Entry: direct control or regulation?

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Publication date
2009

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11th of December 2009

Abstract

We model a setting in which citizens form coalitions to seek preferential entry to a given market. The lower entry the higher firm profits and political contributions, but the lower social welfare. Politicians choose to either control entry directly and be illegally bribed, or regulate entry using a general rule and be legally lobbied. We show how direct control generates lower entry rates and grants politicians more bargaining power, as no interest group has a strategic advantage in the lobbying game. Using a rule namely creates a cutt-off creating a free riding advantage for citizens with characteristics favoured by the rule. By forming a separate interest group these 'strongest' citizens are able to reduce competition from other groups, which is impossible with direct political control.

Despite generating lower rents, the illegality of bribes induces politicians to switch to regulation when political accountability is high. Countries with weak accountability are characterised by bribing and relatively low entry while countries with strong accountability exhibit lobbying and higher entry rates.

Keywords: Political Economy, Entry, Lobbying, Bribing
JEL Classifications: C71, D31, D71, H81

[Acknowledgements] We would like to thank discussants and participants at seminars at the Australian National University, the EFA 2008, European University Institute Florence, Erasmus Universiteit Rotterdam, IESE in Barcelona, IIES in Stockholm, London School of Economics, Universiteit van Amsterdam and the Université de Toulouse for help and useful suggestions. Marcel Vorage acknowledges financial support from the Marie Curie Research Training Network through the 6th framework of the European Commission.

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1 Introduction

Both bribing and lobbying are ways for special interests to influence government officials and are therefore often treated as one and the same. However, recent research documents important differences between the two. Firstly, government officials can use income from lobbying for political campaigns only. Officials then cater to special interests depending on the electoral harm of the requested policy and the electoral gain from having larger campaign funds (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 in lobbying politicians' worrying about reelection and bribing bureaucrats' wanting to make a good impression on their peers. Political control is socially optimal when flexibility and compensation to losers are important, but time-inconsistency is limited. But as politicians decide on control, practice tends to diverge from this social optimum. Similarly, Campos and Giovanni (2008) argue that lobbying mainly involves accountable high-level politicians while bribing involves relatively nonaccountable low-level bureaucrats. They find that lobbying and bribing are substitutes with lobbying being more widespread in countries that are more democratic, federally organised, with presidential systems and where the executive is more (de facto and de jure) constrained. Thirdly lobbying seeks to change policy whereas bribing seeks to circumvent existing policy. Based on this difference Harstad and Svensson (2006) argue that lobbying is a more 'permanent ' form of influence. Their model shows that lobbying is more expensive than bribing and is preferred by special interests when political alternation is limited and when a country is economically developed. Della Porta (2004) points out that political commitments in exchange for lobbying are more credible when political parties are strong. Finally, bribing is illegal whereas lobbying is legal in most countries (Harstad and Svensson, 2006).

Our paper adds an additional difference to this list: the formation of special interest groups is different under bribing and lobbying. The starting point is

that a single politician sets a rule and chooses to accept illegal bribes and allow the rule to be broken (direct control) or enforce the rule and be legally lobbied (regulation). Importantly, under direct control the politician can accept bribes from citizens independent of their characteristics whereas under regulation the politician drafts a rule discriminating citizens based on their characterics.[1] 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 and political contributions. Using this outcome, we argue that direct control is more likely when accountability and judicial independence are low.

The main intuition in the paper is as follows. Under both direct control and regulation the first lobby anticipates the formation of other lobbies and their potential counteroffers to the politician. Knowing this, the first lobby is set up with optimal membership and size. As characteristics do not matter under direct control, there is 'perfect competition' between lobby groups such that the first lobby is only able to match the fiercest counteroffer. Under regulation the rule determines a cutt-off, more easily satisfied by some than others and hence creates a free riding advantage for lobbies containing citizens with 'strong' characteristics.[2] The first lobby uses this unequal competition by selecting the strongest citizens, making itself more powerful and weakening others. Under regulation the first lobby always outbids any counteroffer in equilibrium. As a mere example take entry to a rollercoaster in an amusement park. Suppose that the visitors of the park prefer riding the rollercoaster alone, without having to queue. If no minimum height requirement exists, all the park's visitors have an equal chance of bribing the rollercoaster's operator for preferential treatment. With a height requirement tall visitors can lobby the operator to raise it, blocking access by shorter people. However, entering the attraction

[1] In India for example, direct control allows for random failures on driving exams that incentivise individuals to bribe bureaucrats to get their driving license (Bertrand, Djankov, Hanna and Mullainathan, 2007).

[2] A enforced rule governing entry allows citizens with 'strong' characteristics (such as wealth or education) to enter while excluding those with 'weak' characteristics, while the reverse is impossible.

yourself and blocking access by a taller person is impossible. Therefore taller visitors can always free-ride on height requirements demanded by shorter ones. In addition, by including the next tallest individual in the their group, the tall effectively deprive competing groups of their tallest (hence strongest) potential member. Interest groups are larger under regulation because there is no such incentive under direct control, where height is irrelevant. The main results of the paper follow: direct control over entry allows the politician to extract larger political contributions and implies lower entry rates than being lobbied for rules that are enforced.

So, what is the role of legality? In equilibrium, the politician chooses direct control for low enough accountability and legality. Beyond some level of accountability the illegality of bribes induces the politician to regulate entry and be legally lobbied, resulting in a higher entry rate and smaller political rents than under direct control.

2 Related Literature

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.[3,4] 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 and legislators. In our model politicians choose 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

[3] 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.

[4] For a great overview on political economy models (in trade) and their assumptions, see Nelson (2007).

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).[5] Bribing is additionally constrained by legal institutions such as an independent judiciary, also in case of prefential access to state bank lending (La Porta, Lopez-de-Silanes and Shleifer, 2006). Throughout the paper we seperate 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 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 invest-

[5] 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).

ment and growth (Mauro, 1995).[6] 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).[7]

3 The model

3.1 Setup

A single politician chooses to directly control or to regulate entry into a sector. To start a firm and produce one unit of final good, a citizen needs make an investment of I, which we normalise to one. Interest groups seek preferential entry into the protected market. Concretely, the politician accepts the contributions from one of the endogenously formed coalitions in exchange for allowing only its members to produce. In practice, other entry barriers may exist, such industry-specific technology or knowledge. Insofar as these can not be overcome via investment I we abstract from such barriers.

Next we discuss two mechanisms through which the politician can determine entry: licensing and financing. In the former the politician either distributes licenses directly or sets minimum conditions to be granted a licence. In the latter the politician either directly grants state loans and subsidies or regulates private financing by setting lending rules, such as the level of investor protection.

3.1.1 Licensing

Consider a unit mass of citizens indexed by i differing in characteristic w_i, which is uniformly distributed on the interval $[0, 1]$. Under direct control D the politician picks the individual entrants irrespective of w_i, whereas under

[6] 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).

[7] 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.

regulation R the politician sets rule δ and allows only those with $w_i \geq \delta \in [0,1]$ to enter by making an investment of one.[8] The choice of δ thus translates into a unique level of entry n.

3.1.2 Financing

Consider the same unit mass of citizens indexed by i differing in characteristic w_i, now referring to wealth. Any agent 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 direct control D the politician grants state loans or subsidies to the citizens of his choice while under regulation R the politician sets the level of investor protection $1 - \delta \in [0,1]$, which parametrises the ability of firms to credibly commit to repay a loan of size L.[9] If investor protection is set at $1 - \delta$, the maximum enforceable repayment is $(1 - \delta) L$. As entry requires an investment of one, only citizens with wealth $w_i \geq \delta$ can become entrepreneur. As with licensing the choice of δ translates into a unique level of entry n. 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.

In general, the politician chooses the level of entry under both D and R, in the first case by directly choosing the set of entrants, in the second by setting rule δ. The crucial difference is that the politician can freely choose the identity of entrants under D, while under R the set of entrants for a given δ depends on individual characteristic w_i.[10] In either case the endogenous share of entrepreneurs is n, while the remaining $1 - n$ citizens only consume their disposable income ω.

[8] Here, the potential entrant is assumed to be able to raise funds for profitable investments.

[9] 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.

[10] The reduction of rules to an observable one-dimensional characteristic is a simplification. In practice citizens' unobservable characteristics may matter for their ability to satisfy the rule, or rules may simply be multi-facetted.

3.2 Timeline

At $t = 0$ the politician chooses direct control D or regulation R.

