus needed.

Other aspects that need to be dealt with in future work include the endogenization of the delegation decisions. Under what circumstances - one would ask - are politicians particularly prone to delegate powers internationally? How can we explain that competences in some areas (like monetary policy) are more likely to be delegated than policy competences in other areas?



This leads directly to the next question, namely the normative issue: how much competence should be delegated? Will too much delegation lead to a hollowing out of democracy,<sup>20</sup> 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 very thorough analysis because they promise to become ever more relevant over time as the ever rising number of international treaties attest. While our analysis does not provide answers to these questions, we do provide first evidence that membership in international organizations can help countries to signal their investment appeal to international investors.

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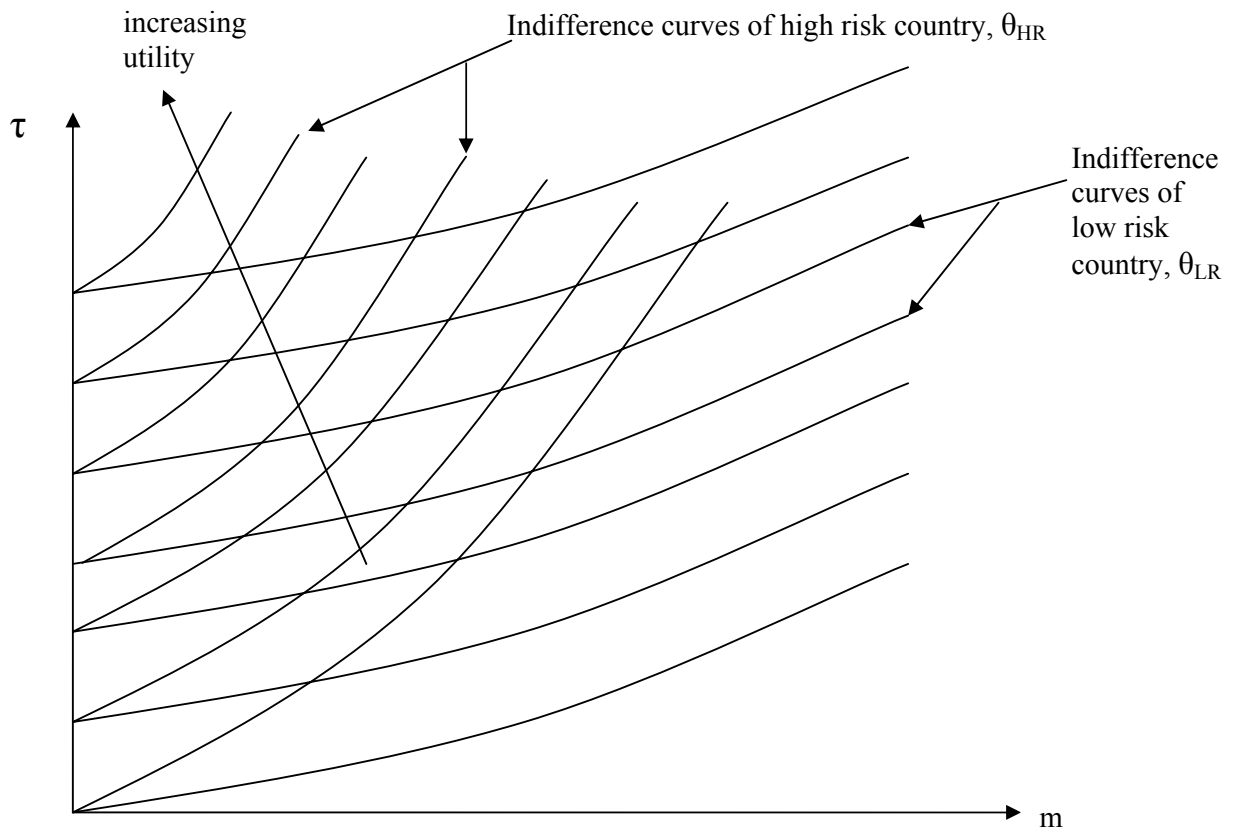
<sup>20</sup>See Frey and Stutzer (2006) for an interesting approach to address the democratic deficit of international organizations.

