

## Is the World Flat?

### Differential Regulation of Domestic and Foreign-Owned Firms

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### Abstract

This paper examines the determinants of differential employment restrictions applied to foreign vs. domestic firms. We develop a model of employment regulation and test its implications using data from the World Bank's *World Business Environment Survey*, conducted in 1999/2000. We find that while democratic accountability, corruption, and British legal origin reduce the extent of government intervention in firms' employment decision, they give greater advantage to domestic relative to foreign investors. Rule of law, on the other hand, has a more even effect. Better investment opportunities in the country enhance the government's bargaining power vis-à-vis investors and increase employment intervention, especially in foreign firms engaged in less tradable sectors. We also identify a host of other factors that influence employment restrictions, though none of them entail a differential impact on foreign investors. We find that after controlling for other factors, foreign investors in Latin America face a greater regulatory disadvantage vis-à-vis locals compared to other regions of the world, though this is partly counterbalanced by other effects captured in the model.

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## 1. Introduction

Globalization is believed to be making the world's economic playing field flat (Friedman, 2005). To attract investment, countries are under pressure to offer assorted incentives to foreign investors. In response, capital movements across borders, especially in the form of foreign Direct Investment (FDI), have been increasing at a very rapid pace. Indeed, FDI has now become the main source of development capital for many emerging markets.<sup>1</sup> However, the distribution of those flows is quite uneven. In many countries, the incentives being offered seem to be partial compensations for exacting government regulations that foreign investors are likely to face during the production process [Halland and Wooton, (2002) and Gorg, 2003)]. On the other hand, critics of globalization claim that governments are yielding too much sovereignty, leaving the domestic producers vulnerable to the whims of powerful transnational enterprises (TNEs).<sup>2</sup> Has the playing field become indeed tilted in favor of foreign investors, or do they still face discrimination vis-à-vis domestic entrepreneurs? Are the deviations from regulation parity between the two groups random, or are there discernible patterns related to country and firm characteristics?

Despite the centrality and popularity of these issues in the current globalization debates, systematic research on them is scant. To the best of our knowledge, there is no empirical study on the determinants of FDI policies, and the theoretical literature has mainly focused on analyzing tax holidays and equity restrictions.<sup>3</sup> However, unevenness in the treatments of foreign and domestic investors are by no means confined to those policies. Tilts and bumps on investors' paths can take many other forms; e.g., controls on financial transactions between transnational enterprises (entrepreneurs) and their local affiliates, minimum requirements for the use of local inputs, and restrictions on imports and the employment of foreign personnel. Not surprisingly, all such policies affect FDI flows [Clark (2000), Taylor (2000), and Asiedu and Lien (2004)]. It is therefore important to understand the factors that determine the wide ranges of incentive and restrictive policies that shape investment.

This paper takes a step to fill this gap in the literature by examining the differential intervention in employment decisions of domestic vs. foreign firms. We construct a model of employment regulation based on the differences between the preferences of the government and the entrepreneurs over taxation and redistribution towards workers. This motivates intervention in the employment decisions of firms, which materializes depending the political benefits and costs of such intervention in each specific case. We focus on the role played by foreign vs. domestic ownership in such calculus and derive testable

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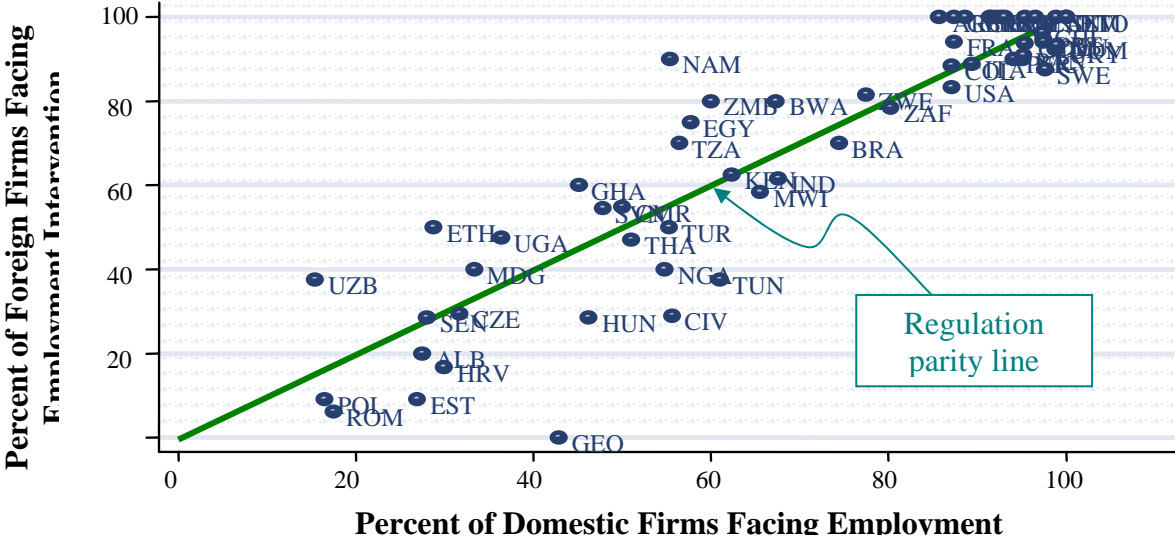
<sup>1</sup> Over the period 1991-2004, the share of FDI in total flows to developing countries increased from 24% to about 50%, while the share of official capital (loans and aid from multilateral organizations such as the World Bank) declined from 56% to 7% (World Bank, 2005).

<sup>2</sup> For more on this issue see Blomstrom and Kokko (2003).

<sup>3</sup> See Asiedu and Esfahani (2004) for a review of the theoretical literature on FDI restrictions.

implications of the model. We then test the relevant hypotheses using data on employment restrictions derived from the 1999/2000 World Bank's World Business Environment Survey (WBES) (see section 3 for a detailed description). Our analysis employs data on 6354 firms operating in 67 countries, of which 1092 have partial or whole foreign ownership.

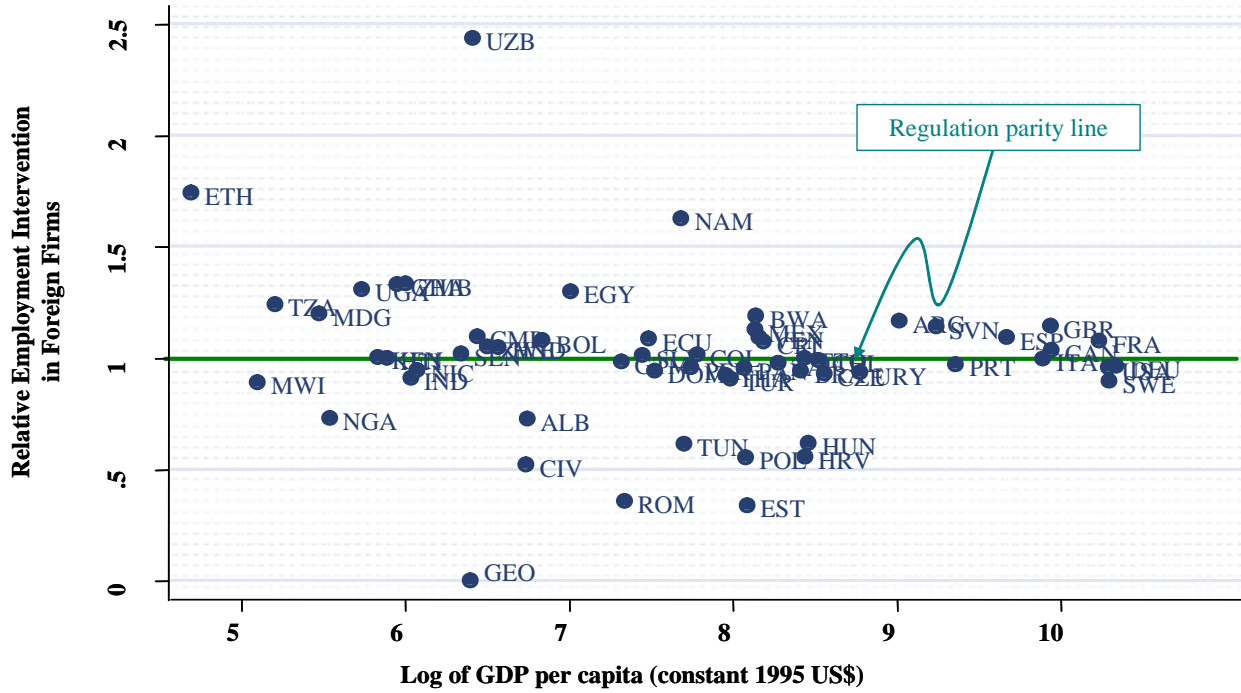
**Figure 1**  
**Intervention in Employment Decisions of Firms Across**  
**Foreign vs. Domestic Firms**



\* Intervention rate is the percent of firms that report the government at least sometimes intervenes in their employment decisions (with any frequency or intensity). Foreign firms are defined as those with majority foreign ownership. The sample is restricted to countries that have at least 6 foreign majority firms in the survey.  
 Source: World Bank's World Business Environment Survey (WBES) 2000, [info.worldbank.org/governance/wbes/](http://info.worldbank.org/governance/wbes/).

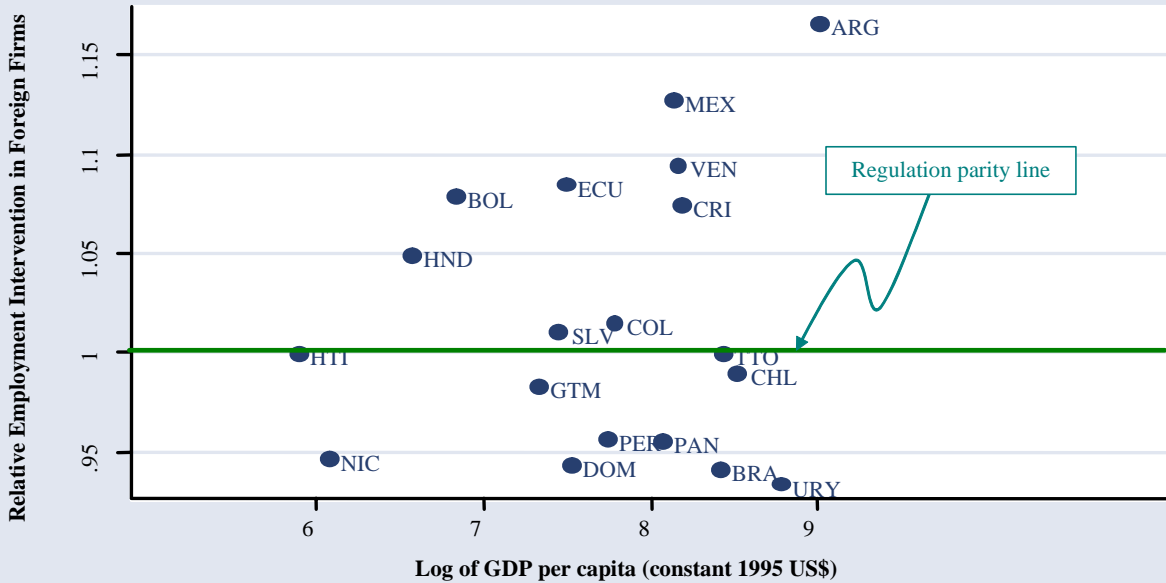
There is enormous variation in the extent of employment intervention that firms experience across countries (Figure 1, for the exact definition of intervention and other details, see Section 3 below). Although there is significant correlation between the interventions in employment decisions of foreign and domestic firms, as Figure 1 depicts, there are also substantial deviations from regulation parity between the two groups across countries. This is more clearly shown in Figure 2a that maps the relative employment intervention experience of foreign firms against GDP per capita of the countries in our sample. An immediate observation emerging from these figures is that there is no clear general bias in favor or against foreign investors in the world as a whole, though the situation varies greatly from country to country. An important part of these differences are regional, with particularly large variation among transition countries. However, as Figure 2b shows, even focusing on a region such as Latin America that has a long history of attracting foreign investment, one can observe major differences in regulatory intervention between foreign and domestic firms.

**Figure 2a**  
**Rate of Intervention in Employment Decisions of Foreign Majority Firms\***  
**Relative to Intervention Rate in Domestic Majority Firms Across, Full Sample of Countries**



**Figure 2b**

**Rate of Intervention in Employment Decisions of Foreign Majority Firms\***  
**Relative to Intervention Rate in Domestic Majority Firms in Latin America**



\* Intervention rate is the percent of firms that report the government at least sometimes intervenes in their employment decisions (with any frequency or intensity). Foreign firms are defined as those with majority foreign ownership. The sample is restricted to countries that have at least 6 foreign majority firms in the survey. Source: World Bank's World Business Environment Survey (WBES) 2000, [info.worldbank.org/governance/wbes/](http://info.worldbank.org/governance/wbes/).

Of course, the observations of differential regulations in the above figures do not control for country or firm characteristics. Identifying the relevant characteristics and finding out what factors may account for the differences in the regulation of foreign and domestic firms are the tasks of our theoretical and empirical models. Through those steps we find that the power of foreign entrepreneurs diminishes relative to their domestic counterparts as corruption rises, even though corruption seems to enable firms generally to payoff officials and reduce government intervention in their labor decisions. Interestingly, the same is true about democratic accountability. Both factors seem to enable firms to influence politics and reduce intervention in their business, but the benefits go a lot more to the domestic business owners than to foreigner investors. So, regulatory discrimination against foreign investors seems to be highest in corrupt democracies, even though overall employment restrictions are lower. These effects are quite robust even when we control for a host of other factors, including legal origin and regional effects. Interestingly, the British legal origin, which tends to reduce government intervention (as observed in previous research; e.g., Botero et al., 2004), seems to act the same way as democratic accountability, benefiting domestic investors more than foreigners. However, this is not the case for the rule of law, which seems to reduce intervention for all firms.

We also find evidence that controlling for other factors, countries with better investment opportunities—those with higher growth rates, greater openness, and more educated labor force—find it easier to be more demanding of firms, especially foreign firms, in their employment regulation practices. This result is strengthened by another finding in our empirical work that the extent of foreign presence among firms in a country—which can be an indicator opportunities for foreign investment—increases the probability of intervention in foreign relative to domestic firm. Since larger presence of foreign investors should in principle give them more power to influence the government and lower intervention in their businesses, our finding of a positive effect shows that the rise in the politicians' bargaining power as a result of increased investment opportunities is a stronger force.

The role of the government's bargaining position vis-à-vis foreign investors seems to apply particularly to the firms in the less traded sectors of the economy—construction and services—where foreign firms have fewer options to move their production elsewhere and rely on exports to the country. Indeed, controlling for other factors, foreign firms in manufacturing appear to face far less labor restrictions than their domestic counterparts, even though manufacturing firms as a whole are subject to more employment intervention than those in other sectors.

Our theoretical model shows that the weakness of labor organizations and the ability of the government to extract the producers' surpluses through taxation reduce the politicians' interest in imposing labor regulation. Similarly, the size of firm's assets and government participation in equity are

likely to make a firm a more attractive and easier target for regulation. However, these effects need not entail differential impacts on foreign firms. These points are, indeed, confirmed by our empirical work.

Finally, we consider the possible roles played by regional and neighborhood effects that may not be captured among country characteristics included in the model. We find that after controlling for other factors, foreign investors in Latin America face a greater regulatory disadvantage vis-à-vis locals compared to other regions of the world, though this is partly counterbalanced by other effects captured in the model. South Asia region represents the opposite case.

The remainder of the paper is organized as follows: Section 2 presents a model of employment regulation and derives its implications for the experience of a firm that may be jointly or wholly owned by domestic and foreign investors. Section 3 describes the data, and the empirical methodology for testing those implications and other possible effects. Section 4 presents the empirical results and Section 5 concludes.

## **2. A Model of Differential Employment Policy Towards Foreign and Domestic Investors**

### 2.1. The Setting

Consider a country that has many investment opportunities (projects), some of which are better suited to the skills and assets of foreign investors, some require a combination of foreign and domestic entrepreneurs, and the rest are the realm of the latter's comparative advantage. To keep the model simple and focus on the differential labor policies towards domestic and foreign firms once they have come into existence, we take the allocation of projects between the two groups as given. In other words, we assume that some of the available projects can only be operated by foreign investors (i.e., 100% foreign ownership), some require a given amount of sharing (i.e., joint venture), and others are only suitable for operation by domestic entrepreneurs (i.e., 100% domestic ownership).

To begin, we focus on a single project that is operated by a group of entrepreneurs who provide technological, managerial, and capital inputs for the project through the tangible and intangible assets that they own. Let  $t$  be the aggregate indicator of these inputs and let  $\phi \in [0,1]$  indicate the share of foreign entrepreneurs in this measure. We will refer to the entrepreneurs and their project as the firm.  $\phi = 0$  means full domestic ownership and  $\phi = 1$ , full foreign ownership. The values in between indicate joint ownership. The project produces  $q$  units of a product by means of the entrepreneurs' technological, managerial, and capital inputs,  $t$ , and local labor,  $\ell$ . Let the production function be constant returns to scale and Cobb-Douglas:

$$(2.1) \quad q = a\ell^\lambda t^{1-\lambda},$$

where  $a > 0$  is a parameter that represents the country characteristics that enhance business operations and increase the productivity of the project at no cost to the firm — for example, public goods, especially effective institutions and the publicly available technologies.<sup>1</sup> The parameter  $\lambda$  represents the importance of local labor in the project's operation. It is higher when local labor has better and wider ranges of assets, such as higher education or technical abilities.<sup>2</sup>

We assume that the entrepreneurs' assets are not contractible and, therefore, they need to own and control the residual rights to the project in order to recover the returns to the use of their assets. The firm must pay tax at a fixed rate,  $\tau \in [0,1]$ , on the net output. The same tax rate applies to labor income.<sup>3</sup> We assume that the labor market also has imperfections, but in that case, contracting problems only drive a wedge between the market price and the workers' reservation wage.<sup>4</sup> We treat the wage rate,  $w$ , as given and normalize the labor unit such that its reservation price (or opportunity costs) is equal to 1. Then, the wage premium is  $w - 1 > 0$ . For the output, we assume that the price,  $p$ , is exogenously given and that the market has no imperfection. A rise in  $p$  indicates an increase in demand for the product relative to its supply.

Another set of simplifying assumption concerns the nature of the firms' assets. We assume that the aggregate input,  $t > 0$ , is exogenously given and that the entrepreneurs face a dichotomous choice: they can either use all of their assets in production or withhold them entirely (in which case the project will not operate). Finally, we normalize the reservation value of the assets outside the project to zero. These assumptions facilitate the analysis, but do not change the basic results concerning the government's motives to impose employment restrictions on the project and its differential treatment of domestic and foreign investors.

We start the analysis by examining the labor input choice by the firm when the government does not intervene in the project. This is followed by an examination of the government's preferences over the

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<sup>1</sup> Thus, we model  $a$  as a summary of country characteristics that enhance the productivity of the project and also exhibit the two characteristics of a public good, i.e., these factors are nontrivial and nonexclusive.

<sup>2</sup> This idea can be formalized by specifying the production function as  $\log q = \int_0^1 s \log x(s) ds$ , where  $s \in [0,1]$  is an index for a continuum of differentiated inputs required for the production of the output and  $x(s)$  is the quantity of input of variety  $s$ . The range of input varieties supplied local labor would then be the equivalent of  $\lambda$ , the share of labor's contribution to the production. The functional form in (2.1) provides a shortcut for the analysis with this specification.

<sup>3</sup> The assumption that labor and profit income tax rates are the same is made to keep things simple. Allowing for differential taxation does not change the results of the paper.

<sup>4</sup> The reservation wage could be the value of home production. It could be also viewed as the expected wage for an unemployed workers, inclusive of the net income and utility loss due to unemployment.

labor input and its decision to regulate. We then derive the comparative statics with respect to the extent of foreign ownership and other parameters.

## 2.2. The Entrepreneurs' Preferred Level of Employment Input

The firm maximizes its after-tax profits,  $\pi(\ell)$ , which is given by:

$$(2.2) \quad \pi(\ell) = (1-\tau)(pq - w\ell).$$

Given that the entrepreneurs' opportunity cost of engaging in the project is zero, they would use their assets and operate the project as long as  $\pi \geq 0$ . Any positive profit is then distributed between foreign and domestic partners in the firm according to their shares,  $\phi$  and  $1-\phi$ , respectively. Since the marginal product of labor is very large at low levels of employment, the firm can earn positive profits at some employment levels. But, profits decline beyond some employment level and eventually become zero. The largest feasible employment in the project, where  $\pi = 0$ , is given by:

$$(2.3) \quad \ell_0 = t \left( \frac{ap}{w} \right)^{\frac{1}{1-\lambda}}.$$

The first-order condition for maximizing  $\pi$  with respect to  $\ell$  is:

$$(2.4) \quad \lambda pq = w\ell.$$

The solution to (2.4),  $\ell_F^*$ , is the firm's *preferred* level of employment:

$$(2.5) \quad \ell_F^* = t \left( \frac{\lambda ap}{w} \right)^{\frac{1}{1-\lambda}} < \ell_0.$$

## 2.3 The Government's Preferences

The politicians in charge of the country's government may benefit from the project in three different ways. First, the project adds to the tax revenue, which the politicians value because they need funding for government activities that they control. The amount of this revenue is the total income tax delivered by the project, net of the expected taxes that the workers would have paid in their alternative jobs; that is,  $\tau pq - \tau \ell$ . Second, the surplus gained by the workers,  $(1-\tau)(w-1)\ell$ , helps improve welfare and adds to the political support for the ruling politicians. Third, a similar argument applies to the firm profits earned by domestic and foreign entrepreneurs, who may contribute to the politicians in various ways. With these considerations, we specify the utility function of the politicians, expressed in terms of units of tax revenue, as:



$$\begin{aligned}
(2.6) \quad u(\ell) &= \tau pq - \tau \ell + \theta(1-\tau)(w-1)\ell + \omega(\phi)\pi(\ell) \\
&= [\tau + \omega(\phi)(1-\tau)]pq - \{[\tau + \omega(\phi)(1-\tau)]w - [\tau + \theta(1-\tau)](w-1)\}\ell \\
&= \left[\frac{\tau}{1-\tau} + \omega(\phi)\right]\pi(\ell) + [\tau + \theta(1-\tau)](w-1)\ell,
\end{aligned}$$

where  $\theta$  and  $\omega(\phi)$  are the premia that the politicians place on each unit of surplus earned by workers and the firm domestic entrepreneurs, respectively. The dependence of valuation of firm surplus on foreign share is the key feature that allows us to explore the differential treatment that foreign investors may receive. For this purpose, we specify  $\omega$  as a linear function,  $\omega(\phi) \equiv \eta + \varphi\phi$ , where  $\eta$  is the politicians' valuation of a unit of surplus earned by domestic entrepreneurs and  $\varphi$  is the preference they give to foreign investors. When  $\varphi > 0$ , the politicians prefer to see profits go to foreign entrepreneurs (because they deliver contributions more effectively or provide other benefits); when  $\varphi \leq 0$  the opposite is true. The latter is more likely when domestic entrepreneurs have a comparative advantage in engaging in domestic politics and influencing the politicians.

We assume that

$$(2.7) \quad \theta < 1 \quad \text{and} \quad \omega(\phi) < 1$$

i.e., the politicians' valuation of a dollar in the hands of workers or entrepreneurs is less than the marginal value of a dollar of tax. This is reasonable because if the government valued money more in the hands of worker or entrepreneurs than in the treasury, it could distribute its funds to them (or simply not tax their incomes).

If there is no intervention cost, the government prefers to choose the employment level by maximizing  $u$  with respect to  $\ell$  subject to the entrepreneurs' participation constraint,  $\ell \leq \ell_0$ . This constraint does not bind if the labor share,  $\lambda$ , and political weight on labor income,  $\theta$ , are sufficiently small such that:

$$(2.8) \quad [\tau + (1-\tau)\theta](w-1) - (1-\lambda)[\tau + (1-\tau)\omega(\phi)]w \leq 0.$$

When (2.8) holds, the first-order condition yields:

$$(2.9) \quad \ell_G^* = t \left( \frac{\lambda[\tau + (1-\tau)\omega]ap}{[\tau + (1-\tau)\omega]w - [\tau + (1-\tau)\theta](w-1)} \right)^{\frac{1}{1-\lambda}} = \left( \frac{[\tau + (1-\tau)\omega]w}{[\tau + (1-\tau)\omega]w - [\tau + (1-\tau)\theta](w-1)} \right)^{\frac{1}{1-\lambda}} \ell_F^*.$$

A quick examination of (2.9) shows that when  $\ell_0 > \ell_G^* > \ell_F^*$ . The latter inequality follows from the fact that the politicians place premium values on employment and taxes paid by workers.

## 2.4. The Government's Employment Policy

The divergence between the employment preferences of the firm and the government creates a motive for policy intervention in the labor input decision. The politicians' gain from intervening in employment and requiring the project to employ  $\underline{\ell}$  is

$$(2.10) \quad u(\underline{\ell}) - u(\ell_F^*) = [(\pi(\underline{\ell}) - \pi(\ell_F^*)) (\omega(\phi) + \frac{\tau}{1-\tau}) + [\tau + \theta(1-\tau)](w-1)(\underline{\ell} - \ell_F^*)].$$

Obviously,  $u(\underline{\ell}) - u(\ell_F^*)$  is increasing in  $\underline{\ell}$  up to  $\underline{\ell} = \ell_G^*$ , where it is maximized. Although the government always prefers a higher level of employment than the firm, it may refrain from imposing employment regulations on the entrepreneur because that may entail costs that could exceed the benefits from the politicians' point of view. The costs consist of administrative effort as well as the risks of costly mistakes, which may depend on the project and country characteristics, but also contain idiosyncratic random elements for individual projects. The government chooses to intervene in a project's employment level if the maximum net benefit that it can obtain from such an action is positive.

It is reasonable to assume that the intervention costs have a fixed part,  $\xi$ , but also depend on the size of required adjustment in the project's employment,  $\underline{\ell} - \ell_F^*$ . As a first-order approximation, we specify the intervention costs as  $\xi + \mu|\underline{\ell} - \ell_F^*|$ , where  $\mu$  is the marginal cost of moving employment away from the firm's choice. Then, the politicians' net benefits from imposing employment level  $\underline{\ell}$ , is

$$(2.11) \quad \underline{B}(\underline{\ell}) \equiv u(\underline{\ell}) - u(\ell_F^*) - \mu|\underline{\ell} - \ell_F^*| - \xi.$$

The government intervenes when there is an  $\underline{\ell} \leq \ell_0$  such that  $\underline{B}(\underline{\ell}) > 0$ . The following proposition shows that a necessary condition for this is that the net marginal value of employment intervention,  $N$ , must be positive:

$$(2.12) \quad N \equiv [\tau + (1-\tau)\theta](w-1) - \mu > 0.$$

Note that the first term in  $N$  is the marginal value of workers' surplus and  $\mu$  is the marginal cost of intervention to the politicians. Under this condition, if the fixed costs of intervention are not prohibitive, the politicians will impose the employment limit,  $\underline{\ell}_G^*$ , determined by:

$$(2.13) \quad \underline{\ell}_G^* = \ell_0 \quad \text{if} \quad N > (1-\lambda)[\tau + (1-\tau)\omega(\phi)]w;$$

$$(2.14) \quad \underline{\ell}_G^* = \underline{\ell}^* = \left( \frac{[\tau + (1-\tau)\omega]w}{[\tau + (1-\tau)\omega]w - N} \right)^{\frac{1}{1-\lambda}} \ell_F^* \quad \text{if} \quad (1-\lambda)[\tau + (1-\tau)\omega(\phi)]w \geq N > 0.$$

The case in (2.13) materializes if the net marginal value of employment intervention is sufficiently high to render the  $\underline{\ell} \leq \ell_0$  constraint binding. This is more likely when the political value of firm surplus,  $\omega$ , is small and the role of labor in production,  $\lambda$ , is large. When  $N$  is not sufficiently large, then if an employment regulation is imposed, it will not be constrained by  $\ell_0$ .