At $t = 1$ lobbyists[11] sequentially form coalitions of citizens, until there are no further gains from forming a additional group. Each citizen is represented by at most one lobbyist.

At $t = 2$ each lobbyist (proposer) make an irreversible offer to the politician (responder) to set entry at equilibrium levels n_D or $n_R(\delta_R)$ in exchange for political contributions of respectively $k_D(n_D)$ or $k_R(n_R)$. The politician chooses the offer that maximises his utility, or simply implements the social optimum by allowing free entry $m \leq \frac{1}{2}$. Citizens receiving finance set up a firm and produce one unit of final good. Under D lobbyists seek to illegally bribe the politician in exchange for entry of their coalition's members and under R lobbyists legally lobby for a favourable set of rules.

At $t = 3$ the market for the final good is open and its price $p(n)$ is determined. Consumers buy the final goods and political contributions are paid.

3.3 Citizens

Citizens consume both numeraire and final goods, and have utility from consumption

$$E[U_i] = x_i + ac_i - \frac{1}{2}c_i^2 \tag{1}$$

where x_i and c_i are respectively the consumption of a single numeraire and a single final good.[12] Here a is a measure of the strength of demand. We assume that $a > 1$ such that entry always has a positive net present value. Individual income equals a constant endowment ω plus any firm profits $\pi_e(n)$, which depend on entry n.[13] The aggregate amount spent on the numeraire good is thus $x_i = \omega + n\pi_e(n) - c_i p(n)$, where $p(n)$ denotes the price of the final

[11] Note that we use the term 'lobbyist' both under D and R.

[12] 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.

[13] The individual income ω can not be used to start a firm, for example because it is received after firm creation.

good. We assume that disposable income is high enough to pay for the desired consumption of the final goods, which requires $\omega \geq \frac{1}{4}a^2$.

Social welfare equals the total utility of consumption, defined as

$$s(n) = \sum^{i} U_i + k(n) \tag{2}$$

where $k(n)$ are the contributions paid to the politician by entrepreneurs.[14]

If a citizen i becomes an entrepreneur e, she can sell one unit of output on the final goods market and makes profits of

$$\pi_e(n_w) = \begin{cases} p(n_w) - 1 - \frac{k(n)}{n_w} \text{ if } e \in n_w \\ \\ 0 \text{ if } e \notin n_w \end{cases} \tag{3}$$

where $\frac{k(n)}{n_w}$ are the political contributions paid per entrepreneur in a winning coalition n_w.

We define m as the entry level for which $\pi_e(m) = 0$. As firms are created as long as they have positive net value, under $a > 1$, firms are profitable for any amount of entry $n < m$.

3.4 Lobbyists

Under both D and R, each lobbyist j forms a coalition of citizens q_j and offers the politician contributions $k(n_j)$ in return for entry n_j by the coalition's members.[15] The lobbyists 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

$$\Pi_{q_j} = \begin{cases} q_j \pi_e(n_j) & \text{if the offer by group } j \text{ is accepted} \\ \\ 0 \text{ otherwise} \end{cases} \tag{4}$$

We assume that each lobbyist j can commit to paying $k(n_j)$ after the politician has delivered the agreed upon policy. In addition we abstract from coordi-

[14] This social welfare function is free of distributional concerns and simply sums the utility of consumption of all agents, including the politician.

[15] We refer to coalition representatives as lobbyists whether they lobby or bribe the politician.

nation problems by assuming that the lobbyist can force each coalition member to pay an equal share of the contributions.

3.5 The polician

The politician's utility is a weighted average of welfare (with weight β) 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 R, the politician maximises

$$U_p(n) = \beta s(n) + (1-\beta) k(n) \tag{5}$$

In the case of direct control D, 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 ϕ 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. In conclusion, let $\beta\phi$ be the chance that the corrupt politician is exposed and sanctioned, in which case its payoff is zero. So under D the politician maximises[16]

$$U_p(n) = (1-\beta\phi)\left[\beta s(n) + (1-\beta) k(n)\right] \tag{6}$$

Our foundation for the reduced form legal costs $\beta\phi$ is as follows. Accountability incorporates citizens' ability to both gather objective information about policies and sanction politicians taking welfare-reducing decisions. Legality ϕ is a measure of judicial independence and competence. Higher accountability β

[16] Losses due to incurred legal punishment are not included in the definition of social welfare.

increases the likelihood that bribes are exposed in the first place while higher legality ϕ increases 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 and at least partially independent institution.

A summary of direct control and regulation is given below.
Overview 1

Governance structure	Political rents	Entry
Direct control (D)	Illegal bribing	Choosing individuals
Regulation (R)	Lobbying	Setting a general rule

3.6 Group formation and offers

Under both mechanisms D and R, lobbyists $j \in \{1, 2, ..., J\}$ enter sequentially. Each lobbyist j forms a different group (or coalition) containing a subset n_j of potential entrepreneurs, subject to $\pi_e \geq 0$. New lobbyists 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 $Q = (q_1, q_2, ..., q_J)$. Our model allows for competing interest groups whereas Grossman and Helpman (1994), Mitra (1999) and Perotti and Volpin (2007) have only a single lobbyist representing entrepreneurs in a given industry.

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

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

$$\Pi_j \geq 0 \forall j \tag{7}$$

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

$$\max_{q_j} \Pi_j | q_l \forall l \geq j \tag{8}$$

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

$$\max_{n_j, k_j} \Pi_j | n_l, k_l \forall l \neq j \tag{9}$$

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

$$U_p(n_j) \geq U_p(m) \tag{10}$$

and incentive compatible (better than the offer of any other group)[17]

$$U_p(n_j) > U_p(n_l) \, \forall l \neq j \tag{11}$$

The equilibrium choice of entry and political contributions (n_D, k_D) or (n_R, k_R) for D and R respectively satisfies (10) and (11) given Q, which satisfies (7) and (8).

4 Solving the model

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.

4.1 Product market equilibrium

From (1) and (2) it follows that social welfare is

$$s(n) = \omega + n(m - n) + \frac{1}{2}n^2 \tag{12}$$

and is maximised by allowing full entry $n = m$. Higher production leads to higher per citizen consumption at a lower unit price, an effect which outweights lower firm profits. Entrepreneurs' income is

$$n(m - n) \tag{13}$$

which is maximised by limiting entry at $n = \frac{1}{2}m$. Politicians thus have to trade off higher social welfare and potentially higher private benefits.

[17] 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.

4.2 Direct control D

Under direct control, lobbyists 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 direct control:*

(a) Lobbyists form groups equal size and 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', lobbyists 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 $n_D = n_j \rightarrow \pi_{e \in q_h} = 0$. As a result, lobbyist h is willing to spend any potential profits on bribes to convince the politician. The reverse holds for lobbyist j if $n_D = q_h$.

Thus, any group $k = j, h$ tries to outbid the other by maximising (6) subject to (7) by pledging all future profits as contributions to the politician.

We show in appendix A that

(i) the level of entry that maximises the politician's utility is $n = \frac{m}{2-\beta}$.

(ii) lobbyists choose to offer $(n_j, k_j) : n_j = \frac{m}{2-\beta} \forall j \in J$.

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

$$n_D = n_j = \frac{m}{2-\beta} \tag{14}$$

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

The utility from opportunism is $O_D = U_D - \beta s(m)$ and measures how much utility the politician derives from being bribed or lobbied to serve special interests instead of implementing the social optimum.[18] We show in appendix A that $\frac{\partial O_D}{\partial \beta} \leq 0$ and $\frac{\partial O_D}{\partial \phi} \leq 0$. ■

[18] Utility $O_p$constitutes an affine transformation of U_p in n.

Under direct control 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. 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 β, the higher entry n_D (closer to the social optimum $n_D = m$). The utility from opportunism $O_D = U_D - \beta s(m)$, which is decreasing in both β and ϕ.

4.3 Regulation R

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

Proposition 2 *Under regulation*

(a) Each entering lobbyist 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 lobbyist always wins by forming a coalition of size n_R 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 it can not block entry for q_1).

From (11), the strong lobby needs to offer

$$k_1 \geq k_2 + \frac{\beta}{1-\beta}\left[s(n_2) - s(n_1)\right] \tag{15}$$

to outbid the counterlobby.