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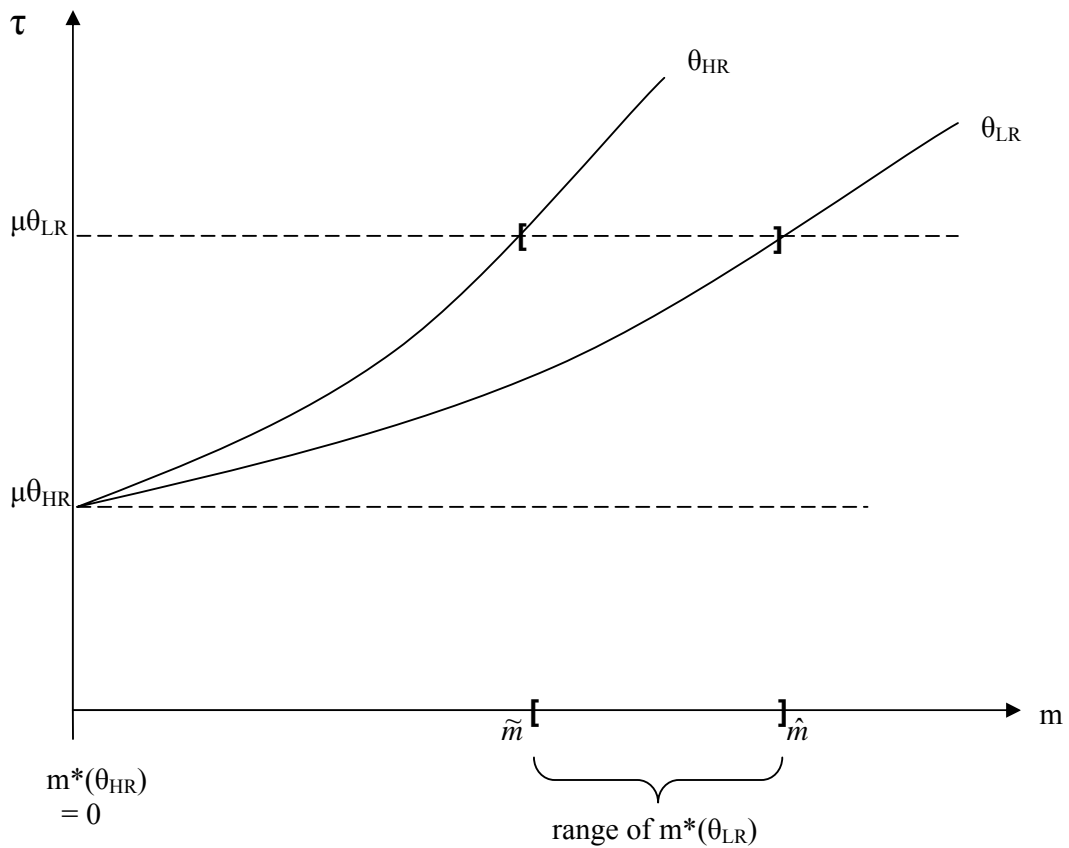
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