PROPOSITION 1. (i) Requiring the firm to employ a different number of workers than its preferred level,  $\ell_F^*$ , is not worthwhile—yields  $B(\underline{\ell}) \leq 0$ —when  $N \equiv [\tau + (1-\tau)\theta](w-1) - \mu \leq 0$ .

(ii) When  $N > 0$ , employment restriction is worthwhile only if

$$(2.15) \quad B(\underline{\ell}_G^*) = [(\pi(\underline{\ell}_G^*) - \pi(\ell_F^*))(\omega(\phi) + \frac{\tau}{1-\tau}) + N(\underline{\ell}_G^* - \ell_F^*) - \xi > 0.$$

PROOF. (i) First note that for all  $\underline{\ell} < \ell_F^*$ ,  $\underline{B}(\underline{\ell}) < 0$  because  $u(\underline{\ell}) - u(\ell_F^*) < 0$  and intervention costs are positive. When  $N \leq 0$ , according to (2.14), for the employment level that maximizes  $\underline{B}(\underline{\ell})$  we have  $\underline{\ell}^* < \ell_F^*$ . Therefore, in this case, the payoff from intervention,  $\underline{B}(\underline{\ell})$ , cannot be positive for any  $\underline{\ell}$ .

(ii) When  $N > 0$ , two situations arise. First, if  $N > (1-\lambda)[\tau+(1-\tau)\omega]w$ ,  $B(\underline{\ell})$  will be increasing for all  $\underline{\ell} < \ell_0$  and its maximum in that range occurs at  $\underline{\ell}_G^* = \ell_0$ . Thus, the government intervenes only if  $\underline{B}(\ell_0) > 0$ . Second, if  $N < (1-\lambda)[\tau+(1-\tau)\omega]w$ , then  $\underline{\ell} \leq \ell_0$  does not bind and  $\underline{\ell}^*$  is the solution to the first-order condition for  $B(\underline{\ell})$ , with  $\ell_F^* < \underline{\ell}^* \leq \ell_0$ . Therefore, government intervenes only if  $\underline{B}(\underline{\ell}^*) > 0$ . Combining these two situations yields (2.15) as the condition for intervention when  $N > 0$ . *Q.E.D.*

Proposition 1 provides the necessary relationships for examining the impact of various parameters on the decision to regulate. Given that  $\xi$  and  $\mu$  have random components, the probability that the government intervenes in a particular project,  $\Pr[N > 0 \cap B(\underline{\ell}_G^*) > 0]$ , rises with the factors that raise  $B(\underline{\ell}_G^*)$  and  $N$  at least when these indicators are in the neighborhood of 0. Therefore, to derive testable implications about the likelihood of intervention in employment decisions of a firm, we examine the derivatives of  $B(\underline{\ell}_G^*)$  and  $N$  with respect to the parameters of the model, starting with the extent of foreign ownership,  $\phi$ . Since  $N$  is independent of  $\phi$ , we only need to examine  $\partial B(\underline{\ell}_G^*)/\partial \phi$ . Using the envelope theorem and noting that  $\ell_F^*$  maximizes  $\pi(\ell)$ , that  $\pi(\underline{\ell}_G^*) < \pi(\ell_F^*)$ , that  $\ell_0$  is independent of  $\phi$ , and that  $\underline{\ell}^*$  maximizes  $B(\underline{\ell})$  when the condition in (2.14) applies, we find

$$(2.16) \quad \frac{\partial B(\underline{\ell}_G^*)}{\partial \phi} = [\pi(\underline{\ell}_G^*) - \pi(\ell_F^*)]\phi \quad \text{for } \underline{\ell}_G^* = \min\{\underline{\ell}^*, \ell_0\}.$$

Since  $\pi(\underline{\ell}_G^*) - \pi(\ell_F^*) < 0$ , intervention would increase with the extent of foreign ownership,  $\partial B(\underline{\ell}_G^*)/\partial \phi > 0$ , if  $\phi < 0$ , and vice versa.

The impact of  $t$ ,  $a$ ,  $p$ ,  $\lambda$ , and  $\xi$  on  $B(\underline{\ell}_G^*)$  is also straightforward because they don't affect  $N$ . In following derivations, we take advantages of the facts that  $\pi(\ell)/(1-\tau) = pq - w\ell$  is independent of  $\tau$  and  $\pi(\ell) \leq \pi(\ell_F^*)$  for all  $\ell$ . Also, note that  $\partial \ell_i / \partial w = \frac{-\ell_i}{(1-\lambda)w}$ ,  $\ell_i = \ell_0$  and  $\ell_F^*$ , and  $\partial q / \partial \lambda = q \log(a\ell/q)$ .

$$(2.17) \quad \frac{\partial B}{\partial t} = \frac{1}{t} [B(\underline{\ell}_G^*) + \xi]$$

$$(2.18) \quad \frac{\partial B}{\partial a} = \frac{1}{1-\lambda} \frac{1}{a} [B(\underline{\ell}_G^*) + \xi]$$

$$(2.19) \quad \frac{\partial B}{\partial p} = \frac{1}{1-\lambda} \frac{1}{p} [B(\underline{\ell}_G^*) + \xi]$$

$$(2.20) \quad \frac{\partial B}{\partial \lambda} = \frac{1}{1-\lambda} [B(\underline{\ell}_G^*) + \xi] \log(\underline{\ell}_G^*/t) + \frac{1}{1-\lambda} \log(\underline{\ell}_G^*/\ell_F^*) [\mu(\ell_F^*) + \mu \ell_F^*]$$

$$(2.21) \quad \frac{\partial B}{\partial \xi} = -1 < 0$$

All these derivatives except  $\partial B/\partial \xi$  are positive in the neighborhood of  $B(\underline{\ell}_G^*) = 0$ . Therefore, an increase in price, productivity, or the assets of the firm should increase the probability of employment intervention. An increase in the fixed cost of intervention naturally reduces the incentive to impose restrictions.

Among the parameters that affect both  $N$  and  $B(\underline{\ell}_G^*)$ ,  $\theta$  and  $\mu$  have non-ambiguous effects on the probability of intervention. The results are intuitive: intervention is more likely when the political weight of workers,  $\theta$ , is higher or the marginal cost of intervention,  $\mu$ , is lower. Formally,

$$(2.22) \quad \frac{\partial N}{\partial \theta} = (1-\tau)(w-1) > 0 \quad \text{and} \quad \frac{\partial B(\underline{\ell}_G^*)}{\partial \theta} = (1-\tau)(w-1)(\underline{\ell}_G^* - \ell_F^*) > 0.$$

$$(2.23) \quad \frac{\partial N}{\partial \mu} = -1 < 0 \quad \text{and} \quad (2.20) \quad \frac{\partial B(\underline{\ell}_G^*)}{\partial \mu} = -(\underline{\ell}_G^* - \ell_F^*) < 0.$$

The wage rate,  $w$ , raises  $N$ , and may raise  $B(\underline{\ell}_G^*)$  as well if  $\theta$  is not too small relative to  $\omega(\phi)$ . In this case, the derivative of  $B(\underline{\ell}_G^*)$  is different depending on whether  $\underline{\ell}_G^* = \ell_0$  binds or not:

$$(2.24) \quad \frac{\partial B(\ell_0)}{\partial w} = [\tau + (1-\tau)\omega(\phi)] \ell_F^* + [(\tau + \theta(1-\tau)) \frac{1-\lambda w}{(1-\lambda)w} + \frac{\mu}{(1-\lambda)w}] (\ell_0 - \ell_F^*)$$

$$(2.25) \quad \frac{\partial B(\underline{\ell}^*)}{\partial w} = (\underline{\ell}^* - \ell_F^*)(1-\tau)(\theta - \omega(\phi)) + \frac{1}{1-\lambda} N \ell_F^* / w.$$

A higher  $w$  means a larger worker surplus, which adds to politicians' interest in expanding employment. However, this is costly to the firms and may discourage regulation if the worker's political weight is not sufficiently large.

Finally, an increase in the tax rate,  $\tau$ , has ambiguous effects on employment intervention. In this case, intervention becomes more likely if  $\theta$  is relatively small compared to  $\omega$ , in which case the main force behind intervention is the politicians' interest in the tax they collect on worker's surplus:

$$(2.26) \quad \frac{\partial N}{\partial \tau} = (1-\theta)(w-1) > 0.$$

$$(2.27) \quad \frac{\partial B}{\partial \tau} = [\pi(\underline{\ell}_G^*) - \pi(\ell_F^*)] \frac{1-\omega}{1-\tau} + (1-\theta)(w-1)(\underline{\ell}_G^* - \ell_F^*).$$

### *Testable Implications of the Model*

The above results imply that all else equal, the likelihood of government intervention in employment increases with

- the importance of the contribution of local labor to the project,
- the extensiveness of the entrepreneur's technological input,
- the extent to which the economic conditions in the host country enhances the productivity of the project,
- limitations on political mechanisms for business owners to influence policymakers,
- the value politicians place on each unit of surplus earned by workers, and
- the wage premium, if preference for worker surplus is sufficiently large.

The impact of the tax rate on income and wages is unclear. The impact of foreign ownership also depends on the politician's preference for domestic relative to foreign entrepreneurs,  $-\phi$ .

Most of the above hypotheses are concerned with the regulation of labor generally, rather than the role played by foreign ownership. While we present some results regarding those hypotheses, the full exploration of those issues is the subject of a related paper of ours, Asiedu and Esfahani (2006). In this paper, our focus is on the differences in regulation that may emerge due to domestic vs. foreign ownership of the project. It is therefore important to examine the nature of parameter  $\phi$  in more detail.  $\phi$  cannot be treated as a constant across countries or industries. In fact, making such an assumption tends to yield estimates for  $\phi$  that are not distinguishable from zero because it is positive in some situations and negative in others. For this reason, we consider the role of country characteristics that may advantage or disadvantage foreign investors.

The key factor that shapes the relative political preference for domestic vs. foreign investors is the extent of their access and influence over local politicians. We highlight two elements in this respect: the extent of democratic accountability and corruption. Under dictatorships, domestic as well as foreign entrepreneurs have few rights and benefits of citizenship. As a result, domestic entrepreneurs have few advantages over foreigners in buying political influence by offering services to the dictator. More democratic settings voice and opportunities to exert influence first and foremost to the nationals compared to foreigners. Of course, to the extent that democracy is associated with the rule of law, foreign investors may also benefit from democratization, at least to the extent that they can count on due process. But, in the absence of rule of law and presence of rampant corruption, domestic entrepreneurs are likely to enjoy a larger advantage in buying influence with local politicians. Therefore, we expect the likelihood of government intervention in a firm's employment to rise with the extent of foreign ownership in countries with more democracy and greater corruption.

The extent of overall foreign investor presence in the country may be another factor that shapes the politicians' differential disposition towards regulation of firms with foreign ownership. In particular, one may expect a larger foreign presence to give that group stronger influence in the country's political system. However, large foreign presence may also indicate the significant opportunities for foreign investment, which enables the government to be more demanding of firms run by foreign investors. Therefore, the net effect of foreign investor presence in the country on relationship between foreign ownership and employment regulation is an empirical question.

If investment opportunities indeed enable the government to be bolder in imposing regulation on foreign investors, we should also observe that employment intervention rises with foreign ownership in countries with higher growth rates. Testing this effect, besides being of interest by itself, is useful for shedding more light on the results that we obtain regarding foreign presence.

There are, of course, other country characteristics that may affect the position of foreign vs. domestic investors. For example, the country's legal origin, openness, economic structure, unionization, human capital, or infrastructure may also matter in the way foreigners are treated. We explore a number of such potential effects in our empirical exercises. We also consider regional dummies that may account for the effects of location and neighborhood around the globe.

Besides country variables, firm characteristics may also play a role in the advantage or disadvantage that foreign entrepreneurs experience with regards to employment regulation. In particular, the relative power of foreign investors may vary across industries, firm sizes, and capital intensities. Foreign investors entering less tradable sectors such as construction and services may face greater disadvantage vis-à-vis their domestic counterparts compared to those who enter the more tradable production activities, which can be moved out of the country if government interventions are too stringent. Also, larger and more capital intensive firms may be better regulation targets, though it is not clear that these factors put foreign investors at greater disadvantage compared to domestic ones.

The next section describes the data and the estimation methods that we use to measure the above variable and assess their impacts on employment intervention. A summary of the indicators representing the model's variables and their associated effects is presented in Table 1.

### **3. Data**

The data for employment restrictions comes from the World Bank's World Business Environment Survey (WBES), conducted in 1999/2000. The aim of the survey was to identify the factors that constrain investment. The WBES database also has information on important firm attributes such as sales, assets, firm size, industry and ownership. The survey covered 10,032 firms in 81 countries. In general, at least about 100 firms were surveyed in each country. Within each country, at least 15 percent of the firms had foreign ownership, at least 15 percent were small (fewer than 50 employees) and at least 15 percent were large (more than 500 employees). The administration of WBES followed the regional structure of World Bank organization and, as a result, there may have been minor differences in the way some questions have been posed or the data has been collected in different regions. We address this issue in our estimation process (see below).

Our measure of employment restrictions is derived from the response by firms to the question:

**Question 1:** "How often does the government intervene in employment decisions by your firm?"

(1) never; (2) seldom; (3) sometimes; (4) frequently; (5) usually; (6) always.

To form the dependent variable for our regressions, *Employment Restriction*, we assign scores of 1 to 6 corresponding to the six responses so that a higher number implies more intervention.<sup>5</sup> We also employ in some regressions a dichotomous version of this variable, *EmpRest*, which equals 1 if a firm reported that it "sometimes," "frequently," "usually" or "always" experience government intervention, and equals zero otherwise.

Data on the answer to Question 1 is available for a total of 8,548 firms in 74 countries of which 1,572 are foreign owned. Limitations on the availability of data for other variables reduce the sample size further. Our empirical analysis employs data for up to 6354 firms in 67 countries, of which 1092 have some foreign ownership. The countries that drop out of the sample happen to be mostly small ones with few observations (an average of less than 10 foreign-owned firms per country). Table 2 reports some basic information about employment restrictions for the countries in our sample. Clearly, it shows a wide variation in the degree of restrictiveness across region and countries, for foreign owned firms as well as firms in the full sample.<sup>6</sup> The description and sources of the explanatory variables used in the estimations are provided in Table 1. The data for the country variables are averaged over 1995-99 period. The summary statistics are in Table 3.

The equation that we estimate is of the following form:

$$(3.1) \quad R_{ij} = \beta'x_{ij}(F_{ij}) + \gamma'z_{ij} + \varepsilon_{ij},$$

where  $R_{ij}$  is the measure of restriction imposed on firm  $i$  in country  $j$ ,  $x_{ij}$  is the firm and country characteristics that lead to differential regulation of foreign vs. domestic owned firms,  $F_{ij}$  is the share of foreign investors in the firm,  $z_{ij}$  is the set of variables that determine the intensity of employment regulation of domestically owned firms,  $\beta$  and  $\gamma$  are vectors of parameters to be estimated, and  $\varepsilon_{ij}$  is an error term. We estimate (3.1) using fixed-effect regression (the within country regression estimator) as well as conditional Logit and ordered Probit methods. The estimations allow for heteroscedasticity across firms and countries. The fixed-effect and conditional Logit estimators control for unobserved country effects, while the ordered Probit estimators highlight the roles played by observed country characteristics.

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<sup>5</sup> The original ordering of the answers is the reverse of the one shown in Question 1. We have re-ordered the answers to facilitate the interpretation of the results.

<sup>6</sup> Note that the graphs in Section 1 are based on the full survey and foreign firms that have majority ownership (i.e., more than 50% foreign share) whereas the data in Table 2 pertains to only to the firms in our sample. Furthermore in Table 3, we focus on all foreign firms in the sample, i.e., firms with foreign share greater than zero.



#### 4. Empirical Results

We start with regressions that treat *Employment Restriction* as a continuous dependent variable and use fixed effects to control for the direct impacts of all observed and unobserved country characteristics on the restriction measure. This also addresses any sampling and survey differences that may affect our results. However, we do use country characteristics in interactive form with the foreign share in firm equity to assess their roles in the differential treatment of foreign investors in the regulatory process. The first two columns of Table 4 show the results for the full sample as well as a restricted sample, which includes only countries that have at least six majority foreign-owned firms. Note that the results are quite similar despite the significant difference in sample size. We only keep variables in the regressions that show reasonable statistical significance.

The first two columns of Table 4 show that the coefficients of *Foreign Share*'s interactive terms with *Democratic Accountability*, *Corruption*, and *British Legal Origin* indicators are both positive and highly significant, confirming the view that these factors help domestic investors much more than foreigners to ward off government interventions. The interaction terms with *Foreign Presence* and *GDP Growth* are also positive and significant (other than the case of GDP Growth in the full sample regression). This is consistent with the view that stronger opportunities for foreign investment in the country allow the host government to be more demanding of them regarding labor regulations. Being in the tradable manufacturing industry does the opposite by giving TNE's more outside options, as shown by the negative coefficient of the interaction term with the *Manufacturing* dummy.

To test for possible regional and neighborhood effects, we included regional dummies among the explanatory variables, taking North America as the benchmark case. In the fixed effect regressions, only the dummies for Latin America and South Asia (represented by India) proved significant, representing two opposite situations. Latin American governments seem to be more discriminatory towards foreign investors, given their observed characteristics, while India turns out to be relatively more cooperative with foreign investors than predicted by the model based on its institutional and economic characteristics (democracy, legal origin, growth, etc.) Other variables that we considered as possible determinants employment intervention did not generate any significant coefficient when entering as interactive terms with *Foreign Share*.

A number of firm characteristics prove consequential for the extent of employment intervention, without differential impact on foreign vs. domestic producers. In particular, *Log of Firm Assets* (as a measure of investor input) and *Government Participation* have positive and significant coefficients, consistent with the view that they strengthen the incentives for government intervention and facilitate the process. We also experimented with asset-sales ratio as a measure of capital intensity, but did not find any

significant result. However, the *Manufacturing* dummy, entering directly besides its interaction with *Foreign Share*, has a positive coefficient, pointing to the possible facilitating roles played in the regulatory process by the industry' heavy dependence on fixed assets or by better organization of its labor force relative to other sectors.

The continuity assumption regarding the distribution of the dependent variable used in the fixed-effect regressions may seem too strong, given the discrete nature of *Employment Restriction*. To assess whether this indeed has significant consequences for the results, we also estimate an ordered Probit version of the model. However, ordered Probit does not allow one to employ fixed effects to address possible omitted variable biases. We deal with this issue in two ways, as discussed in the following.

First, we use the conditional Logit method, which brings us closest to capturing fixed effects in a discrete choice model, but requires a dichotomous version of the dependent variable *Employment Restriction*. So, we use *EmpRest*, which identifies intervention levels 3-6 as high ( $EmpRest = 1$ ) and other outcomes as low ( $EmpRest = 0$ ). The results of conditional Logit estimates using *EmpRest* in our model for the full and restricted samples are reported in the last two columns of Table 4. The remarkable similarity of the results in terms of magnitude and significance proves quite encouraging for our findings based on fixed effect regressions.

Second, we use an ordered Probit method and introduce a host of country characteristics as explanatory variables to reduce the possibility of bias due to unobserved effects. This approach also allows us to test many of the implications of our theoretical model and to identify country attributes that affect the government's propensity to restrict employment. These results of estimations based on the full and restricted samples are presented in Table 5. In that table, we also report the Probit regressions using *EmpRest* to facilitate comparisons with the conditional Logit model in Table 4. A quick comparison of similar rows in Tables 4 and 5 shows that the results of our alternative econometrics approaches are consistent with each other, suggesting that the possible biases in those estimations are likely to be small. This outcome also makes us more confident that our Probit regressions do not suffer from significant omitted variables biases and, therefore, their results regarding other variables included in the model can be reliable. With the caveat that there may still be some remaining measurement errors, we proceed to discuss the results concerning the new variables in Table 5.

The first notable result in Table 5 is that *Democratic Accountability*, *Corruption*, and *British Legal Origin* as well as *Rule of Law* indicators all have negative and significant coefficients, supporting the model's prediction that *Employment Restriction* is reduced when there are mechanisms for warding off government interventions (or, alternatively, the cost of imposing restrictions— $\mu$  and  $\xi$ —are higher for the government). It is interesting that all these variables, except *Rule of Law*, help domestic entrepreneurs

much more than foreigner. *Rule of Law*, on the other hand, seems to entail impartiality in the legal and administrative systems, putting domestic and foreign investors on an equal footing. It also empowers investors to challenge government regulations, thereby raising the cost of intervention.

The opposite signs of the direct and interactive terms involving *Democratic Accountability*, *Corruption*, and *British Legal Origin* imply that the net effects of these variables on the regulation of foreign-owned firms may be ambiguous. To gauge the net effects for various levels of foreign participation, we evaluate the overall coefficient of each variable at the first, second and third quartiles as well as the mean of foreign participation among firms that involve foreign equity. This is done in Table 6 based on the ordered Probit regression with the restricted sample shown in column (1) of Table 5. The results show that the overall impact of variations in democracy and corruption is essentially on the domestic firms rather than those with foreign participation. This is true to a much lesser extent about British legal origin.

The cluster of variables that represent economic opportunities for investment—*GDP Growth*, *Education*, and *Openness*—all have positive and highly significant coefficients. The model captures the role of these variables through parameter  $a$  and makes predictions that conform with these estimates. Among these only *GDP Growth* showed significance when used in interaction with *Foreign Share*, as we have seen earlier. As Table 6 shows, the overall impact on all investors is significantly positive and rising with foreign participation, with the heaviest regulatory consequence being experience by wholly foreign-owned businesses. On the other hand, *Foreign Presence*, which proved important in the relationship between foreign ownership and employment intervention, has little consequence for other firms and, naturally, does not show significance when entered separately (estimates not reported here).

*Union Independence*, which indicates the political muscle of workers to demand jobs (measuring  $\theta$ ), has consistently positive and significant coefficient in the Probit regressions. We also included the *Share of Agriculture in Total Employment* as a possible indicator of wage premia that industrial firms pay over the workers' reservation wage. Our model suggests that such an indicator is likely to encourage greater intervention. Indeed, the estimated coefficient of the share of employment in agriculture turns out to be positive and significant. However, it is possible this finding may have other explanations as well.

Table 5 further shows that the *Share of Social Security and Payroll Taxes* is negatively and strongly associated with employment restriction. This fits well with our model that predicts such a relationship between  $\tau$  and the probability of intervention. It confirms that when the government can benefit from a project through taxation, it is less inclined to interfere with the firm's labor decisions and reduce its profitability.

We also experimented with a host of other country characteristics to gauge possible effects not captured by our model. In particular, we used total GDP and population (as measures of country size that might indicate better prospects for investment) and GDP per capita (as a measure of the level of development). None of these variables proved consequential. The regional dummies included in the Probit regressions all carry negative signs. However, it is difficult to decipher the exact reason for this result because those dummies capture a host of factors, including nuances in survey details across regions.

## **5. Conclusion**

Is the world flat for international business? Our exploration into differences in employment interventions among firms surveyed around the globe by the World Bank shows that there may not be a major tilt in the playing field, but there are certainly bumps that are not always random. While greater political and economic openness and integration have created new opportunities for investment and growth in most countries, in some ways the battlefield has shifted to new grounds where domestic entrepreneurs may be in a better position to hold their grounds vis-à-vis foreigners. Our analysis of the pattern of employment restrictions across firms and countries shows that local businesses may be in better positions than foreign investors to circumvent government regulations. On the other hand, foreign investors seem to have major advantages in some areas, especially in tradable industries that give them easy options to move around and switch to exporting to the countries where regulations are too demanding.

Another broad implication of our findings is that, contrary to the popular view that "globalization is rolling back the nation-state," governments that do well and create investment opportunities can still be choosy. Even though they welcome trade and investment, their very success enables them to have bargaining power over the range of regulations that they view as important.

There is, of course, a lot more work required to explore these issues in different regulatory areas and to combine them into a broad theory of the business-government relations in a globalizing world. There are also empirical and theoretical limitations in this paper that need to be addressed in future work. However, our theoretical framework suggests a pathway towards tackling the problems involved and our empirical results offer a glimpse of the interesting relationships that may be uncovered as research on globalization progresses.

## References

- Asiedu, Elizabeth and Hadi Salehi Esfahani. 2006. "The Regulation of Labor Revisited," mimeo.
- Asiedu, Elizabeth and Hadi Salehi Esfahani. 2004. "The Determinants of Foreign Direct Investment Policies," mimeo.
- Asiedu, Elizabeth and Donald Lien. 2004. "Capital Controls and Foreign Direct Investment," *World Development*, 32 (3) 479-490.
- Blomstrom, Magnus and Ari Kokko. 2003. "The Economics of Foreign Direct Investment Incentives," NBER Working Paper No. 9489.
- Botero, Juan C., Simeon Djankov, Rafael La Porta, Florencio Lopez-de-Silanes, Andrei Shleifer. 2004. "The Regulation of Labor." *The Quarterly Journal of Economics*, 119.4: 1339-1382.
- Clark, Steven W. 2000. "Tax Incentives for Foreign Direct Investment: Empirical Evidence on Effects and Alternative Policy Options," *Canadian Tax Journal*. 48: 1139-1180.
- Friedman, Thomas L. 2005. *The World Is Flat: A Brief History of the Twenty-first Century*, New York: Farrar, Straus and Giroux.
- Javorcik, Beata S. and Mariana Spatareanu. 2004. "Do Foreign Investors Care About Labor Market Regulations?" mimeo, World Bank.
- Halland , Jan I. and Ian Wooton. 2002. "Multinational Investment, Industry Risk and Policy Competition," CEPR Discussion Paper 3154.
- Holger Gorg. 2003. "Foreign Direct Investment, Investment Incentives and Firing Cost: A Disadvantage for Inflexible Europe?," EEG Working Paper No. 30/2003.
- La Porta, Rafael, Florencio Lopez-de-Silanes, Andrei Shleifer and Robert Vishny. 1998. "Law and Finance," *Journal of Political Economy*, 106: 1113-55.
- Morgan, Julian, Veronique Genre and Caroline Wilson. 2001. "Measuring Employment Protection Security Using Surveys of Employers in Europe," *Industrial Relations*, 40: 54-72.
- Taylor, Christopher T. 2000. "The Impact of Host Country Government Policy on U.S. Multinational Investment Decisions," *World Economy*. 23: 635-648.
- World Bank (2005). *World Development Indicators*.

**Table 1. Description of the Variables and Parameters\***

<b>Relevant Parameter</b>	<b>Impact on Restrictions</b>	<b>Description of the Variables</b>	<b>Source</b>
$t$ : Investor input	Positive	<i>Log of Firm Assets</i> : Natural log of firm's assets	WBES
$\lambda$ : Contribution of Local Labor	Positive	<i>Education</i> : The average years of schooling in the population 25 years and older.	Barro and Lee (200)
$a$ : Productivity-Enhancing Country Characteristics	Positive	<i>Democratic Accountability</i> : A measure of the responsiveness of the government to its citizens. Ranges from 1-6.	ICRG (Political Risk Services)
		<i>Corruption</i> : Measures corruption within the political system in the form of "excessive patronage, nepotism, job reservations favors-for-favors and suspiciously close ties between politics and business. Ranges from 1-6.	ICRG (Political Risk Services)
		<i>GDP Growth</i> .	World Bank (2005)
		<i>Openness</i> : Trade (exports plus imports) as a share of GDP	World Bank (2005)
$\theta$ : Political Pressure for Employment Expansion	Positive	<i>Union Independence</i> : Index takes the values of 1 to 4 with the following definitions: (1) constant pattern of violations of the freedoms, rights of trade unions; (2) frequent violations of the freedoms, rights of trade unions; (3) occasional breaches of respect for the freedoms, rights of trade unions; and (4) unqualified respect for the freedoms, rights of trade unions. We recoded it as a dichotomous indicator which takes on value 1 when definition (4) applies and 0 otherwise.	Human Rights Guide (1992)
$\tau$ : Potential for Collect Direct Taxes	Negative	<i>Share of Social Security and Payroll Taxes</i> as percentages of total tax revenue	IMF's <i>Government Finance Statistics</i>
$w - 1$ : The Wage Premium	Positive if $\theta/\omega$ is sufficiently large	<i>Share of Agriculture in Total Employment</i> (as a proxy)	World Bank (2005)
$\phi$ : Foreign Equity Share	Ambiguous	<i>Foreign Share</i> : Share of foreign investors in firm equity	WBES
$\mu$ and $\xi$ : Costs of Government Intervention	Negative	<i>Rule of Law</i> : Measures the strength and impartiality of the legal system and the observance of the rule of law. Ranges from 1-6.	ICRG (Political Risk Services)
		Inverse of <i>Government Participation</i> , Share of Government Ownership in firm equity. A higher share implies a lower marginal cost of intervention.	WBES

**Table 2. Employment Restrictions by Country\***

Country/Region	Percent of Firms with Partial or Whole Foreign Ownership	All Firms		Firms with Foreign Ownership	
		Number of Firms	Percent of firms for which the Employment Intervention Index $\geq 3$	Number of Firms	Percent of firms for which the Employment Intervention Index $\geq 3$
<b><i>Transition Countries</i></b>					
Albania	12	149	19	18	11
Armenia	2	113	5	2	0
Azerbaijan	2	121	20	3	0
Belarus	7	119	17	8	13
Bulgaria	9	114	12	10	10
Croatia	10	121	10	12	8
Czech Republic	16	123	20	20	15
Estonia	17	125	7	21	10
Hungary	6	99	38	6	33
Kazakhstan	6	112	13	7	14
Lithuania	5	77	13	4	0
Moldova	2	108	11	2	100
Poland	9	160	13	15	20
Romania	19	81	16	15	20
Russian Federation	2	486	10	9	22
Slovak Republic	4	115	43	5	60
Slovenia	13	122	32	16	25
Ukraine	4	209	20	8	13
<b><i>Latin America &amp; Caribbean</i></b>					
Argentina	33	90	78	30	97
Bolivia	24	85	91	20	95
Brazil	26	182	60	48	60
Chile	34	87	94	30	97
Colombia	36	94	80	34	76
Costa Rica	27	62	85	17	94
Dominican Republic	23	84	95	19	95
Ecuador	14	64	78	9	89
El Salvador	20	70	96	14	86
Guatemala	13	63	86	8	88
Haiti	21	78	99	16	94
Honduras	16	70	96	11	100
Mexico	15	54	85	8	100
Nicaragua	10	72	93	7	86
Panama	18	65	92	12	92
Peru	21	81	86	17	76
Trinidad & Tobago	19	72	99	14	100
Uruguay	15	73	95	11	82
Venezuela, RB	26	70	81	18	78

**Table 2 (Continued). Employment Restrictions by Country\***

Country/Region	Percent of Firms with Partial or Whole Foreign Ownership	All Firms		Firms with Foreign Ownership	
		Number of Firms	Percent of firms for which the Employment Intervention Index $\geq 3$	Number of Firms	Percent of firms for which the Employment Intervention Index $\geq 3$
<b><i>Sub-Saharan Africa</i></b>					
Botswana	44	52	52	23	61
Cameroon	59	27	41	16	44
Cote d'Ivoire	41	27	37	11	27
Ethiopia	11	56	9	6	0
Ghana	45	33	15	15	27
Kenya	42	55	35	23	43
Madagascar	19	52	10	10	10
Malawi	35	34	35	12	42
Namibia	36	45	47	16	75
Nigeria	22	50	20	11	9
Senegal	24	21	24	5	40
South Africa	28	75	59	21	52
Tanzania	43	35	37	15	53
Uganda	28	53	21	15	27
Zambia	31	35	26	11	18
Zimbabwe	26	74	55	19	53
<b><i>Western Europe</i></b>					
France	0	21	71	0	
Germany	27	96	88	26	85
Italy	26	78	94	20	90
Portugal	26	86	99	22	100
Spain	19	93	86	18	89
Sweden	17	90	94	15	93
United Kingdom	10	77	88	8	100
<b><i>Others</i></b>					
Canada	23	95	94	22	100
Egypt, Arab Rep.	17	64	55	11	73
India	29	170	40	50	34
Thailand	29	414	27	122	22
Tunisia	14	37	38	5	0
Turkey	8	143	43	12	17
United States	8	96	80	8	63
<b>Total</b>	17	6,354	46	1,092	55

\* An employment intervention index  $\geq 3$  implies the firm reported that the government "sometimes," "always," "usually" or "frequently" intervened in employment decisions.



**Table 3: Summary Statistics**

<b>Variable</b>	<b>Mean</b>	<b>Std. Dev.</b>	<b>Min</b>	<b>Max</b>
<i>Employment Restriction</i>	3.60	1.97	1.00	6.00
<i>Percent of Government Ownership</i>	4.82	20.08	0.00	100.00
<i>Log of Firm Assets</i>	13.61	6.85	0.00	25.89
<i>Foreign Share</i> (Share of foreign investors in firm equity)	0.14	0.31	0.00	1.00
<i>Foreign Presence</i> (Share of majority foreign owned firms in country sample of WBES dataset)	0.03	0.07	0.00	0.40
<i>Manufacturing Dummy</i>	0.36	0.48	0.00	1.00
<i>Education</i> (Average years of schooling in the population 25 years and older)	1.80	0.42	0.20	2.50
<i>Democratic Accountability</i>	4.47	1.01	1.73	6.00
<i>Rule of Law</i>	4.29	1.17	2.00	6.00
<i>Corruption</i>	3.54	1.09	1.00	5.30
<i>Openness</i> (Share of Trade in GDP)	60.71	26.44	18.17	110.82
<i>GDP Growth</i> (% per year)	3.18	1.86	-1.20	7.00
<i>Union Independence</i>	0.35	0.48	0.00	1.00
<i>Share of Agriculture in Total Employment</i>	0.24	0.20	0.01	0.80
<i>Share of Social Security and Payroll Taxes</i>	0.17	0.17	0.00	0.51

**Table 4: Employment Intervention and Foreign Ownership**

Estimation Method: Country Fixed Effect and Conditional Logit  
 (*p*-values are given in parentheses below coefficient estimates)

Explanatory Variables:	Fixed Effect		Conditional Logit Regressions	
	Dependent Variable: Employment Restriction, Range 1-6		Dependent Variable: EmpRest Dummy (= 1 for <i>Employment Restriction</i> ≥ 3, = 0 Otherwise) <sup>b</sup>	
	(1) Country Fixed Effect, Restricted Sample <sup>a</sup>	(2) Country Fixed Effect, Full Sample	(3) Country Fixed Effect, Restricted Sample <sup>a</sup>	(4) Country Fixed Effect, Full Sample
<i>Foreign Share</i>	-2.611*** (0.001)	-2.219*** (0.002)	-4.115*** (0.005)	-3.309** (0.030)
<i>Foreign Share* Democratic Accountability</i>	0.262*** (0.003)	0.229*** (0.006)	0.398** (0.023)	0.322* (0.074)
<i>Foreign Share* Corruption</i>	0.247** (0.013)	0.236** (0.013)	0.319* (0.092)	0.309 (0.129)
<i>Foreign Share* British Legal Origin</i>	0.288** (0.032)	0.254** (0.048)	0.600*** (0.010)	0.491** (0.035)
<i>Foreign Share* Foreign Presence</i>	1.361** (0.021)	1.153** (0.039)	1.648* (0.074)	1.342 (0.131)
<i>Foreign Share* GDP Growth</i>	0.090** (0.021)	0.052 (0.125)	0.226*** (0.000)	0.149** (0.032)
<i>Foreign Share* Manufacturing Dummy</i>	-0.279** (0.030)	-0.279** (0.020)	-0.587*** (0.002)	-0.611*** (0.001)
<i>Manufacturing Dummy</i>	0.101** (0.030)	0.089** (0.020)	0.239*** (0.008)	0.254*** (0.000)
<i>Percent of Government Ownership</i>	0.006*** (0.000)	0.005*** (0.000)	0.006** (0.040)	0.007*** (0.003)
<i>Log of Firm Assets</i>	0.026*** (0.000)	0.025*** (0.000)	0.041*** (0.005)	0.037*** (0.008)
<i>Foreign Share* Latin America</i>	0.330** (0.031)	0.281* (0.054)	0.734** (0.011)	0.537* (0.063)
<i>Foreign Share* South Asia</i>	-1.353** (0.022)	-1.243** (0.029)	-2.686*** (0.000)	-2.416*** (0.000)
<i>Constant</i>	2.856*** (0.000)	2.524*** (0.000)		
Number of Firms	4780	6354	4780	6354
Number of Countries	57	67	57	67

**Notes:** \* Significant at 10% , \*\* Significant at 5% and \*\*\* Significant at 1%.

<sup>a</sup> Sample of countries included in the survey with at least six majority foreign-owned firms.

<sup>b</sup> An employment intervention index ≥ 3 implies the firm reported that the government "sometimes," "always," "usually" or "frequently" intervened in employment decisions.

**Table 5: Employment Intervention and Foreign Ownership**

Estimation Method: Ordered Probit and Probit Regressions  
 (*p*-values are given in parentheses below coefficient estimates)

Explanatory Variables:	Ordered Probit Regressions		Probit Regressions	
	Dependent Variable: Employment Restriction, Range 1-6		Dependent Variable: EmpRest Dummy (= 1 for Employment Restriction ≥ 3, = 0 Otherwise) <sup>b</sup>	
	(1) Restricted Sample <sup>a</sup>	(2) Full Sample	(3) Restricted Sample <sup>a</sup>	(4) Full Sample
<i>Foreign Share</i>	-2.384*** (0.001)	-2.070*** (0.003)	-3.151*** (0.002)	-2.780*** (0.004)
<i>Foreign Share*Democratic Accountability</i>	0.263*** (0.004)	0.248*** (0.007)	0.368*** (0.003)	0.348*** (0.004)
<i>Foreign Share*Corruption</i>	0.184** (0.029)	0.162* (0.052)	0.190 (0.134)	0.159 (0.204)
<i>Foreign Share*British Legal Origin</i>	0.169 (0.203)	0.158 (0.229)	0.091 (0.647)	0.052 (0.792)
<i>Foreign Share*Foreign Presence</i>	1.198** (0.033)	1.133** (0.043)	2.493*** (0.003)	2.533*** (0.003)
<i>Foreign Share* GDP Growth</i>	0.087** (0.036)	0.041 (0.318)	0.092 (0.120)	0.046 (0.431)
<i>Foreign Share* Manufacturing Dummy</i>	-0.250** (0.043)	-0.242** (0.048)	-0.282 (0.102)	-0.282 (0.101)
<i>Manufacturing Dummy</i>	0.119*** (0.007)	0.104** (0.016)	0.169*** (0.005)	0.163*** (0.005)
<i>Percent of Government Ownership</i>	0.001 (0.259)	0.002 (0.147)	0.000 (0.730)	0.001 (0.669)
<i>Log of Firm Assets</i>	0.020*** (0.000)	0.019*** (0.000)	0.026*** (0.000)	0.026*** (0.000)
<i>Foreign Share* Latin America</i>	0.291* (0.066)	0.257 (0.101)	0.367 (0.112)	0.315 (0.169)
<i>Foreign Share* South Asia</i>	-0.927** (0.025)	-0.767* (0.062)	-1.231* (0.057)	-1.047 (0.105)
<i>Democratic Accountability</i>	-0.257*** (0.000)	-0.218*** (0.000)	-0.246*** (0.000)	-0.198*** (0.002)
<i>Corruption</i>	-0.089** (0.019)	-0.083** (0.028)	-0.113** (0.039)	-0.110** (0.042)
<i>Rule of Law</i>	-0.204*** (0.000)	-0.124*** (0.004)	-0.229*** (0.000)	-0.132** (0.030)
<i>British Legal Origin</i>	-0.354*** (0.000)	-0.291*** (0.001)	-0.385*** (0.007)	-0.321** (0.023)

**Table 5 (Continued): Employment Intervention and Foreign Ownership**

Estimation Method: Ordered Probit and Probit Regressions  
 (*p*-values are given in parentheses below coefficient estimates)

Explanatory Variables:	Ordered Probit Regressions		Probit Regressions	
	<i>Dependent Variable: Employment Restriction, Range 1-6</i>		<i>Dependent Variable: EmpRest Dummy (= 1 for Employment Restriction ≥ 3, = 0 Otherwise)<sup>b</sup></i>	
	(1) Restricted Sample <sup>a</sup>	(2) Full Sample	(3) Restricted Sample <sup>a</sup>	(4) Full Sample
<i>GDP Growth (% per year)</i>	0.049** (0.013)	0.089*** (0.000)	0.057** (0.039)	0.089*** (0.001)
<i>Education</i>	0.878*** (0.000)	0.659*** (0.000)	0.901*** (0.000)	0.656*** (0.000)
<i>Openness</i>	0.011*** (0.000)	0.009*** (0.000)	0.009*** (0.000)	0.007*** (0.000)
<i>Union Independence</i>	0.744*** (0.000)	0.537*** (0.000)	0.695*** (0.000)	0.447*** (0.002)
<i>Share of Agriculture in Total Employment</i>	1.386*** (0.000)	0.860*** (0.001)	1.090*** (0.004)	0.489 (0.138)
<i>Share of Social Security and Payroll Taxes</i>	-1.657*** (0.000)	-1.555*** (0.000)	-1.525*** (0.000)	-1.456*** (0.000)
<i>Transition Countries</i>	-2.051*** (0.000)	-2.215*** (0.000)	-2.013*** (0.000)	-2.122*** (0.000)
<i>Sub-Saharan Africa</i>	-1.630*** (0.000)	-1.659*** (0.000)	-1.675*** (0.000)	-0.399** (0.021)
<i>Middle East &amp; North Africa</i>	-1.557*** (0.000)	-1.521*** (0.000)	-1.473*** (0.000)	-1.167*** (0.000)
<i>Latin America &amp; Caribbean</i>	-0.206* (0.097)	-0.119 (0.338)	-0.507*** (0.003)	-1.707*** (0.000)
<i>East Asia and Pacific</i>	-2.330*** (0.000)	-2.146*** (0.000)	-2.222*** (0.000)	-1.417*** (0.000)
<i>South Asia</i>	-1.205*** (0.000)	-1.260*** (0.000)	-1.143*** (0.000)	-2.054*** (0.000)
<i>Constant</i>			1.075** (0.025)	1.002** (0.038)
Number of Firms	3667	3781	3667	3781
Number of Countries	40	41	40	41

**Notes:** \* Significant at 10% , \*\* Significant at 5% and \*\*\* Significant at 1%.

<sup>a</sup> Sample of countries included in the survey with at least six majority foreign-owned firms.

<sup>b</sup> An employment intervention index ≥ 3 implies the firm reported that the government "sometimes," "always," "usually" or "frequently" intervened in employment decisions.

**Table 6. Estimated Effect for Domestic versus Foreign Firms Based on the Probit Regression for Restricted Sample**

Variable	Domestic Firms, Foreign Ownership = 0	Foreign Firms			
		25 <sup>th</sup> Percentile, Foreign Ownership = 40%	50 <sup>th</sup> Percentile, Foreign Ownership = 65%	Mean, Foreign Ownership = 66%	75 <sup>th</sup> Percentile, Foreign Ownership = 100%
<i>Manufacturing Dummy</i>	0.119*** (0.007)	0.019 (0.697)	-0.044 (0.554)	-0.046 (0.538)	-0.055 (0.242)
<i>Democratic Accountability</i>	-0.257*** (0.000)	-0.152*** (0.002)	-0.086 (0.175)	-0.083 (0.193)	0.006 (0.944)
<i>Corruption</i>	-0.089** (0.019)	-0.015 (0.691)	0.031 (0.569)	0.032 (0.551)	0.174 (0.223)
<i>British Legal Origin</i>	-0.354*** (0.000)	-0.286*** (0.003)	-0.244** (0.032)	-0.242** (0.035)	-0.185 (0.208)
<i>GDP Growth (% per year)</i>	0.049** (0.013)	0.084*** (0.000)	0.106*** (0.000)	0.106*** (0.000)	0.136*** (0.000)
<i>Latin America &amp; Caribbean</i>	-0.206* (0.097)	-0.090 (0.473)	-0.017 (0.032)	-0.014 (0.921)	0.085 (0.630)
<i>South Asia</i>	-1.205*** (0.000)	-1.576*** (0.000)	-1.808*** (0.000)	-1.817*** (0.000)	-2.132*** (0.000)