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### The politics of entry

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# 2

## To be bribed or lobbied

### 2.1 Introduction

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We explicitly model a politician's choice between committing to a rule to indirectly control market access under the influence of lobbying, and not committing to such a rule to directly control access in a bribing context. Essentially, the politician sets a rule and decides whether or not to enforce it. A specific motivation for politicians to abandon direct control is to avoid the risk of legal action associated with bribes, a risk which increase with political accountability. Direct control of market access may be divested from the state in order to be legally lobbied, e.g. on regulation surrounding entry.

Both bribing and lobbying are often treated as equivalent. However, recent research documents important differences. Firstly, government officials can often use lobbying income for political campaigns only, offering an electoral gain (Baron, 1994; Grossman and Helpman, 1996). Secondly, lobbying is aimed at policy-makers or politicians, whereas bribing is aimed at policy-enforcers or bureaucrats. Alesina and Tabellini (2008) point to the difference between lobbied politicians' worrying about reelection and bribed bureaucrats seeking a career. Campos and Giovanni (2008)

argue that lobbying involves high-level politicians while bribing involves relatively nonaccountable bureaucrats, and suggest an internal conflict. Thirdly, lobbying seeks to change policy whereas bribing seeks to circumvent existing policy' leading Harstad and Svensson 2006) to argue that lobbying is a more 'permanent ' form of influence. Finally, bribing is illegal whereas lobbying is legal in most countries (Harstad and Svensson, 2006).

Our paper focusses on another difference: the formation of special interest groups is different under bribing and lobbying. Consider the case when a politician sets an entry rule, but may ignore the rule in exchange for illegal bribes, or be legally lobbied about a binding rule. Critically, a politician can freely favour individual citizens by accepting their bribe. In contrast, under lobbying the politician drafts a rule favouring some based on only their characteristics. In other words, under bribing the politician grants individual circumventions to an overly restrictive rule while under lobbying the politician alters the restrictiveness a rule which is then enforced. In a setting with special interests competing for preferential entry into a profitable sector, we show that this difference in 'selection technology' affects competition between interest groups, sequential interest group formation, political contributions and the level of entry.

As characteristics do not matter under bribing, politicians can create 'perfect competition' between interest groups to breach a rule in their favour, maximising political rent extraction. Lobbying instead defines a cut-off for entry which will be more easily satisfied by some individuals (say, own capital in a bank entry game). Those individuals with 'strong' characteristics can unite in an interest group and win the lobbying game by outbidding any counteroffer in equilibrium, retaining some rents. This free-riding advantage exists because no rule can exclude entry by the strong group while allowing entry by a competing group (with weaker members). Therefore being bribed over entry allows the politician to extract larger political

contributions than being lobbied for enforced rules. Interestingly, by admitting a next weakest individual the strong group can effectively deprive its fiercest rival of its strongest member. Such strategic enlargement and the relatively low political contributions under lobbying result in entry rates being higher than under bribing.

In summary, the political decision on the allocation of control substantially affects the formation of interest groups. We offer here a novel result that having direct control over market access and being bribed leads to greater political rents and lower entry rates than controlling access indirectly via regulation and being lobbied. The reason is that any rule chosen to regulate access create a free riding advantage for specific interest groups, reducing competition in the lobbying game. In the case of direct political control, the state can assign access directly, so it can force more competition among different interest groups and ultimately extract more rents. Only when political accountability is high enough will the the politician relinquish direct control to avoid legal sanctions associated with bribing.

## 2.2 Related literature

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Grossman and Helpman (1994) model exogenous interest groups seeking to influence trade policy. Mitra (1999) endogenises the appearance of interest groups with industry-specific preferences. In a paper on entry, Perotti and Volpin (2007) endogenise the size of the interest group lobbying for preferential access to production in a single sector.<sup>1,2</sup> We use a similar setup but allow for the endogenous formation of multiple competing interest groups. We also adopt the sharp distinction between illegal bribing and legal lobbying, although we do not distinguish between bureaucrats

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<sup>1</sup>Bliss and Di Tella (1997) model a single agent demanding a fixed graft per firm. For a given distribution of firm-specific overhead costs the agent trades off higher entry and lower rents per firm. They show that, depending on the overhead costs of the marginal firm, more similar costs can both increase and decrease graft.

<sup>2</sup>For a great overview on political economy models (in trade) and their assumptions, see Nelson (2007).

and legislators. In our model the politician chooses to control entry directly and be illegally bribed or regulate entry using a general rule and be legally lobbied, whereas Harstad and Svensson (2006) model firms choosing whether to bribe or lobby the government. Lobbying by special interests, in itself a legal activity, is constrained by political institutions such as elections, and informal ones such as scrutiny by the media (Besley, Burgess and Prat, 2006).<sup>3</sup> Based on responses from the Executive Opinion Survey from the World Economic Forum over 2004 and 2005, bribing seems more common when accountability is low and lobbying when accountability is high (Kaufmann and Vicente, 2005).<sup>4</sup> In addition, firms seem to lobby more and bribe less when laws are undertaken by a more trusted legislature (Bennedsen, Feldmann and Lassen, 2009). Bribing is additionally constrained by legal institutions such as an independent judiciary, also in case of preferential access to state bank lending (La Porta, Lopez-de-Silanes and Shleifer, 2006). Throughout the paper we separate strong legal institutions that restrain the executive from breaking the law, and political institutions that constrain choices which favour special interests over the public at large.

The misuse of public office for private gain is constrained by political, economic and legal institutions (Svensson, 2005). Interestingly, competition is more limited when citizens have fewer democratic rights (Benmelech and Moskowitz, 2008) and when wealth is more unevenly distributed (Rajan and Ramcharan, 2007). Small firms enjoy higher growth with a more efficient, independent and trusted legal

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<sup>3</sup>Public accountability is higher with a well-informed electorate and free and regular elections (Adserà, Boix and Payne, 2003). Research on Brazil shows that the possibility of re-election and the availability of a local judge and local media increase public accountability (Ferraz and Finan, 2007). A newspaper campaign in Uganda to reduce capture of public educational funds greatly reduced corruption (Reinikka and Svensson, 2005).

<sup>4</sup>This result is not emphasized in the paper, but is clear from the regressions. The responses used from the survey measuring bribes are 'financial honesty of politicians' (Q4.02), 'frequency of illegal contributions' (Q4.13), 'frequency of diversion of public funds due to corruption' (Q5.11), 'frequency of bribes in procurement' (Q5.12E) and 'frequency of state capture' (Q5.12F). The ones used for lobbying are 'favouratism in policy and procurement' (Q4.14), 'frequency of legal political contributions' (Q4.14) and 'influence in laws and regulations' (Q5.14D).

system, which enhances their access to finance (Frye and Shleifer, 1997; Beck, Demirgüç-Kunt, Laeven and Levine, 2008). Moreover, when a small elite enjoys limited competition, regulatory capture is more profound (Engerman and Sokoloff, 2002; Acemoglu, Johnson and Mitton, 2007). To the extent that greater accountability supports capital accumulation, our analysis has similar empirical implications as in Harstad and Svensson (2006). In their analysis of private agents' preferences for bribing versus lobbying, lobbying is preferred once enough capital has been invested.

Corrupt officials can limit entry by issuing or with-holding licenses or by drafting more general legislation that impedes entrepreneurs to set up new businesses (De Soto, 1990). In Uganda for example, a one percent increase in bribery associates with a three percent reduction in firm growth (Fisman and Svensson, 2007). Also at a macro-economic level, corruption reduces investment and growth (Mauro, 1995).<sup>5</sup> There is evidence that in Mali rent-creation through political case-by-case control of entry in both the industrial and trading sector was strongly reduced due to broad political changes (Daubrée and Stavasage, 1998).<sup>6</sup>

## 2.3 Model setup

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A single politician chooses between setting an enforced entry rule under the influence of lobbying or selectively applying a prohibitive rule under the influence of bribing. To lobby or bribe effectively citizens may form (competing) interest groups seeking preferential entry to the politically protected market. Concretely, the politician accepts the offer of one of the interest groups in exchange for allowing each of its members to produce one unit of final good. Ultimately every citizen  $i$  is either an

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<sup>5</sup>Work establishing a causal link between good institutions and growth includes Hall and Jones (1999), Acemoglu, Johnson and Robinson (2001), Easterly and Levine (2003) and Rodrik, Subramanian and Trebbi (2004).

<sup>6</sup>In Mali, public protests in 1991 led to regime change allowing liberalisation. As the previously protected merchants were allies of the ousted government and the press became more free, corruption became less appealing to government officials.

entrepreneur  $e$  making a profit  $\pi_e \geq 0$  or a consumer  $c$  making zero profits  $\pi_c = 0$ . Citizens seek to create firms as long as they have positive net value  $\pi_e > 0$ . We define  $m$  as the entry level for which  $\pi_e = 0$ . As citizens only start a firm as long as  $\pi_e > 0$  entry is bounded from above by  $m$ . For consumers to remain the majority of the population we assume that  $m \leq \frac{1}{2}$ .

The politician thus either commits to enforce a rule and be legally lobbied, denoted by  $L$ , or not to commit and be illegally bribed, denoted by  $(B)$ . We now give an overview of the set of governance structures  $G = \{B, L\}$ .

Table 2.1: Bribing versus lobbying

<i>Governance structure (G)</i>	Enforcement of rule	Selection technology	Legality
<i>Bribing (B)</i>	No	Choosing individuals	Illegal
<i>Lobbying (L)</i>	Yes	Setting the rule	Legal

### 2.3.1 Different regulatory barriers to entry

Some (regulatory) barriers to entry can be overcome by additional investment. One can think of technological standards, safety requirements or accounting and taxation rules. In that case citizens' access to finance is the only determinant of entry. On the other hand, a minimum level of education, a minimum age or requirements on personal health may not be overcome with wealth. These barriers are very different, but we now argue that our model treats financial and individual barriers in the same framework.

#### 2.3.1.1 Financial barriers

Consider a unit mass of citizens indexed by  $i$  differing in wealth  $w_i$ , uniformly distributed on the interval  $[0, 1]$ . Suppose that any citizen can start a firm that produces a single unit of final good by making an investment of one, so that agent  $i$  needs external finance of  $1 - w_i$  to start a firm. Under bribing  $B$  the politician directly

lends or provides (formal or informal) guarantees to the citizens of his choice, allowing them to produce irrespective of their wealth  $w_i$ . Under lobbying  $L$  the politician sets the level of investor protection  $\delta \in [0, 1]$ , enabling lenders to salvage share  $\delta$  when repossessing the investment of one. Being able to credibly commit to repay  $\delta$ , this is exactly what citizens can borrow. Therefore only citizens with wealth  $w_i \geq 1 - \delta$  can become entrepreneur.<sup>7</sup> Although available capital may be endogenous to political or legal institutions we assume that banks can raise the required amount of capital at zero interest.

### 2.3.1.2 Individual barriers

Consider the same unit mass of citizens indexed by  $i$  differing in individual characteristic  $w_i$ , such as eyesight or reaction speed when trying to become a pilot. Under bribing  $B$  the politician picks the individual entrants irrespective of  $w_i$ , whereas under lobbying  $L$  the politician sets rule  $\delta$  and allows only those with  $w_i \geq \delta \in [0, 1]$  to enter. As with financing the choice of  $\delta$  results in share  $1 - \delta$  being able to satisfy entry requirements.

### 2.3.1.3 Entry

In general the politician chooses the level of entry under both  $B$  and  $L$ , in the first case by directly choosing the set of entrants, in the second by setting rule  $\delta$ . The crucial difference is that the politician can freely choose the identity of entrants under  $B$ , while under  $L$  the set of entrants for a given  $\delta$  depends on individual characteristic  $w_i$ . The number of entrants is denoted by  $n_B$  under  $B$  and by  $n_L = \min\{1 - \delta, m\}$  under  $L$ . In either case  $G = \{B, L\}$  the endogenous share of entrepreneurs is  $n_G$ , while the remaining  $1 - n_G$  citizens only consume their disposable income which we call  $\omega$ .

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<sup>7</sup>One might be concerned that financial rules are drafted by unaccountable regulators, even in the most democratic countries. However, Barth, Caprio and Levine (2005) argue that those regulators abuse powers bestowed upon them unless kept in line by (accountable) politicians.

The reduction of rules to an observable one-dimensional characteristic is a simplification. Although in practice rules may be multi-faceted, the one-dimensional case does fit financial barriers. Moreover we believe it is useful to describe the two extreme cases being fully free selection (bribing) and selection on a single criterion (lobbying). Qualitatively, a multi-faceted rule is an intermediate case.

### 2.3.2 Timeline

At  $t = 0$  the politician chooses to commit to enforce a rule and be legally lobbied ( $L$ ) or not to commit and be illegally bribed ( $B$ ),  $G = \{B, L\}$ .

At  $t = 1$  representatives sequentially form coalitions of citizens. After forming a coalition, each representative (proposer) makes an irreversible offer to the politician (responder) to set entry at equilibrium levels  $n_B$  or  $n_L(\delta)$  in exchange for political contributions denoted by respectively  $k_B$  and  $k_L$ . Coalitions are formed until there are no further gains from forming a additional group. Each citizen is represented by at most one representative.

At  $t = 2$  the politician chooses the offer that maximises his utility, or simply allows free entry  $m$ . Citizens receiving finance set up a firm and produce one unit of final good. Under  $B$  representatives seek to illegally bribe the politician in exchange for entry of their coalition's members and under  $L$  representatives legally lobby for a favourable set of rules.

At  $t = 3$  the market for the final good is open and its price, denoted by  $f$ , is determined. Consumers buy the final goods and political contributions are paid.

We do not take a stand on whether setting up either governance system  $G = \{B, L\}$  is more costly. Both systems require implementation of the entry choice by the politician. Under  $B$  the identity of entrants needs to be controlled while under  $L$  the entry rule needs to be enforced. Moreover, in both cases loyalty of civil servants needs to be ensured, either through kickbacks or fear of punishment. Intuitively,

one can imagine that a larger and more costly bureaucracy is required under  $L$  to check compliance with the entry rule, but that assuring civil servants' loyalty is more costly under  $B$ . In the model we abstract from costs of running either  $B$  or  $L$ .

### 2.3.3 Citizens

Every citizen consumes both numeraire and final goods, and has utility from consumption

$$U_i = x_i + ay_i - \frac{1}{2}y_i^2 \quad (2.1)$$

where  $x_i$  and  $y_i$  are respectively the consumption of a numeraire and the final good produced by entrepreneurs.<sup>8</sup> Here  $a$  scales the utility from consuming the final good. We assume that  $a > 1$  such that there is demand for the final good and some entry is profitable. Individual income equals a constant endowment  $\omega$  plus any firm profits  $\pi_i$ , which depend on entry  $n_G$ . We assume that disposable income is high enough to pay for the desired consumption of the final goods, which requires  $\omega \geq \frac{1}{4}a^2$ .<sup>9</sup> The aggregate amount spent on the numeraire good is  $x_i = \omega + \pi_i - y_i f$ , with  $f$  the price of the final good. As entry is  $n_G$ , average profit is  $E[\pi_i] = n_G \pi_e$ .

Social welfare equals the total utility of consumption, defined as

$$s(n_G) = \sum^i U_i + k(n_G) \quad (2.2)$$

where  $k(n)$  are the contributions paid to the politician by entrepreneurs. This social welfare function is free of distributional concerns and simply sums the utility of consumption of all agents, including the politician.<sup>10</sup>

<sup>8</sup>This utility function is widely used in the literature as it greatly simplifies the analysis. Krugman (1992) derives it in a political economy model in a general equilibrium framework.

<sup>9</sup>The individual income  $\omega$  can not be used to start a firm, for example because it is received after firm creation.

<sup>10</sup>Whether or not we include political contributions in the definition of social welfare does not

A citizen  $i$  in the interest group of representative  $j$  makes profits of

$$\pi_i = \begin{cases} f - 1 - \frac{k_G}{q_j} & \text{if } i = e \text{ and } j \text{ wins} \\ f - 1 & \text{if } i = e \text{ while free-riding on competing offer} \\ 0 & \text{if } i = c \end{cases} \quad (2.3)$$

where we subtract the investment. We thus abstract from coordination problems by assuming that each group member in group  $j$  of size  $q_j$  pays an equal share of the contributions  $k_G$ . We now turn to the objective of representatives and then describe interest group formation in section 2.3.6.

### 2.3.4 Representatives

Under both  $B$  and  $L$ , each representative  $j$  forms a coalition of citizens  $q_j$  and offers the politician contributions  $k_{G,j}$  in return for entry  $n_{G,j}$ . The representatives charge an (infinitesimal) fraction of the total profits of its coalition's members and thus maximise the expected sum of profits of their coalition's members

$$\Pi_j = \begin{cases} q_j(f - 1) - k_G & \text{if } j \text{ wins} \\ 0 & \text{otherwise} \end{cases} \quad (2.4)$$

We assume that each representative  $j$  can commit to paying political contributions after the politician has delivered the agreed upon policy.

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change the paper's main results given that  $\frac{\partial U_i}{\partial n_G} > 0$  and  $\frac{\partial k}{\partial n_G} < 0$ . For computational simplicity we use the Utilitarian social welfare by summing every citizen's consumption utility, thus including the politician.

### 2.3.5 Politician

The politician's utility is a weighted average of social welfare (with weight  $\beta$ ) and political contributions (with weight  $1 - \beta$ ) minus any legal cost. The parameter  $\beta \in [0, 1]$  measures public accountability, as it scales up the political cost of opportunistic decisions which reduce social welfare. It is increasing in the ability of citizens to identify and challenge bad policies, for instance by reducing the chance of re-election. When there are no legal costs, namely under  $L$ , the politician maximises

$$U_p(n_L) = \beta s(n_L) + (1 - \beta)k(n_L) \quad (2.5)$$

In the case of direct control  $B$ , allocating loans to a coalition in exchange for a bribe also creates a legal risk of detection. The chance of detection and punishment is scaled by  $\phi \in [0, 1]$  which denotes the strength of legal institutions which challenge illegal behaviour of politicians. We will refer to  $\phi$  as a measure of legality. The politician is only legally liable if he is directly involved in setting entry.

We assume that the chance of detection and punishment increases in accountability and legality. Let  $\beta\phi$  be the chance that the corrupt politician is exposed and sanctioned, in which case its payoff is zero.<sup>11</sup> So under  $B$  the politician maximises

$$U_p(n_B) = (1 - \beta\phi)[\beta s(n_B) + (1 - \beta)k(n_B)] \quad (2.6)$$

Our foundation for the reduced form legal costs  $\beta\phi$  is as follows. Accountability  $\beta$  incorporates citizens' ability to both gather objective information about policies and sanction politicians taking welfare-reducing decisions. Legality  $\phi$  is a measure of judicial independence and competence. Higher accountability  $\beta$  increases the likelihood that bribes are exposed in the first place while higher legality  $\phi$  increases

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<sup>11</sup>Losses due to incurred legal punishment are not included in the definition of social welfare.

the chance of effective enforcement. Although some have argued that legality is also a political choice, we hold the view that it is a persistent institution that can be more or less independent from the executive. This independence is represented by  $\phi$ .

### 2.3.6 Group formation

Under both mechanisms  $B$  and  $L$ , representatives  $j \in 1, 2, \dots, J$  enter sequentially. Each representative  $j$  forms a different group (or coalition) containing a subset  $n_j$  of potential entrepreneurs. New representatives form groups as long as the group has a chance to receive preferential entry and generate positive profits, i.e.  $\Pi_j > 0$ . An equilibrium coalition structure is  $Q = (q_1, q_2, \dots, q_J)$ .<sup>12</sup>

Every group  $j$  offers political contributions  $k_j(n_j) \geq 0$  in exchange for entry  $n_j$  leading to the contingent entry structure  $N = (n_1, n_2, \dots, n_J)$  and contribution structure  $K = (k_1, k_2, \dots, k_J)$ . Therefore the offers made are represented by  $(N, K)$ .

The equilibrium coalition structure  $Q$  and offer structure  $(N, K)$  must be individually rational

$$\Pi_j \geq 0 \forall j \tag{2.7}$$

Additionally,  $Q$  is chosen anticipating  $(N, K)$ , and is incentive compatible

$$\max_{q_j} \Pi_j | q_l \forall l > j \tag{2.8}$$

because groups are formed sequentially. Offers  $(N, K)$  are also incentive compatible, such that

$$\max_{n_j, k_j} \Pi_j | n_l, k_l \forall l \neq j \tag{2.9}$$

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<sup>12</sup>Our model thus allows for competing interest groups whereas Grossman and Helpman (1994), Mitra (1999) and Perotti and Volpin (2007) have only a single representative representing all entrepreneurs in a given industry. In our model every entrepreneur also has only one representative, but different representatives form disjoint interest groups and compete for the politician's support.

The offer of group  $j$  is chosen by the politician if it is individually rational (better than allowing free entry)

$$U_p(n_j) \geq U_p(m) \tag{2.10}$$

and incentive compatible (better than the offer of any other group)<sup>13</sup>

$$U_p(n_j) > U_p(n_l) \forall l \neq j \tag{2.11}$$

The equilibrium choice of entry and political contributions  $(n_B, k_B)$  or  $(n_L, k_L)$  for  $B$  and  $L$  respectively satisfies (2.10) and (2.11) given  $Q$ , which satisfies (2.8) and (2.9).

In words: to influence the politician more effectively *citizens may join a single interest group* offering political contributions in exchange for preferential market access for all of its members. These *interest groups are set up sequentially to maximise group profits*, anticipating subsequent group formation, intergroup competition and the resulting number and distribution of entrants. After reviewing the interest groups' offers, *the politician accepts the offer of a single interest group (or rejects all offers)* and implements the according policy.

## 2.4 Model solution

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We solve using backward induction starting from the product market equilibrium, the group formation and accompanying offers under both direct control and regulation, and the initial political choice between direct control and regulation.

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<sup>13</sup>For simplicity, we assume that the politician prefers the offer with the largest political contributions in case two offers result in equal utility. If two offers are exactly equal the politician randomly picks one.

### 2.4.1 Product market equilibrium

By maximising (2.1) with respect to  $x_i$  and  $y_i$  we find price  $f(n_G) = a - n_G$  and  $\pi(n_G) = m - n_G$ . Entrepreneurs' income is

$$n_G(m - n_G) \tag{2.12}$$

which is maximised by limiting entry at  $n_G = (1/2)m$ . From (2.2) it follows that

$$s(n_G) = \omega + n_G(m - n_G) + \frac{1}{2}n_G^2 \tag{2.13}$$

which is maximised by allowing full entry  $n_G = m$ . Higher production leads to higher per citizen consumption at a lower unit price, an effect which outweighs lower firm profits. Politicians thus have to trade off higher social welfare and potentially higher private benefits.

### 2.4.2 Bribing $B$

With bribing, representatives try to bribe the politician to gain direct entry for members of their group. When accepting a bribe, the politician incurs legal costs.

**Proposition 1.** *Under bribing:*

- (a) *Representatives form groups of equal size containing citizens with any characteristic  $w_i$ .*
- (b) *All groups have an equal chance of entering.*

*Proof.* The politician chooses entrants irrespective of  $w_i$ , such that all citizens are equal in their search for preferential entry. As a result of this 'perfect competition', representatives maximise the politician's utility as long as  $\Pi_j \geq 0$  to have a positive chance of winning. Note that because  $m \leq \frac{1}{2} : \exists q_j, q_h \in Q : q_j \cap q_h = 0$ . For

these disjoint groups  $j$  and  $h$  it holds that if  $n_B = n_j : \pi_{e \in q_h} = 0$ . As a result, representative  $h$  is willing to spend any potential profits on bribes to convince the politician. The reverse holds for representative  $j$  if  $n_B = q_h$ .

Thus, any group  $l = j, h$  tries to outbid the other by maximising (2.6) subject to (2.7) by pledging all future profits as contributions to the politician.

Maximising  $U_p$  from (2.6) given (2.7) over  $n$  yields:

$$\max_{n_B} U_p(n_B) \text{ s.t. } \pi_e \geq 0 \quad (2.14)$$

resulting in

$$n_B = \frac{m}{2 - \beta} \quad (2.15)$$

with  $\frac{\partial n_B}{\partial \beta} = \frac{m}{(2 - \beta)^2} > 0$ .

The politician's and the representatives' individual rationality and incentive compatibility constraints are satisfied. Therefore the equilibrium level of entry is

$$n_B = n_j = \frac{m}{2 - \beta} \quad (2.16)$$

Given that all the groups' offers are exactly equal, the politician randomly picks one. □

Under bribing the politician can choose entrants independent of their characteristics. Because  $n \leq m \leq \frac{1}{2}$ , a minimum of two equally powerful groups are formed. Naturally the profits of a given group are zero if another group wins. To maximise their chance of winning, all groups have the same size  $q_j$  and offer the same pair  $(n_j, k_j)$  to maximise  $U_p$  as in (2.6). In equilibrium all the different groups have an equal chance of winning by offering all their profits to the politician as rents.

It is easy to see that the higher public accountability  $\beta$ , the higher entry  $n_B$  is, coming closer to the social optimum  $n_B = m$ . The utility difference from accepting

the bribe instead of implementing the social optimum,  $U_B - \beta s(m)$ , is decreasing in both  $\beta$  and  $\phi$ .

### 2.4.3 Lobbying $L$

Under regulation representatives influence the politician's decision on investor protection  $\delta$ . Given  $\delta$ , only citizens with characteristics  $w_i = 1 - \delta$  can become entrepreneur. As  $w_i$  is uniformly distributed entry is  $\delta m$ .

**Proposition 2.** *Under lobbying:*

(a) *Each entering representative seeks to attract the citizens with highest  $w_i$  not yet associated with an established group. Citizens with comparable  $w_i$  end up in the same group, because this reduces free-riding.*

(b) *The first representative always wins by forming a coalition of size  $n_L$  with those citizens with highest  $w_i$ , chosen such that all other groups can be outbid.*

*Proof.* Suppose that the first lobby, or strong lobby, contains the  $q_1$  citizens with highest  $w_i$  and offers  $(n_1, k_1)$ . The second lobby, or the counterlobby, contains an optimal share of the remaining  $m - q_1$  citizens and offers  $(n_2, k_2)$  with  $n_2 = q_1 + q_2$  (as the second lobby can not block entry by  $q_1$ ). From (2.11), the strong lobby needs to offer

$$k_1 = k_2 + \frac{\beta}{1 - \beta} [s(n_2) - s(n_1)] \quad (2.17)$$

to outbid the counterlobby.

If equilibrium outcome  $n_L = n_1 \vee n_L = m$ , then  $\pi_{e \in q_2} = 0$ . Therefore, the counterlobby offers all its potential profits to the politician, i.e.  $k_2 = (n_2 - n_1)(m - n_2)$ . To maximise the RHS of (2.17),  $n_2 = \frac{m+n_1(1-\beta)}{2-\beta}$ . Then,  $\max_{n_1} \Pi_{q_1}$  as in (2.4) subject to (2.17) yields entry of

$$n_1 = n_L = \frac{1 + (2 - \beta)(1 - \beta)}{1 + 2(2 - \beta)(1 - \beta)} m \quad (2.18)$$

To show that this is the equilibrium we now prove that (i) the counterlobby is the biggest threat to the strong lobby, (ii) the strong lobby prefers to outbid the counterlobby instead of free-riding on its offer, (iii) entrepreneurs earn nonnegative profits and (iv) the politician prefers accepting lobbying contributions over implementing the social optimum.

(i) the counterlobby is the biggest threat to the strong lobby:

$$U_p(n_2) \geq U_p(m) \text{ and } U_p(n_2) \geq U_p(n_j) \forall j > 2$$

For the politician,  $U_p(n_2) \geq U_p(m)$  if

$$\beta s(n_2) + (1 - \beta)k_2 \geq \beta s(m) \tag{2.19}$$

$$\Leftrightarrow 1 + \frac{(1 - \beta)^4(2 - \beta)}{[1 + 2(2 - \beta)(1 - \beta)]^2} \geq 1 \text{ for all } \beta \in [0, 1]$$

The counterlobby thus makes an offer superior to the social optimum.

The politician's utility from offer  $(n_j, k_j)$  with  $k_j = n_j(m - n_j)$  is

$$U_p(n_j) = \beta s(n_j) + (1 - \beta)n_j(m - n_j) \tag{2.20}$$

Taking a derivative yields  $\frac{\partial U_p(n_j)}{\partial n_j} = m - (2 - \beta)n_j \leq 0 \Leftrightarrow n_j \geq \frac{m}{2 - \beta}$ . This condition is satisfied for  $n_j \geq n_1 \geq \frac{m}{2 - \beta}$ . Therefore,  $U_p(n_2) \geq U_p(n_j) \forall j > 2$ , i.e. representatives  $j > 2$  never win.

Hence, by beating the counterlobby the IR-constraint in (2.10) and the IC-constraint in (2.11) are satisfied. Moreover, lobby groups  $j > 2$  are 'irrelevant'.

(ii) the strong lobby prefers to outbid the counterlobby instead of free-riding on the counterlobby's offer:

$$[\pi_{e \in q_1} | n_L = n_1, k_1 > 0] > [\pi_{e \in q_1} | n_L = n_2, k_1 = 0]$$

which is necessary for the IR-constraint in (2.8).

We start this proof from the third lobby, then treat the counterlobby and finally

reach the strong lobby. The reason is that if the strong lobby free-rides the counterlobby needs to outbid the third lobby, its fiercest competitor. This third lobby has zero profits when not outbidding the counterlobby and is thus willing to spend all potential profits on lobbying. It maximises the threat to the counterlobby:

$$\max_{n_3} k(n_2) = (n_3 - n_2)(m - n_3) + \frac{\beta}{1 - \beta} [s(n_3) - s(n_2)] \quad (2.21)$$

yielding  $n_3 = \frac{m + (1 - \beta)n_2}{2 - \beta}$ .

Then, the counterlobby is formed by

$$\max_{n_2} (n_2 - n_1)(m - n_2) - k(n_2|n_3) \quad (2.22)$$

resulting in  $n_2 = \frac{3(1 - \beta + \beta^2)m + (1 - \beta)(2 - \beta)n_1}{1 + 2(1 - \beta)(2 - \beta)}$ .

The strong lobby's size is determined to maximise its income

$$\max_{n_1} n_1(m - n_2) \quad (2.23)$$

which gives  $n_1 = \frac{1}{2}m \Rightarrow n_2 = \frac{1}{2} \frac{2 + 3(1 - \beta)(2 - \beta)}{1 + 2(1 - \beta)(2 - \beta)} m \wedge n = \frac{2 + 3(1 - \beta)(2 - \beta)}{1 + 2(1 - \beta)(2 - \beta)} m$  such that  $n_1 < n_2 \leq n_3 \leq m$ .

When the strong lobby free-rides, it has profits of  $\Pi_1 = n_1(m - n_2) = \frac{1}{4} \frac{(1 - \beta)(2 - \beta)}{1 + 2(1 - \beta)(2 - \beta)} m^2$ .

This is smaller than the profits of the strong lobby by optimally outbidding the counterlobby, which are  $\Pi_1 = \frac{1}{2} \frac{(1 - \beta)(2 - \beta)}{1 + 2(1 - \beta)(2 - \beta)} m^2$ , thus twice as high.

This implies that the credible threat of the counterlobby to enter and lobby is sufficient for the first lobby to make an unbeatable offer to the politician.

(iii) entrepreneurs earn nonnegative profits:

From the calculations above we know that  $\Pi_1 \geq 0$  such that also  $[\pi_e(n_L = n_1)] \geq 0$  and the IR-constraint in (2.7) is satisfied.

(iv) the politician prefers accepting lobbying contributions over implementing

the social optimum, conform (2.10).

$$U_p(n_L) - U_p(m) = \beta s(n_L) + (1 - \beta)k(n_L) - \beta s(m) \quad (2.24)$$

$$\Leftrightarrow U_p(n_L) - U_p(m) = \frac{1}{2} \frac{(1 - \beta)^4(2 - \beta)}{[1 + 2(1 - \beta)(2 - \beta)]^2} m_2$$

Taking a derivative yields  $\frac{\partial[U_p(n_L) - U_p(m)]}{\partial \beta} = -\frac{(1 - \beta)^3(21 - 27\beta + 12\beta^2 - 2\beta^3)}{[1 + 2(1 - \beta)(2 - \beta)]^3} m^2 < 0$ .  $\square$

Under lobbying the strongest citizens (highest  $w_i$ ) join forces in the 'strong lobby', seeking the highest possible  $\delta$  to block entry by their weaker counterparts to protect their profits. The strong lobby's members can enter under the rule  $d$  requested by any competing coalition (strong citizens can enter while excluding weak ones, while the reverse is impossible). The first representative chooses to represent the 'strongest' citizens and anticipates the best possible counteroffer, also during group formation. By admitting an additional, weaker citizen the strong lobby automatically deprives the counterlobby of its strongest potential member. In equilibrium the strong lobby marginally outbids the strongest counteroffer and wins the lobbying game, gaining exclusive entry for its members.<sup>14</sup>

As under  $B$ , higher accountability  $\beta$  aligns the politician's preferences more with social welfare such that entry  $n_L$  increases in  $\beta$ . The politician comes closer to the social optimum when  $\beta$  increases, as also shown by  $\frac{\partial[U_p(n_L) - U_p(m)]}{\partial \beta} < 0$ .

#### 2.4.4 Comparing bribing and lobbying

This section compares entry  $n_G$  and the politician's utility  $U_p(n_G)$  under the two bank governance systems  $B$  and  $L$ .

For  $\beta \in [0, 1)$  we find that entry, or the size of the winning group, is lower under bribing  $B$  than under lobbying  $L$ . As a result of lower entry, firms' total

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<sup>14</sup>Despite losing the lobbying game, the existence of the counterlobby indirectly increases the consumption of its members by inducing a larger strong lobby, greater entry and a lower price of the final good.

revenues are higher under  $B$ . In principle the politician prefers  $B$  to  $L$ , because larger discretion in choosing entrants under  $B$  allows extraction of larger political contributions. However, higher public accountability  $\beta$  and/or legality  $\phi$  increases legal costs, and beyond some threshold induces a shift to regulation. Dashed lines refer to  $B$  and solid lines refer to  $L$ . Bold line segments are part of the equilibrium.

#### 2.4.4.1 Entry

**Proposition 3.** *Entry is lower under bribing than under lobbying for  $\beta \in [0, 1)$ .*

*Proof.*  $n_B = \frac{m}{2-\beta} \leq \frac{1+(2-\beta)(1-\beta)}{1+2(2-\beta)(1-\beta)}m = n_L \Leftrightarrow \beta \leq 1$ , which holds.  $\square$

#### 2.4.4.2 Politician's utility

Ex ante, the politician chooses the governance system that results in the highest excess utility  $U_p(n_G) - \beta s(m)$ .<sup>15</sup>

**Proposition 4.** *The political rents appropriated by the politician are higher under  $B$  than under  $L$  for  $\beta < 1$ .*

*Proof.* For  $\beta < 1$ :  $k(n_B) = n_B(m - n_B) > n_L(m - n_L) > k(n_L)$ . The first inequality follows from  $\frac{1}{2}m < n_B < n_L < m \Leftrightarrow \beta(2 - \beta) < 1$  for  $\beta \in [0, 1)$ . The second inequality readily follows from part (ii) of proof 2.4.3 lobbying.  $\square$

**Proposition 5.** *Lobbying becomes more likely the higher public accountability  $\beta$  and legality  $\phi$ .*

*Proof.*  $U_p(n_B) > U_p(n_L) \Leftrightarrow \frac{1-\beta\phi}{2-\beta} - \beta > \frac{(1-\beta)^4(2-\beta)}{[1+2(2-\beta)(1-\beta)]^2}$   
 $\Leftrightarrow \phi < \frac{1}{\beta} \left( 1 - \beta(2 - \beta) - \frac{(1-\beta)^4(2-\beta)^2}{[1+2(2-\beta)(1-\beta)]^2} \right) = \phi^*$  with  $\frac{\partial \phi^*}{\partial \beta} < 0$   $\square$

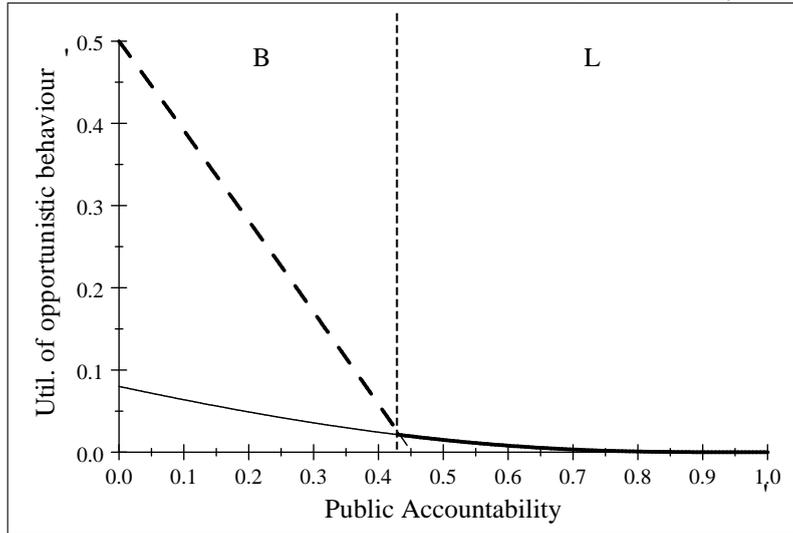
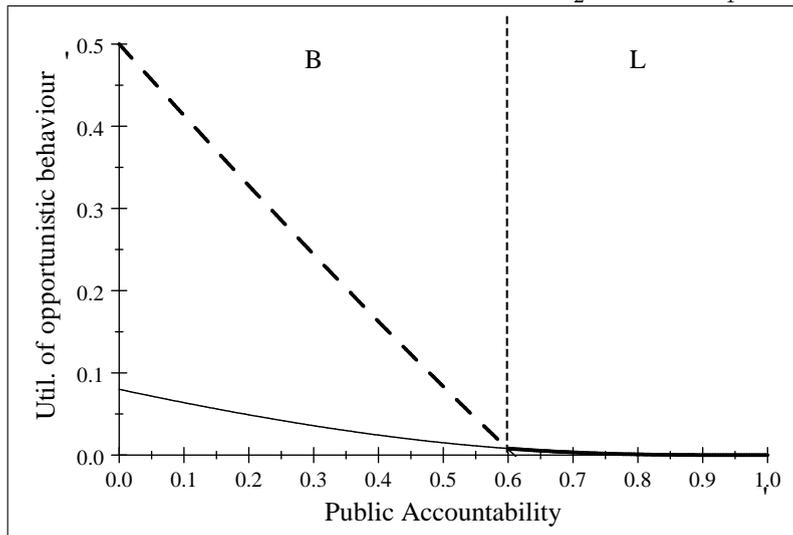
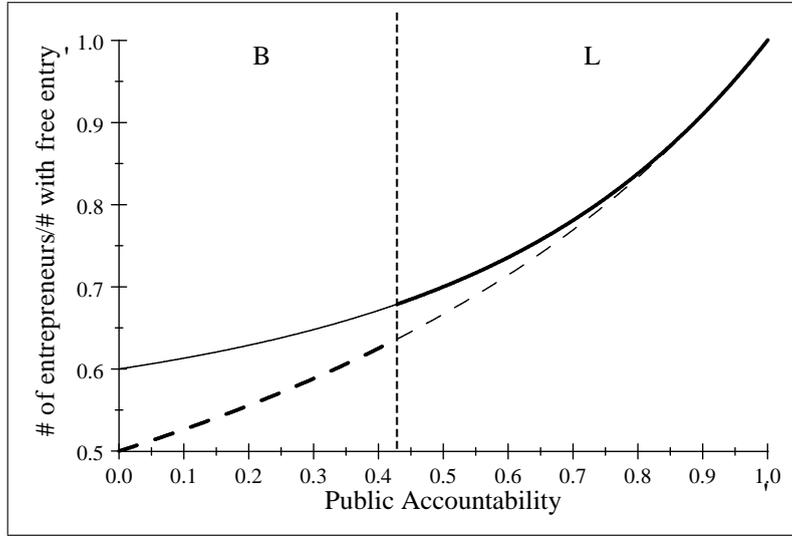
Figure 2.1: Excess utility for  $m = \frac{1}{2}$  and  $\phi = \frac{2}{3}$ Figure 2.2: Excess utility for  $m = \frac{1}{2}$  and  $\phi = \frac{1}{4}$ 

Figure 2.3: Entry in the basic model for  $\phi = \frac{2}{3}$



### 2.4.4.3 Explanation

As shown in Figures 1 and 2, the politician prefers direct control for low public accountability  $\beta$  and legality  $\phi$ . Greater  $\beta$  and  $\phi$  raise legal costs until a threshold after which politicians prefer to be legally lobbied.

Depicting entry shares  $((n_B)/m)$  and  $((n_L)/m)$  as function of  $\beta$  for  $\phi = \frac{2}{3}$  yields Figure 3. As shown before, entry  $n_G$  increases in  $\beta$  under both  $B$  and  $L$ . It lies between  $n_B = \frac{1}{2}m$  for  $\beta = 0$  where total firm income is maximised, and  $n_B = n_L = m$  for  $\beta = 1$  where the social optimum is implemented. Because the strong lobby weakens competition from other groups by increasing its size under  $L$ , the winning group is larger and entry is higher under  $L$  than under  $B$ .

<sup>15</sup>Note that  $U_p(n_G) - \beta s(m)$  is an affine transformation of  $U_p$  because  $\beta s(m)$  is independent of  $n$ .

## 2.5 Empirical illustration

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Djankov, La Porta, Lopez-de-Silanes and Shleifer (2002) argue that government officials erect high official entry barriers not to protect consumer welfare, but to be able to extract bribes from those trying to overcome these barriers. Their tollbooth argument is supported by the positive correlation between a country's entry barriers and a more unconstrained and independent executive, a less effective legislature or a more autocratic government.

This section uses the same data, dependent, explanatory and control variables as Djankov, La Porta, Lopez-de-Silanes and Shleifer (2002). We simply strengthen their findings by reporting more results and adding instrumental variable regressions in an attempt to address potential reverse causality and the possibility that both entry barriers and institutions were determined at a country's creation (especially in case of ex-colonies).

The overview of all variables can be found in table 1. In short, the dependent variables are *the number of different procedures to follow, the time spent and the official costs* that a prospective entrepreneur officially needed to make to obtain a legal status for a start-up in 1999. Two measures proxy for political accountability  $\beta$  by measuring the ability of the executive to undertake action independently: *the executive de facto independence* and *the effectiveness of the legislature*. The last explanatory variable, *constraints on executive power*, measures a combination of political accountability  $\beta$  and legality  $\phi$ , which we use as proxy for the costs of bribery  $\beta\phi$ . We control for *legal origin* or *GDP per capita in 1999*.

We use the following instruments:

- (i) *settler mortality*<sup>16</sup>, *latitude of the country's capital city* and *the country's*

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<sup>16</sup>Depending on whether colonisers could comfortably survive in a colony's environment they either created institutions to 'mimic' home (Neo-Europes) or institutions that allowed for maximum extraction of resources with a limited number of people (extractive institutions). In non-colonised countries institutions were shaped by local inhabitants used to the local environment. In such

*resource dependence* as measures of the country's geographical features,

- (ii) *ethnic, linguistic and religious fractionalisation of the population*,
- (iii) *UN-diplomats' parking violations* and *social trust* as measures of culture.

These instrumental variables have been shown to affect political institutions (Acemoglu, Johnson and Robinson, 2001; Alesina, Devleeschauwer, Bjørnskov, 2008; Easterly, Kurlat and Wacziarg, 2003; Fisman and Miguel, 2008), but are unlikely to affect entry barriers directly. Therefore they address the issue of reverse causality. To rule out the possibility that entry barriers and institutions were jointly determined at a country's creation, we seek instruments that are independent of the European power that colonised a given country. The geographical features in (i) clearly satisfy this condition. Admittedly all colonisers did bring an additional ethnicity, language, religion and thus culture to their colonies, such that the instruments in (ii) and (iii) can be questioned. However, we believe that these measures have influenced political institutions mainly after independence. To mitigate such concerns we show that results are very similar for regressions using (i) and (ii) or (i) and (iii) as instruments. Finally, entry barriers might be affected by our instruments through (institutional) factors other than those incorporated here. However, because the creation or dismantlement of entry barriers is a political choice it seems natural to focus on insitutional variables that measure constraints on the political executive.

Table 2 contains descriptive statistics for all variables. Because we lack some data for settler mortality and social trust our sample is reduced in the IV-regressions. For each variable we report the descriptive statistics for both the largest and smallest sample used in the regressions. We find it reassuring that these samples do not differ significantly along any variable, except for a lower number of countries with

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countries in- and outside Europe we set settler mortality to zero. The results remain the same if we set it to 15 per 1000 per year, based on mortality of British troops in Britain (Acemoglu, Johnson and Robinson, 2001).

Socialist legal origin in the small sample (significant at 8.1

Tables 3 and 4 show the results from OLS-regressions controlling for respectively legal origin and GDP per capita, partially redoing the work by Djankov, La Porta, Lopez-de-Silanes and Shleifer (2002) in specification (1). Looking at both tables we conclude that there is a strong negative correlation between the number of procedures and the time it takes to open a business, and our variables for political accountability and legality. When investigating the official cost of opening a business in US-dollars and control for GDP per capita we do not find the same relation, due positive correlation between political institutions and GDP per capita.

In tables 5 and 6 we run the same regressions, now instrumenting our political/legal variables. These IV-regressions confirm the relationship between entry barriers one the one hand and political accountability and legality on the other. Greater political accountability and legality result in a smaller number of procedures and a smaller amount of time required to register a business. Using the Durbin-Wu-Hausman test of endogeneity reveals that the IV-regressions are warranted in these specifications. Again we do not have clear results for the cost of opening a business, with the instrumental variables approach mostly being rejected by the DWH-test. If anything, regression (6) in Table 6 indicates that official costs also decrease when political and legal institutions improve. As expected, countries with English legal origin have fewer procedures and require less time to set up a business. French and German legal origin are associated with a higher number of procedures. The official costs of opening a business are positively correlated with GDP per capita.

For the number of procedures and the time to open a business we perform robustness checks in tables 7, 8 and 9. In table 7 we truncate our sample from below, as both the number of procedures and the time spent are naturally bound at zero. In tables 8 and 9 we impute missing values using chained equations and rerun the OLS and IV regressions from tables 3 to 6. We only lose significance for the effectiveness

of the legislature and constraints on the executive in regressions (4) from table 9. All other results remain unchanged.

Our empirical illustration shows that higher political accountability and legality cause lower barriers to entry. The effects are always significant for the number of procedures and the time required to open a business. For the official costs to open a business results are much weaker.

## 2.6 Conclusion

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This paper models the political choice between directly controlling entry to a market and setting up a rule that governs entry. In the former the politician freely selects entrants in exchange for illegal bribes, independent of people's characteristics. In the latter the politician drafts a rule in exchange for legal lobbying contributions, allowing everyone having characteristics above a certain threshold to enter. We show that being bribed over entry allows for greater extraction of political rents than being lobbied for strict rules. The reason is that rules regulating access create a free riding advantage for interest groups containing citizens with 'strong' characteristics. Such free-riding reduces competition among interest groups relative to the bribing case. In equilibrium, the politician prefers to be bribed and set relatively low entry for sufficiently low accountability and legality. Beyond a certain threshold, the illegality of bribes induces the politician to regulate entry and be legally lobbied, leading to a higher entry rate. We provide empirical support for our findings by showing that lower political accountability or legality leads to higher official entry barriers. These high entry barriers enable government officials to collect bribes from those wanting to circumvent them. In terms of our model, there is direct control of entry when accountability and legality are low. The model can be extended in many ways. It does not address issues like the differences between politicians and bureaucrats, entrepreneurs' unobservable characteristics, international competition

and attributes of specific markets. For example, in the next chapter we use a similar model to explain bank control, the distribution of bank finance and the stability of the banking sector.

## 2.7 Tables

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<i>Table 1. Variable Description</i>			
	<i>Variable</i>	<i>Source</i>	<i>Description</i>
Panel A. Dependent Variables			
1	Number of procedures	Djankov, La Porta, Lopez-de-Silanes and Shleifer (2002)	The number of different procedures that a start-up has to comply with in order to obtain a legal status, i.e., to start operating as a legal entity.
2	Time	Djankov, La Porta, Lopez-de-Silanes and Shleifer (2002)	The time it takes to obtain legal status to operate a firm, in business days. A week has five business days and a month has twenty-two.
3	Cost as percentage of GDP per capita	Djankov, La Porta, Lopez-de-Silanes and Shleifer (2002)	The cost of obtaining legal status to operate a firm as share of per capita GDP in 1999. It includes all identifiable official expenses (fees, costs of procedures and forms, photocopies, fiscal stamps, legal and notary charges, etc.). The company is assumed to have a start-up capital of ten times per capita GDP in 1999.

Panel B. Main Explanatory Variables			
4	Executive de facto independence	Jagers and Marshall (2000)	Index of 'operation (de facto) independence of chief executive'. Descending from 1 to 7 (1 = pure individual; 2 = intermediate category; 3 = slight to moderate limitations; 4 = intermediate category; 5 = substantial limitations; 6 = intermediate category; 7 = executive parity or subordination). Average of the years 1945 through 1998.
5	Effectiveness of legislature	The Cross-National Time-Series Data Archive <a href="http://www.databanks.siteshosting.net/www/main.htm">www.databanks.siteshosting.net /www/main.htm</a>	Index of the effectiveness of the legislature. Ascending scale from 1 to 4 (1 = no legislature; 2 = largely ineffective; 3 = partly effective; 4 = effective). Average of the years 1945 through 1998.
6	Constraints on executive power	Henisz (2001)	Index of constraints on the executive power based on the number of effective veto points in a country. Veto points include (1) an effective legislature (represents two veto points in the case of bicameral systems); (2) an independent judiciary; and (3) a strong federal system. Average of the years 1945 through 1998.
Panel C. Control Variables			
7	GDP Per capita	World Bank	Gross domestic product per capita in current U. S. dollars in 1999.
8	Legal Origin	La Porta, Lopez-de-Silanes, Shleifer and Vishny (1999)	Division of countries in English, French, German, Scandinavian and Socialist legal origin.

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Panel D. Instrumental Variables			
9	Settler Mortality	Acemoglu, Johnson and Robinson (2001)	Annual mortality rates of soldiers, bishops, and sailors stationed in the colonies between the 17th and 19th centuries per 1000 men (largely based on work of historian Philip Curtin).
10	Resource dependence	World Development Indicators	The product of unit resource rents and the physical quantities of energy (crude oil, natural gas, and coal), minerals (bauxite, copper, iron, lead, nickel, phosphate, tin, gold, and silver) and wood (in excess of natural growth).
11	Latitude	CIA Factbook	Latitude of a country's capital city.
12	Ethnic, Language and Religious Fractionalisation	Alesina, Devleeschauwer, Easterly, Kurlat and Wacziarg (2003)	The fractionalisation score in a country $j$ is $1 - \sum s_{i,j}$ where $s_{i,j}$ is the share of a given group $i$ in country $j$ , that is one minus the Herfindahl index.
13	Parking Violations	Fisman and Miguel (2008)	Parking violations per UN-diplomat from Nov. 1997 till Nov. 2002, when stricter rules were introduced.
14	Social Trust	Bjornskov (2008)	Data on trust between individuals in a given country. Compiled using World Values Survey, the AfroBarometer, LatinoBarometre, the Asian and East Asian Barometers and the Danish Social Capital Project. The data are fully listed and described in Bjornskov (2008).

<i>Table 2. Descriptive Statistics</i>							
Our sample contains 85 countries from Djankov, La Porta, Lopez-de-Silanes and Shleifer (2002). We report summary statistics for both the largest sample (N) in OLS-regressions and the smallest sample in IV-regressions. For the instruments we show summary statistics for the largest and smallest sample in IV-regressions. There is only a significant difference between the large and small sample for Socialist legal origin, which is more common in the large sample							
		<i>N</i>	<i>Mean</i>	<i>Median</i>	<i>Stand. dev.</i>	<i>Mini- mum</i>	<i>Maxi- mum</i>
<b>Panel A. Bank Control Indexes</b>							
1	Number of procedures	84	10.55	10.00	4.35	2.00	21.00
		60	10.48	10.00	4.47	2.00	20.00
2	Time	84	47.77	42.00	30.77	2.00	152.00
		60	46.62	40.50	31.29	2.00	152.00
3	Costs in US-dollar	83	1319.26	583.82	1673.14	11.59	7085.35
		60	1547.15	785.55	1766.88	11.59	7085.35
<b>Panel B. Political Accountability</b>							
4	Executive independence	84	4.32	3.64	1.78	1.57	7.00
		60	4.66	3.75	1.79	1.92	7.00
5	Effectiveness legislat ure	73	1.75	1.60	0.90	0.00	3.00
		60	1.78	1.59	0.93	0.00	3.00
6	Constraints exec. power	84	4.31	3.55	1.85	1.20	7.00
		60	4.62	3.75	1.90	1.59	7.00

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Panel C. Control Variables							
7	GDP/capita	84	8044.28	2760.00	10357.58	190.00	38530.00
	in \$ in 2001	60	9881.51	4180.00	11043.45	240.00	38530.00
8	English	84	0.27	0.00	0.45	0.00	1.00
	legal origin	60	0.28	0.00	0.45	0.00	1.00
9	French	84	0.38	0.00	0.49	0.00	1.00
	legal origin	60	0.43	0.00	0.50	0.00	1.00
10	Socialist	84	0.23	0.00	0.42	0.00	1.00
	legal origin	60	0.13*	0.00	0.42	0.00	1.00
11	Scandinavian	84	0.05	0.00	0.21	0.00	1.00
	legal origin	60	0.07	0.00	0.25	0.00	1.00
12	German	84	0.07	0.00	0.26	0.00	1.00
	legal origin	60	0.08	0.00	0.28	0.00	1.00

Panel E. Instrumental Variables							
13	Settler	78	116.31	0.00	406.90	0.00	2004.00
	mortality	60	95.41	8.55	278.35	0.00	2004.00
14	Latitude	78	0.36	0.39	0.20	0.01	0.71
		60	0.35	0.36	0.21	0.01	0.71
15	Resource	78	2.48	0.60	4.91	0.00	29.30
	dependence	60	2.60	0.65	4.89	0.00	29.30
16	Ethnic	78	0.40	0.40	0.25	0.00	0.93
	fractionalis.	60	0.40	0.39	0.27	0.00	0.93
17	Language	78	0.32	0.23	0.28	0.00	0.92
	fractionalis.	60	0.32	0.22	0.29	0.00	0.92
18	Religious	78	0.42	0.43	0.24	0.00	0.86
	fractionalis.	60	0.40	0.37	0.24	0.00	0.86
19	Parking	71	13.08	3.50	25.77	0.00	139.60
	violations	60	13.89	3.40	27.67	0.00	139.60
20	Social	71	27.92	24.68	13.90	5.77	64.27
	trust	60	28.96	26.26	14.83	5.77	64.27

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*Table 3. Accountability, Legality and Entry Regulation: OLS*

The dependent variables are the Log of number of procedures, the Log of time to open a business and the Log of cost to open a business (in US-dollar). We control for the legal origin with the omitted category being German legal origin.

<i>Accountability and Legality</i>		<i>Log number of procedures</i>	<i>Log time to open business</i>	<i>Cost over GDP/capita</i>
		(1)	(2)	(3)
Executive independence	Coefficient	-0.106***	-0.192***	0.270***
	P-Value	(0.000)	(0.001)	(0.002)
	R-squared	0.554	0.441	0.363
	Observations	84	84	83
Effectiveness legislature	Coefficient	-0.267***	-0.453***	0.518***
	P-Value	(0.000)	(0.000)	(0.005)
	R-squared	0.604	0.477	0.376
	Observations	73	73	72
Constraints on executive power	Coefficient	-0.093***	-0.173***	0.239***
	P-Value	(0.001)	(0.001)	(0.003)
	R-squared	0.541	0.433	0.354
	Observations	84	84	83
Controls for legal origin	English	Negative	Negative	Negative
	French	Insignificant	Insignificant	Insignificant
	Omitted: Socialist	Insignificant	Insignificant	Negative
	German LO Scandinavian	Negative	Insignificant	Negative

<i>Table 4. Accountability, Legality and Entry Regulation: OLS</i>				
The dependent variables are the Log of number of procedures, the Log of time to open a business and the Log of cost to open a business (in US-dollar). We control for Log GDP per capita in 1999.				
<i>Accountability and Legality</i>		<i>Log number of procedures</i>	<i>Log time to open business</i>	<i>Cost over GDP/capita</i>
		(1)	(2)	(3)
Executive independence	Coefficient	-0.125***	-0.191***	-0.149
	P-Value	(0.000)	(0.002)	(0.106)
	R-squared	0.318	0.321	0.399
	Observations	84	84	83
Effectiveness legislature	Coefficient	-0.330***	-0.438***	-0.437**
	P-Value	(0.000)	(0.002)	(0.044)
	R-squared	0.342	0.333	0.412
	Observations	73	73	72
Constraints on executive power	Coefficient	-0.105***	-0.164***	-0.135
	P-Value	(0.002)	(0.003)	(0.120)
	R-squared	0.297	0.309	0.398
	Observations	84	84	83
Control	GDP/capita	Negative	Negative	Negative

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*Table 5. Accountability, Legality and Entry Regulation: IV*

The dependent variables are the Log of number of procedures, the Log of time to open a business and the Log of cost to open a business (in US-dollar). We control for legal origin with the omitted category being German legal origin. The 'F-stat 1st' refers to the F-statistic of the first stage regression and the 'DWH' to the P-Value of the Durbin-Wu-Hausmann test of endogeneity of instrumented variables. The significance levels for the F-stat refer to a two-sided  $\alpha$  of 1, 5 and 10 percent.

Panel A. Instrumenting for settler mortality, latitude, resource dependence and ethnic, language and religious fractionalisation.

<i>Accountability and Legality</i>		<i>Log number of procedures</i>	<i>Log time to open business</i>	<i>Cost over GDP/capita</i>
		(1)	(2)	(3)
Executive independence	Coefficient	-0.224***	-0.406***	0.328**
	P-Value	(0.000)	(0.000)	(0.027)
	Sargan stat.	0.926	0.480	0.218
	F-stat 1st	9.98*	9.98*	10.28*
	DWH	0.003***	0.002***	0.393
	Observations	78	78	77
Effectiveness legislature	Coefficient	-0.385***	-0.700***	0.548**
	P-Value	(0.000)	(0.000)	(0.025)
	Sargan stat.	0.911	0.406	0.111
	F-stat 1st	10.06*	10.06*	11.10*
	DWH	0.059*	0.024**	0.543
	Observations	67	67	66

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Constraints on executive power	Coefficient	-0.216***	-0.395***	0.292**
	P-Value	(0.000)	(0.000)	(0.037)
	Sargan stat.	0.763	0.464	0.190
	F-stat 1st	8.18*	8.18*	8.68*
	DWH	0.002***	0.002***	0.387
	Observations	78	78	77
Controls for legal origin	English	Negative	Negative	Negative
	French	Insignificant	Insignificant	Insignificant
Omitted:	Socialist	Negative	Insignificant	Negative
German LO	Scandinavian	Negative	Insignificant	Negative
Panel B. Instrumenting for settler mortality, latitude, resource dependence, social trust and UN-diplomats' parking violations				
<i>Accountability and Legality</i>		<i>Log number of procedures</i>	<i>Log time to open business</i>	<i>Cost over GDP/capita</i>
		(4)	(5)	(6)
Executive independence	Coefficient	-0.208***	-0.358***	0.260*
	P-Value	(0.000)	(0.000)	(0.057)
	Sargan stat.	0.641	0.685	0.459
	F-stat 1st	11.96**	11.96**	12.29**
	DWH	0.017**	0.009***	0.915
	Observations	71	71	70

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Effectiveness legislature	Coefficient	-0.370***	-0.636***	0.457*
	P-Value	(0.000)	(0.000)	(0.060)
	Sargan stat.	0.541	0.626	0.629
	F-stat 1st	11.26**	11.26**	11.72**
	DWH	0.084*	0.055*	0.801
	Observations	61	61	60
Constraints on executive power	Coefficient	-0.187***	-0.326***	0.238*
	P-Value	(0.000)	(0.000)	(0.069)
	Sargan stat.	0.317	0.427	0.551
	F-stat 1st	10.13*	10.13*	10.66*
	DWH	0.018**	0.015**	0.811
	Observations	71	71	70
Controls for legal origin Omitted: German LO	English	Negative	Negative	Negative
	French	Insignificant	Insignificant	Insignificant
	Socialist	Negative	Insignificant	Negative
	Scandinavian	Negative	Insignificant	Negative

Table 6. *Accountability, Legality and Entry Regulation: IV*

The dependent variables are the Log of number of procedures, the Log of time to open a business and the Log of cost to open a business (in US-dollar). We control for Log GDP per capita in 1999. The 'F-stat 1st' refers to the F-statistic of the first stage regression and the 'DWH' to the P-Value of the Durbin-Wu-Hausmann test of endogeneity of instrumented variables.

Panel A. Instrumenting for settler mortality, latitude, resource dependence and ethnic, language and religious fractionalisation.

<i>Accountability and Legality</i>		<i>Log number of procedures</i>	<i>Log time to open business</i>	<i>Cost over GDP/capita</i>
		(1)	(2)	(3)
Executive independence	Coefficient	-0.491**	-0.819**	-0.299
	P-Value	(0.028)	(0.036)	(0.446)
	Sargan stat.	0.898	0.708	0.193
	F-stat 1st	10.59	10.59	10.02
	DWH	0.011**	0.017**	0.713
	Observations	78	78	77
Effectiveness legislature	Coefficient	-1.127**	-1.662**	-1.321
	P-Value	(0.020)	(0.042)	(0.145)
	Sargan stat.	0.939	0.589	0.232
	F-stat 1st	15.17	15.17	14.36
	DWH	0.012**	0.039**	0.254
	Observations	67	67	66
Constraints on executive power	Coefficient	-0.498**	-0.849*	-0.512
	P-Value	(0.047)	(0.053)	(0.243)
	Sargan stat.	0.913	0.782	0.374
	F-stat 1st	9.43	9.43	8.89
	DWH	0.009***	0.013**	0.346
	Observations	78	78	77

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Control	GDP/capita	Insignificant	Insignificant	Positive
Panel B. Instrumenting for settler mortality, latitude, resource dependence, social trust and UN-diplomats' parking violations				
<i>Accountability and Legality</i>		<i>Log number of procedures</i>	<i>Log time to open business</i>	<i>Cost over GDP/capita</i>
		(4)	(5)	(6)
Executive independence	Coefficient	-0.379***	-0.557**	-0.543*
	P-Value	(0.008)	(0.021)	(0.088)
	Sargan stat.	0.909	0.642	0.294
	F-stat 1st	15.21	15.21	14.38
	DWH	0.025**	0.062*	0.139
	Observations	71	71	70
Effectiveness legislature	Coefficient	-0.896***	-1.210**	-1.294*
	P-Value	(0.012)	(0.041)	(0.083)
	Sargan stat.	0.869	0.866	0.472
	F-stat 1st	19.34	19.34	18.27
	DWH	0.030**	0.099*	0.144
	Observations	61	61	60
Constraints on executive power	Coefficient	-0.306**	-0.448**	-0.535*
	P-Value	(0.017)	(0.039)	(0.069)
	Sargan stat.	0.585	0.612	0.370
	F-stat 1st	13.47	13.47	12.81
	DWH	0.054*	0.119	0.098*
	Observations	71	71	70
Control	GDP/capita	Insignificant	Insignificant	Positive

<i>Table 7. Accountability, Legality and Entry Reg.: Truncated Log Pseudo-likelihood</i>					
The dependent variables are the Log of number of procedures and the Log of time to open a business, truncated at $\ln(0) = 1$ . We control for the legal origin with the omitted category being German legal origin or for Log GDP per capita.					
<i>Accountability and Legality</i>		<i>Log number of procedures</i>		<i>Log time to open business</i>	
		<i>Control for LO</i>	<i>Control for GDP</i>	<i>Control for LO</i>	<i>Control for GDP</i>
		(1)	(2)	(3)	(4)
Executive independence	Coefficient	-0.083***	-0.105***	-0.144***	-0.150***
	P-Value	(0.001)	(0.001)	(0.002)	0.005
	Wald Stat.	74.02	22.70	36.76	20.38
	Observations	82	82	82	82
Effectiveness legislature	Coefficient	-0.217***	-0.287***	-0.347***	-0.348***
	P-Value	(0.000)	(0.000)	(0.001)	(0.004)
	Wald Stat.	86.89	25.54	37.03	19.40
	Observations	71	71	71	71
Constraints on executive power	Coefficient	-0.072***	-0.087***	-0.129***	-0.128***
	P-Value	(0.002)	(0.004)	(0.004)	(0.008)
	Wald Stat.	72.04	20.95	36.67	19.64
	Observations	82	82	82	82
Controls for legal origin Omitted: German LO	English	Negative		Negative	
	French	Insignificant		Positive	
	Socialist	Insignificant		Insignificant	
	Scandinavian	Negative		Negative	
Control	GDP/cap		Negative		Negative

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*Table 8. Accountability, Legality and Entry Regulation: OLS  
Missing Values Imputed by Chained Equations*

The dependent variables are the Log of number of procedures and the Log of time to open a business. We control for the legal origin with the omitted category being German legal origin or for Log GDP per capita.

<i>Accountability and Legality</i>		<i>Log number of procedures</i>		<i>Log time to open business</i>	
		<i>Control for LO</i>	<i>Control for GDP</i>	<i>Control for LO</i>	<i>Control for GDP</i>
		(1)	(2)	(3)	(4)
Executive independence	Coefficient	-0.107***	-0.124***	-0.193***	-0.189***
	P-Value	(0.000)	(0.000)	(0.001)	0.002
	R-squared	0.560	0.324	0.447	0.327
	Observations	85	85	85	85
Effectiveness legislature	Coefficient	-0.241***	-0.245***	-0.398***	-0.335***
	P-Value	(0.000)	(0.002)	(0.001)	(0.007)
	R-squared	0.585	0.313	0.452	0.305
	Observations	85	85	85	85
Constraints on executive power	Coefficient	-0.094***	-0.104***	-0.173***	-0.163***
	P-Value	(0.001)	(0.002)	(0.001)	(0.004)
	R-squared	0.548	0.304	0.439	0.315
	Observations	85	85	85	85
Controls for legal origin Omitted: German LO	English	Negative		Negative	
	French	Insignificant		Insignificant	
	Socialist	Insignificant		Insignificant	
	Scandinavian	Negative		Insignificant	
Control	GDP/cap		Negative		Negative

*Table 9. Accountability, Legality and Entry Regulation: IV*  
*Missing Values Imputed by Chained Equations*

The dependent variables are the Log of number of procedures, the Log of time to open a business and the Log of cost to open a business (in US-dollar). We control for legal origin with the omitted category being German legal origin. The 'F-stat 1st' refers to the F-statistic of the first stage regression and the 'DWH' to the P-Value of the Durbin-Wu-Hausmann test of endogeneity of instrumented variables. The significance levels for the F-stat refer to a two-sided  $\alpha$  of 1, 5 and 10 percent.

Panel A. Instrumenting for settler mortality, latitude, resource dependence and ethnic, language and religious fractionalisation.

<i>Accountability and Legality</i>		<i>Log number of procedures</i>		<i>Log time to open business</i>	
		<i>Control for LO</i>	<i>Control for GDP</i>	<i>Control for LO</i>	<i>Control for GDP</i>
		(1)	(2)	(3)	(4)
Executive independence	Coefficient	-0.190***	-0.665*	-0.353***	-1.035*
	P-Value	(0.000)	(0.051)	(0.000)	(0.060)
	Sargan stat.	0.271	0.845	0.274	0.756
	F-stat 1st	9.46*	10.94*	9.46*	10.94*
	DWH	0.008***	0.002***	0.009***	0.005***
	Observations	85	85	85	85
Effectiveness legislature	Coefficient	-0.354***	-2.131	-0.656***	-3.085
	P-Value	(0.000)	(0.209)	(0.000)	0.224
	Sargan stat.	0.275	0.965	0.295	0.895
	F-stat 1st	12.06**	12.07**	12.06**	12.07**
	DWH	0.030**	0.001***	0.130	0.007***
	Observations	85	85	85	85

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Constraints on executive power	Coefficient	-0.186***	-0.757*	-0.348***	-1.221
	P-Value	(0.000)	(0.098)	(0.000)	(0.104)
	Sargan stat.	0.301	0.948	0.304	0.930
	F-stat 1st	7.76*	9.66*	7.76*	9.66*
	DWH	0.004***	0.001***	0.005***	0.002***
	Observations	85	85	85	85
Controls for legal origin	English	Negative		Negative	
	French	Insignificant		Insignificant	
	Omitted: Socialist	Negative		Insignificant	
	German LO Scandinavian	Negative		Insignificant	
Control	GDP/cap		Insignificant		Insignificant
Panel B. Instrumenting for settler mortality, latitude, resource dependence, social trust and UN-diplomats' parking violations					
<i>Accountability and Legality</i>		<i>Log number of procedures</i>		<i>Log time to open business</i>	
		<i>Control for LO</i>	<i>Control for GDP</i>	<i>Control for LO</i>	<i>Control for GDP</i>
		(1)	(2)	(3)	(4)
Executive independence	Coefficient	-0.193***	-0.350***	-0.369***	-0.524***
	P-Value	(0.000)	(0.004)	(0.000)	(0.009)
	Sargan stat.	0.110	0.338	0.418	0.513
	F-stat 1st	12.17**	15.48**	12.17**	15.48**
	DWH	0.003***	0.014**	0.002***	0.038**
	Observations	85	85	85	85

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Effectiveness legislature	Coefficient	-0.355***	-0.705***	-0.689***	-1.091**
	P-Value	(0.000)	(0.007)	(0.000)	(0.015)
	Sargan stat.	0.047**	0.212	0.360	0.466
	F-stat 1st	14.71**	17.43**	14.71**	17.43**
	DWH	0.021**	0.024**	0.003***	0.034**
	Observations	85	85	85	85
Constraints on executive power	Coefficient	-0.179***	-0.327**	-0.351***	-0.515**
	P-Value	(0.000)	(0.010)	(0.000)	0.016
	Sargan stat.	0.062*	0.220	0.344	0.468
	F-stat 1st	10.20*	13.50**	10.20*	13.50**
	DWH	0.003***	0.022**	0.001***	0.037**
	Observations	85	85	85	85
Controls for legal origin Omitted: German LO	English	Negative		Negative	
	French	Insignificant		Insignificant	
	Socialist	Negative		Insignificant	
	Scandinavian	Negative		Insignificant	
Control	GDP/cap		Insignificant		Insignificant