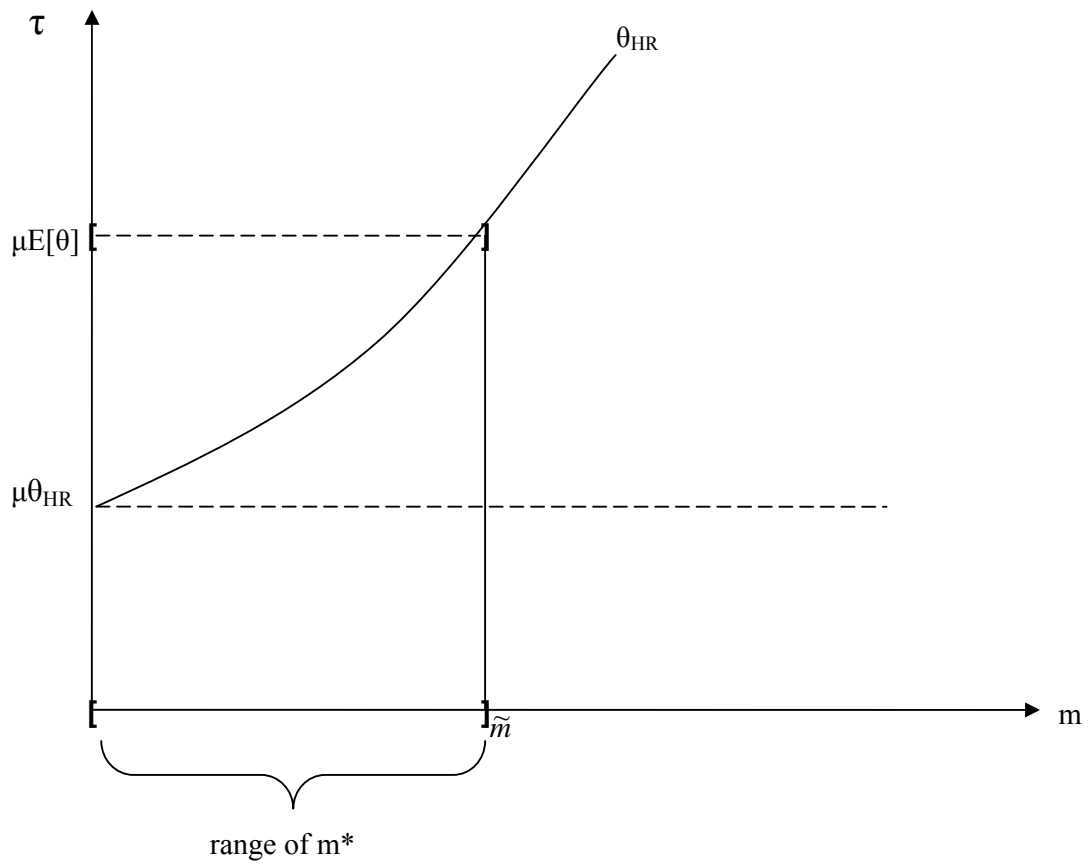
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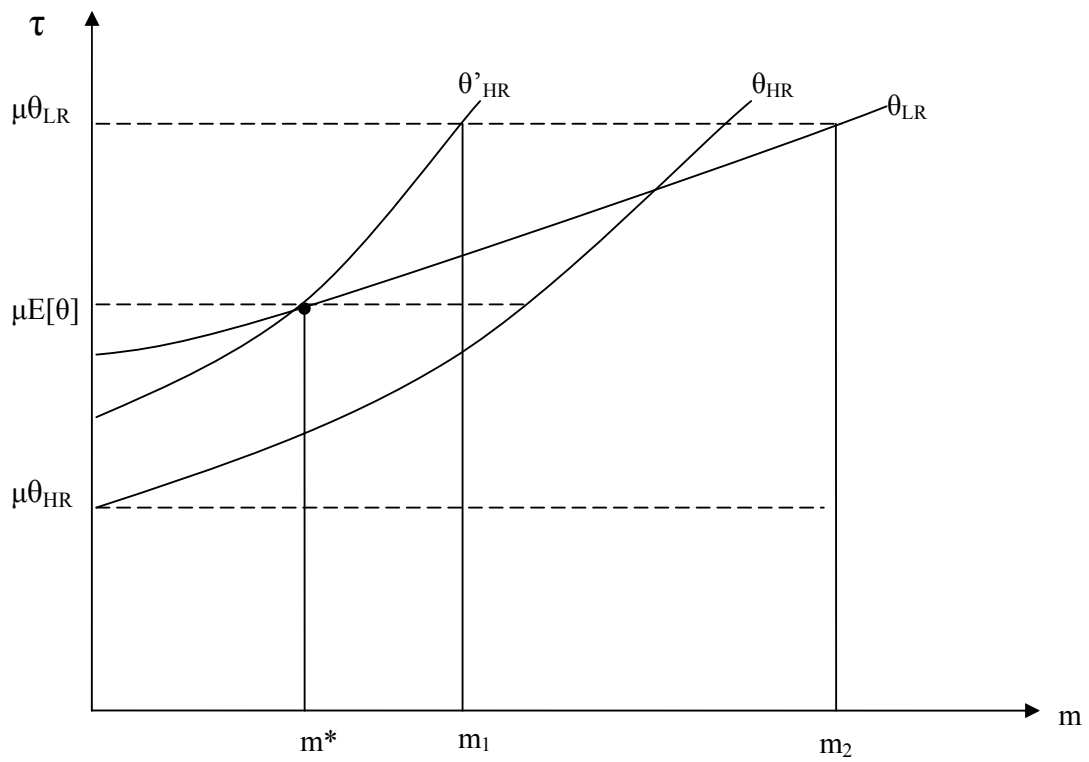
Graph 2:



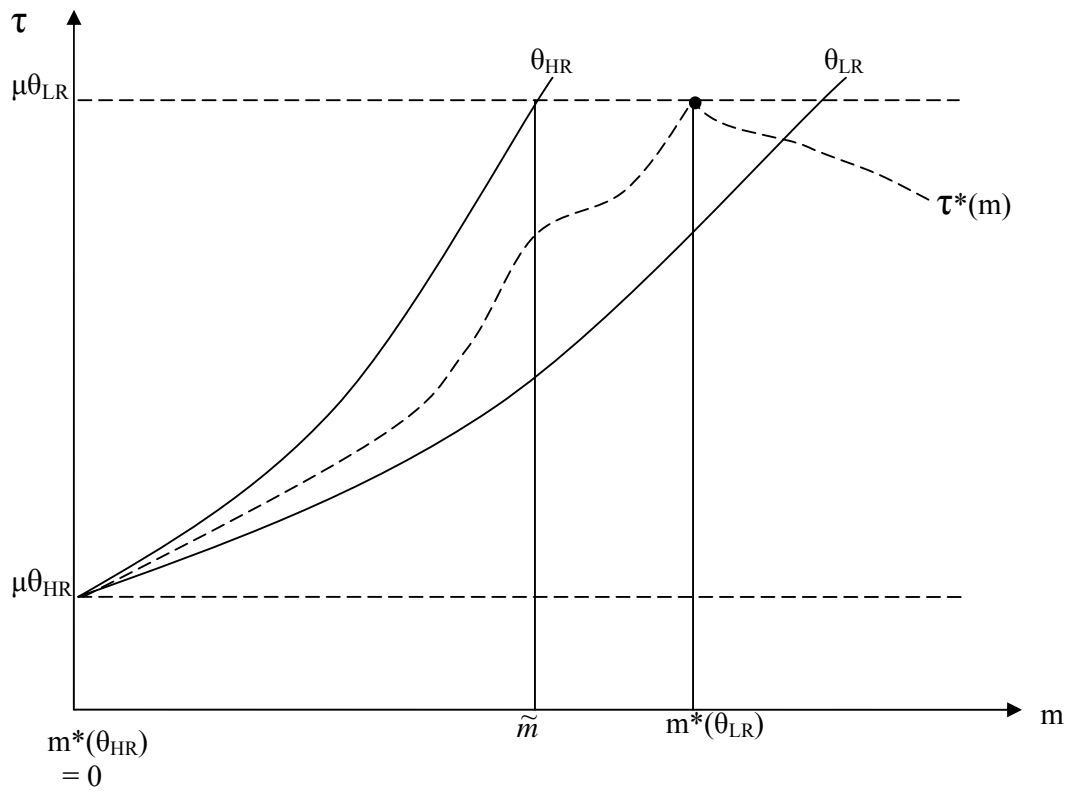
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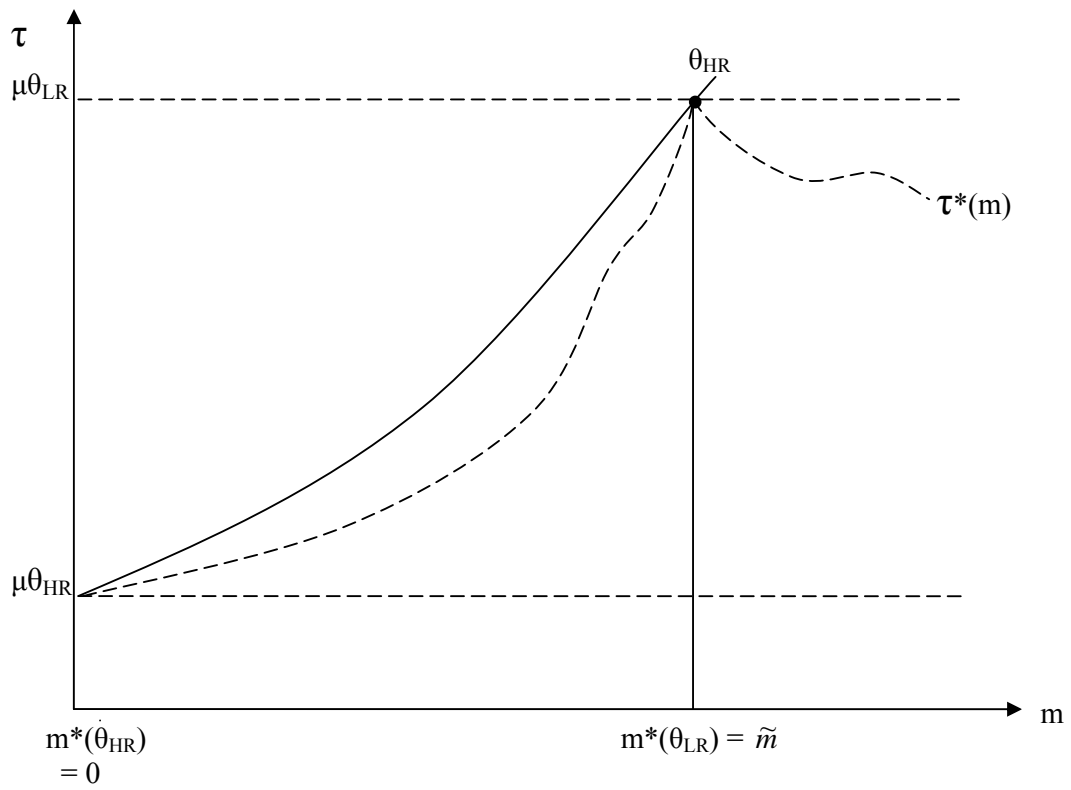
Graph 4:



Graph 5:



Graph 6:



Graph 7:

