

DEMOCRATIC ACCOUNTABILITY, REGULATION AND INWARD
INVESTMENT POLICY

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We examine the effect of domestic political accountability on leaders' strategies for attracting foreign direct investment to less developed countries. We consider two policy areas: the tax burden imposed on firms and the regulatory environment in which they operate. We find that democratic governments are more likely to offer relatively lower tax rates to foreign investors, whereas autocratic governments are more likely to offer relatively lax regulation. This result is driven by the greater elasticity of the political survival function to environmental and labor regulations in more democratic countries. Analyses of firm-level survey data confirm our main theoretical conclusions.

In Thailand, new private development requires environmental impact reports and hearings with local residents, obstacles that have snarled a number of high-profile projects. In Dawei, the government simply told local residents to leave.

– *New York Times*, November 26, 2010.

1. INTRODUCTION

On September 29th, 2009, a Thai court ordered the suspension of 76 operations worth \$12 billion at an industrial complex in Map Ta Phut due to their breach of environmental provisions in the country's new constitution. The following year, plans emerged for the construction of a new Thai industrial project expected to be 10 times bigger – in Dawei, Burma.¹

This study analyses the effect of domestic politics on a leader's choice of policy instruments used to attract foreign direct investment (FDI). We model endogenously determined policies within a political economy framework that accounts for the trade-off between attracting FDI and maintaining political control. We set up a two-period political agency model (Barro, 1973) in which a leader chooses the combination of tax and regulatory levels that maximizes the government's expected lifetime revenue from taxing firms.

We define regulation as legally enforced restrictions on profit-maximizing firm behavior that are designed to internalize social costs, such as environmental pollution. In choosing optimal policy bundles, leaders take into account (i) the likelihood of attracting foreign investment, which is decreasing in both tax and regulation, and

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¹This case study is presented in more detail in Appendix A. Figures taken from *Financial Times*, "Thai Court Rules 65 Projects Remain Suspended," December 2, 2009 (available at The Financial Times online), and *New York Times*, "An Industrial Project That Could Change Myanmar," November 26, 2010 (available at The New York Times online). Both articles were accessed on February 10th, 2011.

(ii) their own political survival, which we model as an increasing and concave function of regulation.²

The model predicts how the composition of each government's revenue-maximizing policy package will vary with the level of democratic development. We show that more democratic governments will attract FDI by offering relatively lower tax burdens and, conversely, more autocratic governments will attract FDI via relatively lighter regulatory standards.

Our analysis applies particularly to cases of cost seeking or vertical FDI (Helpman, 1984), in which foreign firms locate in a country to take advantage of low variable costs. In such a setting, governments cannot offer potential foreign investors an attractive host market in which to sell their output; nor can they promise access to sophisticated technologies or highly skilled labor. Instead, they must rely on low wages and cost-reducing policy measures such as low-tax environments or lax regulation to generate FDI inflows.

We test our theoretical proposition using pooled cross-sectional firm-level data from 30 eastern European and central Asian countries that measure the extent to which enterprises consider labor regulations and tax rates as obstacles to doing business. We create a measure based on the difference between these two survey responses, which allows us to back out the firm-specific common error component. We refer to this as the Relative Obstacle Scale (*ROS*). We use the *ROS* as our dependent variable, and find results that support our theory: Foreign firms' perceptions of the regulatory burden relative to the tax burden are significantly higher in countries with stronger democratic institutions.

The analysis provides one explanation of the observation that biophysical environments in autocracies are generally more polluted than in democracies, as shown by Congleton (1992), Farzin and Bond (2006), and Bernauer and Koubi (2009) among others. Indeed, our model describes a generalized setting in which any form of regulation which is salient and valuable to citizens is more likely under democracy.

We build on a long line of literature showing that, all else equal, firms will make location choices to minimize their costs relating to tax (Baldwin and Krugman, 2004; Davies and Eckel, 2010; Davies and Voget, 2010; Wilson, 1999) and regulation (Cole et al., 2006; Javorcik and Spatareanu, 2005). Our study is also related to Davies and Ellis (2007), who study the FDI-receiving government's choice of tax rate and performance requirements, such as local content or wage level requirements.

We also contribute to the literature on the effect of democracy on FDI inflows. Perhaps surprisingly, there is no clear evidence showing that democracies receive significantly more FDI than more autocratic countries. For example, Yang (2007) finds no discernible positive relationship between democracy and FDI. Busse (2003) notes a negative relationship during the 1970s, and a positive one thereafter – a finding he attributes to the coinciding shift from primary sector investment toward investment in manufacturing and services.

The political science literature is also ambiguous on the nature of the causal relationship: While Jensen (2003) finds a positive effect of democracy on FDI inflows, Li and Resnick (2003) show that, once property rights are controlled for, the effect becomes *negative*, a finding that gives credence to the idea that there may be little else inherently attractive about a democracy for foreign investors. Choi and Samy (2008)

²We also consider the case where tax rates affect political survival.

conclude that democracy is at best weakly associated with increases in FDI inflows. Mathur and Singh (2007) observe that “while democratic countries ensure provision of political and civil rights for citizens, these are not an automatic guarantee of economic freedom. The correlation between the democracy index and [...] indices of economic freedom is surprisingly low. Hence more democratic countries may receive less FDI flows if economic freedoms are not guaranteed.” The key point is that it is erroneous to think of democratic institutions and probusiness policies as synonymous. We offer an explanation of these observations: democracy *per se* means neither more nor less FDI, but rather a different method of attracting a certain type of it. Autocracies can offer a lower regulatory burden, whereas democracies are more constrained, and must provide relatively lower tax burdens – a finding that, to our knowledge, the literature has not uncovered.

A further innovation of this study is that we model how policy choices are affected by the domestic political considerations of the leader in the FDI-competing country. The tax literature mentioned above largely treats policy variables as exogenously determined. Our modeling of democratic accountability as a determinant of the channel through which governments attract FDI represents a contribution to the literature’s understanding of the role of domestic institutions and political agency in the FDI location choice process.

Our findings have clear welfare implications. We suggest that competition for FDI has the capacity to impose significant social costs on citizens of autocratic countries, whose governments have an incentive to offer a regulatory *carte blanche* to attract foreign firms to invest and contribute to the government’s tax base. The study can also be interpreted as an explanation of why countries with seemingly adverse political conditions, and even political instability, continue to receive foreign investment.³ It also sheds light on why tax competition is particularly aggressive in more developed democracies, such as those in the European Union.

The study proceeds as follows: we present our theoretical model in the next section; we then investigate empirically our main theoretical propositions, before finally offering some concluding remarks.

2. MODEL

2.1 Economic Environment

We set up a simple two-country model in which a country South (S) can attract FDI from a firm in the country North (N). We suppose that this FDI does not add value to the local economy beyond the wages paid to labor. These countries differ in their wage levels (which we consider exogenous) in that $w_N > w_S$. The skill and technology levels in S dictate that the type of FDI engaged in by the investor (hereafter, firm N) is limited to tasks such as resource extraction, basic services, or product assembly. Given the basic nature of the task to be carried out by the workers in the new plant, the investor considers all labor to be homogeneous when deciding upon the location of its investment. Moreover, the market size of S does not influence the firm’s decision, as we assume that firm N is not engaging in horizontal FDI, i.e., firm N is not

³This is despite Azzimonti and Sarte (2007), who show that in politically unstable countries, both direct and indirect forms of expropriation cannot be ruled out *ex ante* by a firm considering an investment.

selling in S . The alternative to investing in S is carrying out the activity at home in N at the higher wage level w_N . If firm N invests in S , a fixed cost V will be undergone.

Throughout we assume that the S government has the objective of maximizing lifetime expected government revenues. The attraction of FDI is thus a policy consideration for the S government as it has the potential to increase its tax base. The government S has two policy choices which will affect the location decision of firm N : The tax rate τ_S , and the level of regulation, θ_S , where $\tau, \theta \in [0,1]$. We assume that the northern equivalents, τ_N and θ_N , are fixed.

We treat the N government as exogenous: w_N, τ_N and θ_N , along with the fixed cost V , simply act as a bound on the behavior of the S government. The activity will not take place in S if the S government sets τ_S and θ_S at levels that override its wage cost advantage, net of V .

The timing in the model is as follows: In the first period, the government chooses its policy bundle (τ_S, θ_S) , domestic production takes place, and the S government collects $\tau_S y$, where y is output in the economy. Firm N then reacts to these choices by deciding its location for production in period 2. An election takes place between period 1 and 2, after which the leader of country S remains in power with probability ρ . Finally, in period 2 there is again production and the imposition of τ_S on foreign firm output Π , raising $\tau(y + \Pi)$ for the S leader. We will first solve for the firm N 's optimal location choice, and then model the interaction between firm and government.

2.2 Foreign Firms

There is a firm N with headquarters in country N . This firm can carry out low-skilled elements of its production process at home, or move it to S . The rest of the production process, along with sales of the final good, occur in N . For this reason, the market size and technology levels of S are irrelevant in N 's location decision. Given that the task to be carried out requires no particular level of skill, N is also indifferent to the productivity and skills of the workforce in S and N when choosing where to carry out this task.

Regardless of where firm N produces, it faces final demand of the general form

$$p = p(x), \quad (1)$$

where x is the quantity produced, $p(x)$ is the price, and $p'(x) < 0$, i.e., price is an decreasing function of the quantity produced. Profits are given by

$$\pi = x(p(x) - c_j) - V, \quad (2)$$

where c_j denotes per-unit costs of production in country j which include wages w , taxes τ , and regulatory costs θ . For analytical simplicity, production is assumed subject to constant returns to scale, i.e., $c'(x) = 0$. V represents the fixed costs of setting up in S . The firm maximizes profits by setting quantity as follows

$$\frac{\partial \pi}{\partial x} = xp'(x) + p(x) - c_j = 0, \quad (3)$$

leading to the following statement for optimum quantity produced

$$x^* = \frac{c_j - p(x)}{p'(x)}, \quad (4)$$

with maximized profits given by

$$\pi^* = \frac{c_j - p(x)}{p'(x)}(p(x) - c_j) - V. \tag{5}$$

Given that $p'(x)$ is always negative, $\partial\pi^*/\partial c_j < 0$, i.e., profits are always decreasing in c_j . In comparing the production decision between production at home (N) and production in the low-cost location (S), the firm will choose country S if

$$\frac{c_S - p(x)}{p'(x)}(p(x) - c_S) - V > \frac{c_N - p(x)}{p'(x)}(p(x) - c_N). \tag{6}$$

As final demand is identical in both scenarios, equation (6) can be written as

$$\tau_S + \theta_S \leq F \equiv w_N - w_S + \tau_N + \theta_N - V. \tag{7}$$

Equation (7) indicates that the firm will locate in S if the tax and regulatory costs are low enough to offset the fixed costs V of locating in S , net of the wage differential $w_N - w_S$. The discussion is summarized in the following proposition:

Proposition 1. S attracts the investment if its wage, tax, and regulation cost advantage offsets the fixed cost of firm N setting up operations there.

2.3. Democratic Accountability and Attracting FDI

We assume that the leadership of country S chooses the tax rate on firms and the degree of regulation with a view to maximizing lifetime expected public revenues.⁴ For simplicity, and to highlight the political tradeoff of the leadership’s policy choices, we treat firms’ output decisions as exogenous and do not consider the distortionary effects of taxation and regulation. We also assume that the S government seeks to attract FDI to increase its tax base.⁵ Attracting FDI, however, requires that the S government sets a policy combination (τ and θ) that satisfies the FDI constraint in equation (7).

We introduce a domestic political constraint on the leadership of country S that affects how it sets policy to attract FDI. Specifically, the probability of the leadership’s political survival is an increasing and concave function of the level of regulation on firms (θ). This limits the extent to which the leader can lower regulatory standards to attract FDI. A central assumption of our analysis is that the sensitivity of political survival to changes in regulation depends on the strength of democratic institutions, which we parameterize and denote as D , where higher values for D indicate higher degrees of democratic accountability.

Technically, we have a political survival function $\rho(\theta; D) \in (0,1)$ that describes how S country leaders view the relation between regulation and the probability of staying in power, taking as given the level of democratic accountability in their country.⁶ For a

⁴We abstract from time discounting of income flows.

⁵We relax this assumption by specifying a participation condition below. Not all FDI-seeking governments will find it in their interest to attract FDI if the domestic tax base is sufficiently large relative to potential taxes levied on foreign firms.

⁶Barro (1973) and Ferejohn (1986) were among the first articles to use such a reduced-form political survival function. Besley (2006) provides an overview of political economy models that make use of reduced-form political survival functions. See Petrova and Bates (2012) for a study related to ours that considers expropriation risk.

given level of democratic accountability D , $\rho(\theta; D)$ is a continuously differentiable function with respect to θ that has the following properties: $\rho(0; D) = 0$, $\partial\rho(\theta; D)/\partial\theta > 0$, $\partial^2\rho(\theta; D)/\partial\theta^2 < 0$, $\partial\rho(\theta; D)/\partial D = 0$, and $\partial^2\rho(\theta; D)/\partial\theta\partial D > 0$.⁷ The assumption that the cross-derivative of the survival function is positive is intuitive: The marginal effect of more regulation on political survival is greater in societies with higher levels of political accountability. For simplicity of exposition, we have expressed political survival as only a function of regulation. In Appendix B, we consider political survival a function of both θ and τ and show that the model's predictions hold under reasonable assumptions on the function's cross-derivatives.⁸

Given that the S country leader seeks to attract FDI, his problem is the following:

$$\max_{\tau, \theta} \quad \tau y + \rho(\theta; D)[\tau(y + \Pi)] \quad \text{subject to} \quad (8)$$

$$\tau + \theta \leq F, \quad (9)$$

where y is domestic firm output and Π is foreign firm output. The leader chooses the tax rate (τ) and the degree of regulation on firms (θ) to maximize lifetime expected revenue subject to the FDI constraint.⁹ The Lagrangian for the problem is as follows:

$$L = \tau y + \rho(\theta; D)[\tau(y + \Pi)] + \lambda[F - \tau - \theta]. \quad (10)$$

First-order conditions with respect to τ and θ are given by the following equation:

$$y + \rho(\theta; D)[y + \Pi] = \lambda \quad (11)$$

$$\rho_\theta(\theta; D)[\tau(y + \Pi)] = \lambda, \quad (12)$$

where $\rho_\theta(\theta; D)$ represents the partial derivative with respect to θ . In this case, the FDI constraint will bind ($\lambda > 0$), given the leader's preferences for both higher tax rates (for raising revenue) and higher levels of protective regulation (for electoral support). The marginal benefit from increasing regulation on firms is the expected value of future revenue drawn from the increased probability of staying in power. Of course, if the leader increases regulation, then the tax rate must be lowered to meet the FDI constraint. To maintain a competitive policy combination, the leader will continue to decrease regulation to the point where the decreased expected value associated with the lower probability of staying in power equates to the revenue he must forgo when lowering the tax rate.

⁷Moreover, we assume that the function satisfies the remaining Inada conditions as θ approaches 0 or 1. That is, we assume that $\lim_{\theta \rightarrow 0} \partial\rho(\theta; D)/\partial\theta = \infty$ and $\lim_{\theta \rightarrow 1} \partial\rho(\theta; D)/\partial\theta = 0$.

⁸A further typical benefit of attracting FDI is that the arrival of foreign firms provide jobs and technology transfer to the local economy. These two phenomena might well be expected to increase the popularity of the politician involved in attracting the FDI. However given that the aim of this study is to model how the politician faces tradeoffs between attracting FDI via tax incentives or via regulatory incentives, we abstract from these potential effects which would involve modeling a richer political survival function and more than two time periods.

⁹It is important to note at this point that not every leader will find it optimal to attract FDI in the first place. Where revenues collected from domestic output under extant policies are larger than the expected revenues from maximizing (8) subject to the FDI constraint, leaders will not seek to attract foreign investment, i.e., the FDI constraint will not bind. The condition for this outcome is described formally in Appendix C.

Together with the FDI constraint ($\tau + \theta = F$), equations (11) and (12) are combined to yield

$$\rho_{\theta}(\theta; D)[(F - \theta)(y + \Pi)] = y + \rho(\theta; D)[y + \Pi]. \quad (13)$$

Partial differentiation of (13) with respect to θ gives

$$\rho_{\theta\theta}(\theta; D)[(F - \theta)(y + \Pi)] - \rho_{\theta}(\theta; D)[y + \Pi] = \rho_{\theta}(\theta; D)[y + \Pi]. \quad (14)$$

Note that the LHS of (13) is decreasing in θ , whereas the RHS of (13) is increasing in θ due to the assumptions on the derivatives of $\rho(\theta; D)$. The Inada conditions on $\rho(\theta; D)$ imply the existence of an internal solution for θ that can be expressed as a function of the democratic accountability parameter:

$$\theta^*(D) = F - \frac{1}{\rho_{\theta}(\theta; D)} \left[\rho(\theta; D) + \frac{y}{y + \Pi} \right]. \quad (15)$$

Plugging θ^* into the FDI constraint, the optimal tax rate can also be expressed as a function of the democratic accountability parameter:

$$\tau^*(D) = F - \theta^*(D) = \frac{1}{\rho_{\theta}(\theta; D)} \left[\rho(\theta; D) + \frac{y}{y + \Pi} \right]. \quad (16)$$

We argue that the policy combination leaders set to attract FDI depends on their domestic political constraints. For two *S*-type countries that differ only in the degree of democratic accountability, the optimal FDI-attracting policy bundles will feature relatively greater regulation in the more democratic country. Partial differentiation of the optimal policy choices with respect to the democratic accountability parameter yields:

$$\frac{\partial \theta^*(D)}{\partial D} = \frac{\rho_{\theta D}(\cdot)}{[\rho_{\theta}(\cdot)]^2} \left[\rho(\cdot) + \frac{y}{y + \Pi} \right] > 0 \quad (17)$$

and

$$\frac{\partial \tau^*(D)}{\partial D} = \frac{-\rho_{\theta D}(\cdot)}{[\rho_{\theta}(\cdot)]^2} \left[\rho(\cdot) + \frac{y}{y + \Pi} \right] < 0. \quad (18)$$

The following proposition summarizes the discussion and is our main result:

Proposition 2. Among FDI-attracting *S*-type countries, greater political accountability induces an optimal policy bundle that is composed of relatively higher regulation and relatively lower profit taxation.

3. EMPIRICAL INVESTIGATION

We formally analyze a combination of firm- and country-level data to investigate the effect of democracy on the extent to which managers of foreign firms operating in

eastern Europe and central Asia view regulation as an obstacle to doing business relative to taxation. We also supplement the main analysis with a series of robustness checks. Our firm-level data offer numerous advantages over country-level data in this context. Most importantly, they give us accurate measures of the regulatory and tax burdens faced by individual foreign firms, and they allow us to control for potentially confounding factors that would be left unexplained by cross-country data.

3.1 Data Description

We use data from the Business Environment and Enterprise Performance Survey (BEEPS), collected by The European Bank for Reconstruction and Development (EBRD) and The World Bank. The survey is uniquely appropriate for the purpose of our analysis, as it records data on managers' perceptions of both regulation and tax as obstacles to doing business, together with firm characteristics such as sales, exports, foreign ownership, imports, and employment structures.¹⁰ Data are collected from firms in 28 Eastern European and Central Asian countries in 2002, 2005, 2007, 2008, and 2009, and samples are stratified at the level of industry, establishment size, and region. The survey universe is defined as commercial, service, or industrial business establishments with at least five full-time employees (EBRD and World Bank, 2010). We consider only the responses of managers of foreign firms.

The main dependent variable is the *ROS* (*Relative Obstacle Scale*). Firms are asked the following question:

As I list some factors that can affect the current operations of a business, please look at this card and tell me if you think that each factor is No Obstacle, a Minor Obstacle, a Moderate Obstacle, a Major Obstacle, or a Very Severe Obstacle.

The two factors of interest to us are “labor regulations” and “tax rates”. We recode the responses from 1 to 5, with 5 being a “Very Severe Obstacle”. The *ROS* is constructed as the difference between the firm's responses regarding labor regulations and taxes as follows:

$$ROS_{ijt}^s = R_{ijt}^\theta - R_{ijt}^\tau, \quad (19)$$

where ROS_{ijt}^s is the *Relative Obstacle Scale* of firm i operating in country j in year t ; R_{ijt}^θ is the firm's response from 1 to 5 for labor regulations; and R_{ijt}^τ is the firm's response for tax rates. The *ROS* takes on higher values when regulations present a greater obstacle to doing business in the host country than taxation. We argue that these reported obstacles to doing business capture the tax and regulatory burdens τ and θ from our model. Moreover, it is important to note that the common firm-specific measurement error component of both terms is backed out of the final *ROS* measure, which should lead to more precise estimates of the parameters specified in the empirical model below.

Tables 1 and 2 present summary statistics. In Table 1, we report survey sample sizes for each country-year together with mean values for our democratic accountability indicators (Voice and Accountability from the World Bank, *VA*, and Institutionalized Democracy from the Polity IV project, *ID*), the log of GDP (from the World

¹⁰The accuracy of this type of enterprise survey data is discussed in *Financial Times Magazine*, “Darkest Peru? It's a beacon for business,” July 30, 2011 (available at Financial Times Online).

TABLE 1 SUMMARY STATISTICS BY COUNTRY

iso3	Frequencies by country-year						Mean value per country			
	2002 No.	2005 No.	2007 No.	2008 No.	2009 No.	Total No.	VA	ID	ln(GDP)	ROS
ALB	17	18	30	0	4	69	-0.01	8.51	22.83	-1.03
ARM	13	26	0	0	26	65	-0.67	5.33	22.4	-0.74
AZE	11	0	0	0	35	46	-1.13	0	24.02	-0.96
BGR	32	24	123	0	26	205	0.61	9	24.29	-0.45
BIH	15	16	0	0	23	54	-0.06		23.16	-0.91
BLR	0	23	0	21	0	44	-1.66	0	24.46	-1.02
CZE	21	27	0	0	33	81	1	10	25.59	-0.46
EST	29	34	0	0	49	112	1.06	9	23.33	0.28
GEO	21	20	0	19	0	60	-0.31	6.3	22.58	-0.98
HRV	25	18	62	0	9	114	0.51	8.76	24.58	-0.76
HUN	47	77	0	0	55	179	1.12	10	25.34	-1.03
KAZ	25	44	0	0	24	93	-1.02	0	24.72	-1.12
KGZ	18	28	0	0	32	78	-0.91	2.22	21.78	-1.23
LTU	30	22	0	0	25	77	0.9	10	23.86	-0.82
LVA	26	23	0	0	50	99	0.8	8	23.6	-0.7
MDA	19	31	0	0	38	88	-0.45	8	21.95	-0.84
MKD	5	14	0	0	44	63	0.05	9	22.77	-0.49
POL	52	48	0	0	30	130	1.02	10	26.35	-0.83
ROU	30	59	0	0	50	139	0.42	8.66	25.33	-0.76
RUS	43	30	0	0	43	116	-0.66	6	27.24	-1.28
SVK	22	15	0	0	29	66	0.92	9	24.81	-0.17
SVN	28	19	0	0	40	87	1.05	10	24.3	-0.47
TJK	3	23	0	25	0	51	-1.24	1.05	21.91	-1.51
TUR	0	0	0	37	0	37	-0.19	8	27.32	-1.35
UKR	63	50	0	45	0	158	-0.37	6.28	25.11	-1.42
UZB	42	42	0	50	0	134	-1.8	0	23.51	-0.95
Total	637	731	215	197	665	2,445				
Mean							0.09	6.8	24.32	-0.82
S.D.							0.89	3.49	1.46	1.32

Notes: VA = *Voice and Accountability*. Source: World Bank Governance Indicators.

ID = *Institutionalized Democracy*. Source: Polity IV.

ln(GDP) = Log GDP. Source: World Development Indicators.

ROS = *Relative Obstacle Scale*, described in equation 21.

Source: BEEPS and authors' own calculation.

Development Indicators), and ROS. We note a wide variation in VA, with countries ranging from scores of over 1 (Poland, Hungary, Slovenia, Estonia) to those below minus 1 (Azerbaijan, Belarus, Kazakstan, Tajikistan, Uzbekistan). A similar magnitude of variation is observed for our other measure of democracy, ID, Azerbaijan, Belarus, Kazakstan, Tajikistan, Uzbekistan).

In Table 2, we note that more firms have a negative ROS (57%) than a positive one (12%), indicating that, on average, tax is more frequently perceived to be a larger obstacle than regulation. We also see that larger firms (both in terms of employees and the natural log of sales in U.S. dollars) are relatively more burdened by regulation than by tax obligations, perhaps due to a disproportionate impact of environmental or labor rules on large-scale operations on one end, or to scale-related advantages in transfer pricing or in accessing information and expertise on tax payment minimization on the other. Given our model's predictions, we note with interest that the mean

TABLE 2 SUMMARY STATISTICS BY ROS SCORES

ROS	No.	%	Employment	ln(Sales)	Age	VA
-4	38	1.6	141	14.49	10.66	-0.26
-3	225	9.2	146	13.8	13.73	-0.13
-2	489	20	279	13.95	14.22	-0.04
-1	637	26.1	194	14.31	15.4	0.07
Total for firms with ROS < 0	1,389	56.9	215	14.1	14.59	-0.01
0	754	30.8	231	14.53	14.66	0.18
1	201	8.2	364	15.06	13.77	0.35
2	81	3.3	250	15.36	12.83	0.4
3	16	0.7	162	14.79	13.81	0.45
4	4	0.2	216	15.96	31.25	0.7
Total for firms with ROS > 0	302	12.4	321	15.14	13.75	0.37
Full sample – mean			233	14.36	14.51	0.09
Full sample – standard deviation			979.2	2.57	17.95	0.89
Total	2,445	100				

VA score is higher for firms with a higher ROS – multinational firms who are relatively more burdened by regulation than by tax are located more frequently in countries with higher democratic accountability.

3.2 Baseline Results

Our formal test is based on the following specification:

$$ROS_{ijt} = \beta_0 + \beta_1 Democ_{jt} + X_{ijt} + C_{jt} + t + \epsilon, \quad (20)$$

where $Democ_{jt}$ is measured by VA score; X_{ijt} and C_{jt} are vectors of firm-level and host country-level controls, respectively; t is a year dummy; and ϵ is an error term.

Table 3 presents our baseline results. In all cases we control for year and NACE2-level industry fixed effects, together with an interaction term. The inclusion of these controls is crucial to the interpretation of our model, as it holds constant all sector-level characteristics, static or otherwise, that could be associated with each firm's sensitivity to regulation or taxation, such as the labor or capital intensity of each industry.

Column (1) shows the regression with only the VA score, which takes on higher values for countries with stronger democratic accountability. As predicted, foreign business managers perceive regulation to be a greater obstacle relative to taxation in more democratic countries. Columns (2) and (3) control for more firm- and country-level effects – most of which are introduced above – that are common in the empirical FDI literature: *Age* is the length of time the firm has been in operation in that host country, $\ln(\text{Employment})$ is the natural logarithm of the number of employees of the firm, $\ln(\text{Sales})$ is the log of the firm's sales in U.S. Dollars, whereas $\ln(\text{GDP})$ is the natural logarithm of the GDP of the FDI-receiving country, which is included as a standard country-level control for income and agglomeration rents, despite our lack of a theoretical prior on its sign. The introduction of firm-level controls in column (2) decreases slightly the coefficient on VA, which remains statistically significant. We see that the coefficient is larger when we control for $\ln(\text{GDP})$, which itself has a negative sign, indicating that in

TABLE 3 BASELINE EMPIRICAL RESULTS, OLS. DEPENDENT VARIABLE: *ROS*

	(1)	(2)	(3)	(4)
Voice and Accountability	0.208** (2.13)	0.151 (1.47)	0.207* (2.00)	0.207** (2.19)
ln(Employment)		0.0646** (2.69)	0.0721** (2.57)	0.0748*** (2.81)
Age		-0.00390*** (-3.30)	-0.00386*** (-3.01)	-0.00394*** (-3.27)
ln(Sales)		0.0513** (2.62)	0.0465 (1.68)	0.0459 (1.69)
ln(GDP)			-0.0941** (-2.26)	-0.0926** (-2.30)
<i>Sectoral Dummies (Base: Services Sector)</i>				
Manufacturing				-0.197** (-2.34)
Construction				-0.335*** (-3.16)
Retail and Sales				-0.280*** (-3.58)
Constant	-0.929*** (-4.56)	-1.854*** (-6.71)	0.452 (0.43)	0.922 (0.89)
Year Dummies	Yes	Yes	Yes	Yes
NACE2 Dummies	Yes	Yes	Yes	No
NACE2*Year Dummies	Yes	Yes	Yes	No
N	2,428	2,428	2,428	2,428
R ²	0.0805	0.0980	0.107	0.0762

Notes: *t*-statistics in parentheses

p* < 0.1, *p* < 0.05, *** *p* < 0.01

Standard errors clustered at country level

wealthier economies firms are relatively more burdened by tax than regulation. Column (4) omits the NACE2 and NACE2*Year dummies and includes broader industry fixed effects. The coefficients tell us that in the services sector, firms are more burdened by labor regulation than by tax. Again, controlling for these sectoral dummies does not change the significant effect of democracy on our dependent variable. On the economic significance of the coefficient, a one unit increase in *VA* will move a firm a quarter of a point along the *ROS* scale. A look at the Beta coefficient allows us to describe the relationship in more intuitive terms: A one-standard-deviation shift in *VA* leads to a 0.16 standard deviations shift in the *ROS*.

3.3 Robustness Analysis

We present a series of robustness tests for our results. First, we address a potential concern that results may be driven by factors related to the construction of the *ROS*. Rather than subtracting the perceived tax obstacle from the perceived regulation obstacle, we rerun the regressions of Table 3 with a new dependent variable: The ratio of the perceived labor to tax obstacles, as in equation (21):

$$ROS_{ijt}^R = \frac{R_{ijt}^\theta}{R_{ijt}^\tau}. \tag{21}$$

TABLE 4 ROBUSTNESS CHECKS 1, OLS. DEPENDENT VARIABLE: ROS^R (RATIO)

	(1)	(2)	(3)	(4)
Voice and Accountability	0.0986* (2.04)	0.0777 (1.58)	0.102* (1.91)	0.0991* (2.00)
ln(Employment)		0.0257** (2.16)	0.0290** (2.29)	0.0297** (2.43)
Age		-0.00195*** (-4.35)	-0.00193*** (-3.92)	-0.00187*** (-4.20)
ln(Sales)		0.0194*** (3.09)	0.0173* (2.05)	0.0182** (2.13)
ln(GDP)			-0.0408* (-1.77)	-0.0394* (-1.74)
<i>Sectoral Dummies (Base: Services Sector)</i>				
Manufacturing				-0.0861** (-2.22)
Construction				-0.166*** (-3.11)
Retail and Sales				-0.115*** (-3.50)
Constant	0.906*** (9.09)	0.555*** (5.86)	1.555*** (2.89)	1.599*** (2.92)
Year Dummies	Yes	Yes	Yes	Yes
NACE2 Dummies	Yes	Yes	Yes	No
NACE2*Year Dummies	Yes	Yes	Yes	No
N	2,428	2,428	2,428	2,428
R^2	0.0723	0.0858	0.0937	0.0624

Notes: t -statistics in parentheses

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Standard errors clustered at country level

The results using this ratio version of the ROS , presented in Table 4, show that all results are robust to this alternative calculation.

In Table 5, we test a re-interpretation of our model. In our theory, τ is modeled as the tax rate on firms. In a developing or transition country setting, however, τ could be thought to include all payments to the government that the firm expects to make, including bribery and corruption expenses that may be required for doing business abroad. Re-interpreting τ in this way does not change any prediction of our model. Empirically, we can test this by recalculating the ROS as in equation (19), replacing R_{ijt}^{τ} with an average of the firm's responses to the survey question for both "taxes" and "corruption". This new τ now captures both official and unofficial monetary payments which must be transferred from the firm to host country administrations. R_{ijt}^{θ} remains as it was in equation (19), i.e. the firm's perceived regulation obstacle. The results show that in more democratic countries, firms are relatively more burdened by regulation than by taxes, even when taxes include both official and unofficial payments. This confirms that τ in the model can be thought to include both official taxes and unofficial corruption payments without changing the pattern of results presented in Table 3.

Given the categorical nature of the ROS scale, readers may have concerns about our assumption of linearity in the empirical specifications. As a robustness check, we dichotomize the dependent variable with firms above the median ROS taking a one

TABLE 5 ROBUSTNESS CHECKS 2, OLS. DEPENDENT VARIABLE: *ROS* (CORRUPTION INCLUDED IN τ)

	(1)	(2)	(3)	(4)
Voice and Accountability	0.327*** (3.32)	0.270** (2.60)	0.289** (2.65)	0.283** (2.73)
ln(Employment)		0.0780*** (3.14)	0.0804*** (3.02)	0.0850*** (3.57)
Age		-0.00178* (-1.89)	-0.00177* (-1.83)	-0.00185** (-2.36)
ln(Sales)		0.0422* (1.91)	0.0406 (1.64)	0.0405* (1.77)
ln(GDP)			-0.0307 (-0.78)	-0.0346 (-0.87)
<i>Sectoral Dummies (Base: Construction Sector)</i>				
Manufacturing				0.221** (2.77)
Retail and Sales				0.115 (1.53)
Services				0.263*** (3.48)
Constant	-1.509*** (-528.92)	-2.074*** (-10.12)	-1.353 (-1.38)	-0.858 (-0.84)
Year Dummies	Yes	Yes	Yes	Yes
NACE2 Dummies	Yes	Yes	Yes	No
NACE2*Year Dummies	Yes	Yes	Yes	No
N	2,300	2,300	2,300	2,300
R ²	0.117	0.139	0.140	0.105

Notes: *t*-statistics in parentheses

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Standard errors clustered at country level

and firms below the median taking a zero. We then run the same specification as Table 3, using a probit rather than OLS. The results of Table 6 tell us that the key finding of this study is robust to this reformulation of the dependent variable. In addition, we address our assumption of cardinality by re-estimating the models from Table 3 using an ordered probit. These coefficient estimates are qualitatively consistent and are displayed in Table 7.¹¹

The final methodological robustness check is to transform the *ROS* by adding 4 to every value, so that *ROS* is always greater than or equal to zero. We then run a Poisson count data model with the same specification as in Table 3, with the results reported in Table 8 remaining qualitatively consistent.

The robustness of our results to alternative measures of democracy is also important. In columns (1) and (2) of Table 9, we run the same regressions as columns (3) and (4) of Table 3. We use the *ID* measure from the *PolityIV* project. This scale increases in democracy from 0 to 10. Moreover, the results across Table 9 indicate that our main finding is robust to this alternative measure of accountability for each of our alternative specifications.

¹¹We refrain from reporting marginal effects on each explanatory variable for each of the nine potential categories of *ROS* for purposes of brevity. Results are available on request.

TABLE 6 ROBUSTNESS CHECKS 3, PROBIT. DEPENDENT VARIABLE: DUMMY FOR ABOVE OR BELOW MEDIAN ROS. MARGINAL EFFECTS REPORTED, APART FROM CONSTANT.

	(1)	(2)	(3)	(4)
Voice and Accountability	0.0764** (2.53)	0.0663** (2.06)	0.0883*** (2.71)	0.0815*** (2.84)
ln(Employment)		0.0301*** (4.23)	0.0331*** (4.48)	0.0329*** (4.57)
ln(Sales)		0.00945 (1.55)	0.00776 (0.98)	0.00916 (1.17)
Age		-0.00187*** (-3.60)	-0.00188*** (-3.43)	-0.00185*** (-3.78)
ln(GDP)			-0.0356*** (-2.64)	-0.0338*** (-2.74)
<i>Sectoral Dummies (Base: Services Sector)</i>				
Manufacturing (d)				-0.0412 (-1.38)
Construction (d)				-0.0892* (-1.70)
Retail and Sales (d)				-0.0972*** (-3.40)
Year Dummies	Yes	Yes	Yes	Yes
NACE2 Dummies	Yes	Yes	Yes	No
NACE2*Year Dummies	Yes	Yes	Yes	No
N	2,416	2,416	2,416	2,428
Pseudo R ²	0.0398	0.0498	0.0559	0.0381

Notes: *t*-statistics in parentheses**p* < 0.1, ***p* < 0.05, ****p* < 0.01

Standard errors clustered at country level

TABLE 7 ROBUSTNESS CHECKS 4, ORDERED PROBIT. DEPENDENT VARIABLE: ROS.

	(1)	(2)	(3)	(4)
Voice and Accountability	0.168** (2.20)	0.122 (1.51)	0.169** (2.06)	0.166** (2.23)
ln(Employment)		0.0529*** (2.79)	0.0593*** (2.66)	0.0602*** (2.83)
Age		-0.00317*** (-3.33)	-0.00315*** (-3.04)	-0.00319*** (-3.24)
ln(Sales)		0.0421*** (2.61)	0.0384* (1.69)	0.0372* (1.67)
ln(GDP)			-0.0766** (-2.33)	-0.0743** (-2.35)
<i>Sectoral Dummies (Base: Services)</i>				
Manufacturing				-0.155** (-2.30)
Construction				-0.262*** (-3.10)
Retail and Sales				-0.220*** (-3.49)
Year Dummies	Yes	Yes	Yes	Yes
NACE2 Dummies	Yes	Yes	Yes	No
NACE2*Year Dummies	Yes	Yes	Yes	No
N	2,428	2,428	2,428	2,428
Pseudo R ²	0.0251	0.0309	0.0337	0.0235

Notes: *t*-statistics in parentheses**p* < 0.1, ***p* < 0.05, ****p* < 0.01

Standard errors clustered at country level

TABLE 8 ROBUSTNESS CHECKS 5, POISSON COUNT DATA MODEL. DEPENDENT VARIABLE: ROS + 4.

	(1)	(2)	(3)	(4)
Voice and Accountability	0.0672** (2.19)	0.0485 (1.50)	0.0671** (2.04)	0.0669** (2.21)
ln(Employment)		0.0198*** (2.66)	0.0219** (2.45)	0.0228*** (2.65)
Age		-0.00123*** (-3.38)	-0.00121*** (-3.05)	-0.00123*** (-3.22)
ln(Sales)		0.0162*** (2.65)	0.0150* (1.69)	0.0149* (1.72)
ln(GDP)			-0.0306** (-2.35)	-0.0303** (-2.37)
<i>Sectoral Dummies (Base: Services)</i>				
Manufacturing				-0.0598** (-2.45)
Construction				-0.104*** (-3.18)
Retail and Sales				-0.0885*** (-3.82)
Constant	1.191*** (9.72)	0.874*** (6.22)	1.651*** (4.63)	1.640*** (4.72)
N	2,428	2,428	2,428	2,428

Notes: *t*-statistics in parentheses
 p*<0.1, *p*<0.05, ****p*<0.01
 Standard errors clustered at the country level

TABLE 9 ROBUSTNESS CHECKS 6. POLITY SCORE AS AN ALTERNATIVE MEASURE OF DEMOCRACY

	(1) ROS	(2) ROS Ratio	(3) ROS (Corrupt.)	(4) Probit	(5) O Probit
Institutionalized Democracy	0.0376* (1.96)	0.0192** (2.20)	0.0549** (2.51)	0.0433*** (2.58)	0.0306** (2.01)
ln(Employment)	0.0562** (2.09)	0.0202* (1.81)	0.0592** (2.37)	0.0665*** (3.73)	0.0462** (2.15)
Age	-0.00356** (-2.73)	-0.00180*** (-3.57)	-0.00144 (-1.47)	-0.00467*** (-3.18)	-0.00290*** (-2.75)
ln(Sales)	0.0670** (2.45)	0.0271** (2.79)	0.0666*** (3.02)	0.0414** (2.24)	0.0548** (2.51)
ln(GDP)	-0.0837* (-2.00)	-0.0367 (-1.68)	-0.0184 (-0.45)	-0.0776** (-2.08)	-0.0677** (-2.05)
Constant	-0.785 (-0.70)	1.036** (2.08)	-1.627 (-1.60)	0.676 (0.72)	
Year Dummies	Yes	Yes	Yes	Yes	Yes
NACE2 Dummies	Yes	Yes	Yes	Yes	Yes
NACE2*Year	Yes	Yes	Yes	Yes	Yes
N	2,374	2,374	2,246	2,362	2,374
R ²	0.103	0.0895	0.130		
Pseudo R ²				0.0529	0.0324

Notes: *t*-statistics in parentheses
 p* < 0.1, *p* < 0.05, ****p* < 0.01
 Marginal effects reported in column (4)
 Standard errors clustered at country level

TABLE 10 CLASSIFICATION OF TWO DIGIT SECTORS BY TECHNOLOGICAL AND KNOWLEDGE INTENSITY, EUROSTAT AGGREGATIONS

Sector	No.	%	Eurostat classification
Other manufacturing	178	7.3	Low Tech
Food	437	18	Low Tech
Textiles	64	2.6	Low Tech
Garments	113	4.7	Low Tech
Chemicals	68	2.8	Medium-High Tech
Plastics & rubber	36	1.5	Medium-Low Tech
Non-metallic mineral products	46	1.9	Medium-Low Tech
Basic metals	14	0.6	Medium-Low Tech
Fabricate metal products	104	4.3	Medium-Low Tech
Machinery and equipment	103	4.2	Medium-High Tech
Electronics	29	1.2	High Tech
Construction	127	5.2	n/a
Other services	190	7.8	n/a
Wholesale	368	15.2	LKIS
Retail	233	9.6	LKIS
Hotel and restaurants	103	4.2	LKIS
Transport	145	6	LKIS
IT	70	2.9	KIS
Total	2,428	100	

As a final check, we limit the firms in our sample to those that are less likely to provide technological spillovers to the host economy to reflect better our theory. To do so, we take the Eurostat delineation of manufacturing industries into high technology, medium-high technology, medium-low technology, and low technology, and services industries into knowledge-intensive services (KIS) and less knowledge-intensive services (LKIS). Sectors are classified in Table 10. We keep only firms from the “unskilled” sectors, which are classified as “Low Tech,” “Medium-Low Tech,” or LKIS sectors, together with the construction sector. As expected, given that our sample is predominantly taken from transition economies, only 11% of foreign firms in the data operate outside the unskilled sectors. Table 11 reports a direct replication of the specifications of Table 3, with the sample limited to those firms that we classify as unskilled. The results remain largely unchanged, with more democratic countries being associated with a higher *ROS*, albeit at the 10% statistical significance level for this sample.

The wide range of approaches we have taken to check the robustness of our primary finding gives us confidence that the pattern is a strong one – in countries where democratic accountability is higher, foreign firms are relatively more burdened by regulation than they are by tax. This supports the central prediction of our theoretical discussion.

4. CONCLUSION

In this study we look at how the potential to attract foreign investment affects leader behavior. In designing policies to attract investment, leaders face a tradeoff between lowering taxes, which reduces rents, and lowering regulation, which diminishes popular support. We find that the policy outcome is determined by the level of political accountability – autocrats can afford to offer firms low levels of regulation, whereas the more constrained democratic leader must offer lower taxes to attract FDI. We find evidence to support this using firm-level data from eastern European and central

TABLE 11 BASELINE EMPIRICAL RESULTS FOR LOW TECHNOLOGY, LOW-MEDIUM TECHNOLOGY, AND LESS KNOWLEDGE-INTENSIVE SECTORS, OLS. DEPENDENT VARIABLE: ROS

	(1)	(2)	(3)	(4)
Voice and Accountability	0.187* (2.02)	0.131 (1.30)	0.185* (1.80)	0.187* (1.91)
ln(Employment)		0.0708*** (3.02)	0.0756*** (2.87)	0.0840*** (3.02)
Age		-0.00517*** (-4.42)	-0.00516*** (-4.12)	-0.00538*** (-4.33)
ln(Sales)		0.0572** (2.69)	0.0546* (1.99)	0.0527* (1.83)
ln(GDP)			-0.0872** (-2.10)	-0.0907** (-2.26)
<i>Sectoral Dummies (Base: Services Sector)</i>				
Manufacturing				-0.0812 (-0.52)
Construction				-0.234 (-1.27)
Retail and Sales				-0.171 (-1.11)
Constant	-1.416* (-1.98)	-2.607*** (-3.82)	-0.416 (-0.34)	0.177 (0.14)
Year Dummies	Yes	Yes	Yes	Yes
NACE2 Dummies	Yes	Yes	Yes	No
NACE2*Year Dummies	Yes	Yes	Yes	No
N	1,823	1,823	1,823	1,823
R ²	0.0810	0.104	0.111	0.0813

Notes: *t*-statistics in parentheses

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Standard errors clustered at country level

Asian countries. This study contributes to the literature on FDI location choice, on democracy and foreign investment, on environmental and labor regulations, and on the political economy of industrial policy. Our results have clear implications: Competition for FDI leads to relatively low environmental and labor market regulations in autocracies, which can lead to deleterious social outcomes. Our study also explains how autocracies still attract FDI, shedding light on an otherwise inconclusive literature.

APPENDIX: A

AN ILLUSTRATION: INDOCHINA

A series of court cases and investment decisions in Southeast Asia illustrate our theory vividly. The first centers on a major industrial facility at Map Ta Phut, Thailand, where an injunction against 76 operations was ordered in view of environmental breaches. The order was seen as a progression of an earlier court decision declaring the area a “pollution control zone” following a civil lawsuit filed by 27 villagers complaining of health grievances. Subsequent studies revealed that the industrial activity was likely to be causing negative health externalities: Peluso et al. (2008) found that people living near Map Ta Phut had 65% higher levels of genetic damage to blood cells than others in the same province. The figure was 120% for refinery workers. This type of damage is considered a possible precursor to cancer, and Thailand’s

National Cancer Institute found in 2003 that rates of cervical, bladder, breast, liver nasal, stomach, throat, and blood cancers were highest in Rayong Province, where Map Ta Phut and other industrial zones are located.¹²

The decision to suspend operations at Map Ta Phut was seen as a blow to investor confidence. The *Financial Times* speculated that it could add a “toxic element of regulatory risk” to Thailand’s investment climate,¹³ while share prices at major Thai industrial conglomerates were significantly affected on the announcement of a decision to largely uphold the order two months later: Stock prices at Siam Cement, PTT (energy), and PTT Chemical fell 5.5%, 3.8%, and 5.6%, respectively.¹⁴

It was against this backdrop that, in October 2010, Thai Prime Minister Abhisit Vejjajiva agreed to a deal with the ruling junta in neighboring Burma to proceed with a major industrial project in Dawei. Earlier that day, Prime Minister Abhisit had explained to the *Bangkok Post* that Thailand had to reduce its reliance on domestic heavy industry: “I don’t think the people want it in their backyard.”¹⁵ A subsequent feature in the *New York Times* further clarified the strategy.¹⁶

Foreign companies building plants here would be freed from the restraints of increasingly strict antipollution laws elsewhere in the region. For Thailand, the project would be a cheap and convenient way to export its dirty refineries across the border.

‘Some industries are not suitable to be located in Thailand,’ Abhisit Vejjajiva, the Thai prime minister, said in explaining the project to viewers of his weekly television address recently. ‘This is why they decided to set up there,’ he said, referring to Dawei.

The perceived advantage is put more bluntly by Anan Amarapala, vice president of the marine division of Italian-Thai Development Plc, the Thai group awarded the contract to construct the infrastructure for the 250 square kilometer project. On the issue of displacement,¹⁷ he said:

We are still in the process of negotiating with the villagers [...] It’s totally different from Thailand [...] Thais would argue and go to court. That’s not the case with this project.

Recalling our theory, it is interesting to note three other features of the Dawei project: First, that the project includes a profit-sharing agreement with the Burmese junta, on which Italian-Thai executives “could not divulge details.” Second, Siam Cement and the PTT group – who were both affected by the ruling in Mah Ta Phut – are among the many heavy industry conglomerates looking to move operations to Dawei

¹²Facts presented in this paragraph are taken from *New York Times*, “In Industrial Thailand, Health and Business Concerns Collide,” December 18, 2009. Available at The New York Times online. All newspaper articles in this appendix were accessed on February 15th, 2011.

¹³*Financial Times*, “Environmental Ruling Threatens Thai Growth,” October 3, 2009. Available at The Financial Times online.

¹⁴*Financial Times*, “Thai Court Rules 65 Projects Remain Suspended,” December 2, 2009. Available at The Financial Times online.

¹⁵*Bangkok Post*, “Diversity Holds Key to Success,” October 11, 2010. Available at The Bangkok Post online.

¹⁶*New York Times*, “In Industrial Thailand, Health and Business Concerns Collide,” December 18, 2009. Available at The New York Times online.

¹⁷Local residents estimate that the inhabitants of 19 villages, each home to around 5,000 people, will be forced to move. Italian-Thai put the figure at 3,800 households, according to The New York Times online.

in light of stricter regulations in Thailand.¹⁸ Finally, a note must go to a port project at Pak Bara, southern Thailand, which has been scaled down due to local environmental concerns. The Dawei project is now expected to take on many of its intended functions.¹⁹

The relocation of Thai operations to Dawei is not the only example of Asian democracies' exploitation of regulatory conditions in autocratic Burma. India's state-run energy group, NHPC Ltd, is expanding operations there on account of slow progress on domestic projects caused by "environmental concerns" and issues related to the resettlement of people displaced by the construction of dams.²⁰ This will add to an existing project at Tamanthi Dam, an investment that is expected to displace 30,000 people and flood 17,000 acres of fertile farmland, according to the Burma Rivers Network, a coalition of dam-affected communities. Eighty percent of the power generated by the dam will go to India.²¹

We believe these stories present a salient manifestation of our model's predictions. In each case, democratic expression has led to more regulation, and the firms who have a high relative exposure to this obstacle relocated to a more autocratic host country.

APPENDIX: B ALTERNATIVE POLITICAL SURVIVAL FUNCTION

Imagine that the leader's political survival depends on the tax rate as well as the regulatory standards. As before, we have a reduced-form political survival function, $\rho(\theta, \tau; D) \in (0, 1)$ with $\partial\rho(\theta, \tau; D)/\partial\theta > 0$, $\partial^2\rho(\theta, \tau; D)/\partial\theta^2 < 0$, $\partial\rho(\theta, \tau; D)/\partial D = 0$, and $\partial^2\rho(\theta, \tau; D)/\partial\theta\partial D > 0$. While it is not clear empirically if this is the case, we assume that the citizens prefer lower taxes, all else equal, i.e., $\rho_\tau(\theta, \tau; D) < 0$. We will demonstrate that our main result holds under for an analogous assumption on the cross-partial between τ and D . The Lagrangian for the FDI-attracting S -type leader's problem is as follows:

$$L = \tau y + \rho(\theta, \tau; D)[\tau(y + \Pi)] + \lambda[F - \tau - \theta]. \quad (\text{B1})$$

The first-order conditions with respect to τ and θ are given by the following:

$$y + \rho_\tau(\cdot)[\tau(y + \Pi)] + \rho(\cdot)[y + \Pi] = \lambda \quad (\text{B2})$$

and

$$\rho_\theta(\cdot)[\tau(y + \Pi)] = \lambda. \quad (\text{B3})$$

For leaders that attract foreign investment, the FDI constraint will bind ($\lambda > 0$), so that after some algebra, we again have the optimal policy choices as functions of the democratic accountability parameter:

¹⁸*Bangkok Post*, "Big Shift to Dawei Predicted, Map Ta Phut and South Lose Appeal," November 14, 2010. Available at The Bangkok Post online.

¹⁹*The Nation*, "Pak Bara Project Set to Go Ahead," October 10th, 2010. Available at The Nation online.

²⁰*Wall Street Journal*, "NHPC May Build Power Projects in Myanmar," April 21st, 2010. Available at Wall Street Journal online. For confirmation of the plan, see the NHPC Ltd. press release published on their website.

²¹*Democratic Voice of Burma*, "Not in My Backyard," October 21st, 2010. Available at Democratic Voice of Burma's website.

$$\theta^*(D) = F - \left\{ \frac{1}{\rho_\theta(\cdot) - \rho_\tau(\cdot)} \left[\rho(\cdot) + \frac{y}{y + \Pi} \right] \right\} \quad (\text{B4})$$

and

$$\tau^*(D) = \frac{1}{\rho_\theta(\cdot) - \rho_\tau(\cdot)} \left[\rho(\cdot) + \frac{y}{y + \Pi} \right]. \quad (\text{B5})$$

Differentiation of (B.4) w.r.t. D and some algebra give the following:

$$\frac{\partial \theta^*(D)}{\partial D} = \frac{\rho_{\theta D}(\cdot) - \rho_{\tau D}(\cdot)}{[\rho_\theta(\cdot) - \rho_\tau(\cdot)]^2} \left[\rho(\cdot) + \frac{y}{y + \Pi} \right] > 0 \quad (\text{B6})$$

if $\rho_{\theta D}(\cdot) > \rho_{\tau D}(\cdot)$, which is satisfied if $\rho_{\tau D}(\cdot) < 0$. Since we have assumed that voters dislike taxes, all else equal, the condition that $\rho_{\tau D}(\cdot) < 0$ would be analogous to our assumption that $\rho_{\theta D}(\cdot) > 0$, namely, that leaders are more likely to get replaced for pursuing unpopular policies in more democratic countries. Similarly, differentiation (B.5) w.r.t. D and some algebra give the following

$$\frac{\partial \tau^*(D)}{\partial D} = \frac{\rho_{\tau D}(\cdot) - \rho_{\theta D}(\cdot)}{[\rho_\theta(\cdot) - \rho_\tau(\cdot)]^2} \left[\rho(\cdot) + \frac{y}{y + \Pi} \right] < 0 \quad (\text{B7})$$

if $\rho_{\theta D}(\cdot) > \rho_{\tau D}(\cdot)$, which is satisfied if $\rho_{\tau D}(\cdot) < 0$.

APPENDIX: C THE FDI PARTICIPATION CONDITION

Not every government will choose to attract foreign investment. Rather, the FDI constraint will only bind if $\max_{\theta, \tau} U_a < \max_{\theta, \tau} U_f$, where $\max_{\theta, \tau} U_a$ is maximized expected utility without FDI, and $\max_{\theta, \tau} U_f$ is maximized expected utility with FDI.

At the extreme, $\max_{\theta, \tau} U_a = 2y$, with $\tau_a^* = 1$ and $\theta_a^* = 1$. In other words, if leaders forget about foreign investors, they can obtain a maximum expected domestic revenue of $2y$ by ramping up taxes and regulation.

Maximized utility under the binding FDI constraint U_f^* is given by $\tau_f^* y + \rho(\theta_f^*; D) [\tau_f^* (y + \Pi)]$. This means that governments will optimally attract FDI only if $y < \bar{y}$, where:

$$\bar{y} = \frac{\rho(\cdot) \tau_f^* \Pi}{2 - \tau_f^* - \tau_f^* \rho(\cdot)}. \quad (\text{C1})$$

We therefore make the explicit assumption that no country in our analysis has a level of domestic firm output y that is higher than \bar{y} . This again implies that our model is particularly suitable for describing outcomes in less developed economies.

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REFERENCES

- Azzimonti, M. and P. D. G. Sarte, 2007, Barriers to foreign direct investment under political instability. *Economic Quarterly* 93, 287–315.
- Baldwin, R. E. and P. Krugman, 2004, Agglomeration, integration and tax harmonisation. *European Economic Review* 48, 1–23.
- Barro, R. 1973, The control of politicians: an economic model. *Public Choice* 14, 19–42.
- Bernauer, T. and V. Koubi, 2009, Political determinants of environmental quality. *Ecological Economics* 68, 1355–1365.
- Besley, T., 2006, *Principled Agents? The Political Economy of Good Government* (Oxford University Press, Oxford).
- Busse, M., 2003, Democracy and FDI. Hamburg Institute of International Economics Discussion Paper Series 26260.
- Choi, S. W. and Y. Samy, 2008, Re-examining the effect of democratic institutions on inflows of foreign direct investment in developing countries. *Foreign Policy Analysis* 4, 83–103.
- Cole, M. A., R. J. R. Elliott, and P. G. Fredriksson, 2006, Endogenous pollution havens: Does FDI influence environmental regulations? *Scandinavian Journal of Economics* 108, 157–178.
- Congleton, R. D., 1992, Political institutions and pollution control. *Review of Economics and Statistics* 74, 412–421.
- Davies, R. B. and C. Eckel, 2010, Tax competition for heterogeneous firms with endogenous entry. *American Economic Journal: Economic Policy* 2, 77–102.
- and C. J. Ellis, 2007, Competition in taxes and performance requirements for foreign direct investment. *European Economic Review* 51, 1423–1442.
- Davies, R. B. and J. Voget, 2010, Tax competition in an expanding European Union. GEE Papers 0033, Gabinete de Estratégia e Estudos, Ministério da Economia e da Inovacao
- Farzin, Y. H. and C. A. Bond, 2006, Democracy and environmental quality. *Journal of Development Economics* 81, 213–235. doi:10.1016/j.jdeveco.2005.04.003
- Ferejohn, J., 1986, Incumbent performance and electoral control. *Public Choice* 50, 5–25.
- Helpman, E., 1984, A simple theory of international trade with multinational corporations. *Journal of Political Economy* 92, 451–471.
- Javorcik, B. S. and M. Spatareanu, 2005, Do foreign investors care about labor market regulations? *Review of World Economics (Weltwirtschaftliches Archiv)* 141, 375–403.

- Jensen, N. M., 2003, Democratic governance and multinational corporations: Political regimes and inflows of foreign direct investment. *International Organization* 57, 587–616.
- Li, Q. and A. Resnick, 2003, Reversal of fortunes: Democratic institutions and foreign direct investment flows to developing countries. *International Organization* 57, 175–211.
- Mathur, A., and Singh, K., 2007, Foreign direct investment, corruption and democracy. American Enterprise Institute for Public Policy Research Working Papers 135.
- Peluso, M., P. Srivatanakul, A. Munnia, A. Jedpiyawongse, A. Meunier, S. Sangrajrang, S. Piro, M. Ceppi, and P. Boffetta, 2008, DNA adduct formation among workers in a Thai industrial estate and nearby residences. *Science of the Total Environment* 383, 283–288.
- Petrova, M. and R. Bates, 2012, Evolution of risk and political regimes. *Economics & Politics* 24, 200–225.
- Wilson, J. D., 1999, Theories of tax competition. *National Tax Journal* 52, 269–304.
- Yang, B., 2007, Autocracy, democracy, and FDI inflows to the developing countries. *International Economic Journal* 21, 419–439.