If equilibrium outcome $n_P = n_1 \vee n_P = m$, 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 (15), $n_2 = \frac{m+n_1(1-\beta)}{2-\beta}$. Then, $\max_{n_1} \Pi_{q_1}$ as in (4) subject to (15) yields entry of

$$n_1 = n_R = \frac{1 + (2-\beta)(1-\beta)}{1 + 2(2-\beta)(1-\beta)} m \tag{16}$$

To show that this is the equilibrium we prove in the appendix B that:

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

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

By beating the counterlobby the IR-constraint in (10) and the IC-constraint in (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:

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

which is necessary for the IR-constraint in (9).

(iii) the IR-constraint in (7) is satisfied:

$$[\pi_e(n_R = n_1)] \geq 0$$

(iv) the utility from opportunism $O_R = U_R - \beta s(m)$ is nonnegative, conform (10) and $\frac{\partial O_P}{\partial \beta} < 0$. ■

Under regulation the strongest citizens (highest w_i) join forces in the 'strong lobby', seeking the highest possible δ to block entry by their weaker counterparts to protect their profits. The strong lobby's members can enter under the rule δ requested by any competing coalition (strong citizens can enter while excluding weak ones, while the reverse is impossible). The first lobbyist 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.[19]

[19] 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.

As under D, higher accountability β aligns the politician's preferences more with social welfare such that entry n_R increases in β. The politician's utility from opportunism O_R decreases in β.

4.4 Comparing direct control and regulation

This section compares entry n and the politician's utility U_p under the two bank governance systems D and R.

For $\beta \in [0, 1)$ we find that entry, or the size of the winning group, is lower under direct control D than under regulation R. As a result of lower entry, firms' total revenues are higher under D. In principle the politician prefers D to R, because larger discretion in choosing entrants under D allows extraction of larger political contribtuions $k(n)$. However, higher public accountability β and/or legality ϕ increases legal costs, and beyond some threshold induces a shift to regulation. Dashed lines refer to D and solid lines refer to R. Bold line segments are part of the equilibrium.

4.4.1 Politician's utility

Ex ante, the politician chooses the governance system that results in the highest excess utility $O_p = U_p - \beta s(m)$.[20]

Proposition 3 *The political rents appropriated by the politician are higher under D than under R for $\beta < 1$.*

Proof. For $\beta < 1$: $k(n_D) = n_D(m - n_D) > n_R(m - n_R) > k(n_R)$. The first inequality follows from $\frac{1}{2}m < n_D < n_R < m \Leftrightarrow \beta(2 - \beta) < 1$ for $\beta \in [0, 1)$. The second inequality readily follows from part (ii) of Appendix B. ■

Proposition 4 *Regulation becomes more likely the higher public accountability β and legality ϕ.*

[20] Again, O_p is an affine transformation of U_p because $\beta s(m)$ is independent of n.

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

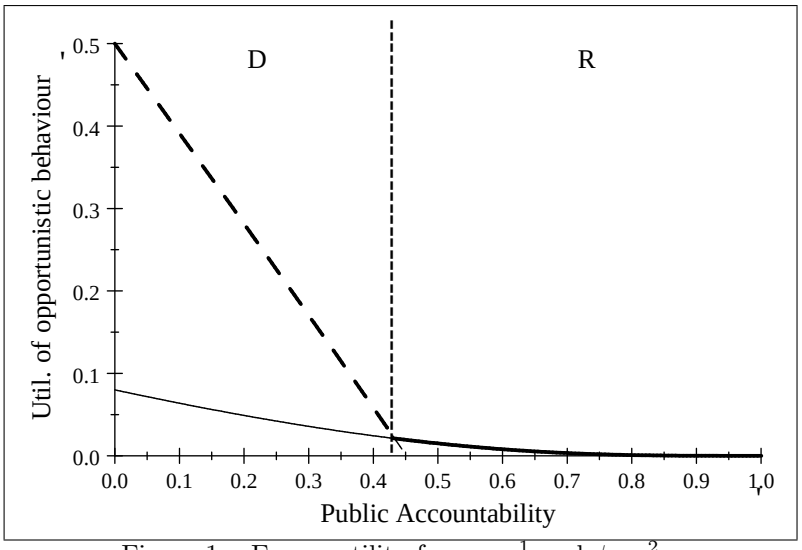

Figure 1a: Excess utility for $m = \frac{1}{2}$ and $\phi = \frac{2}{3}$

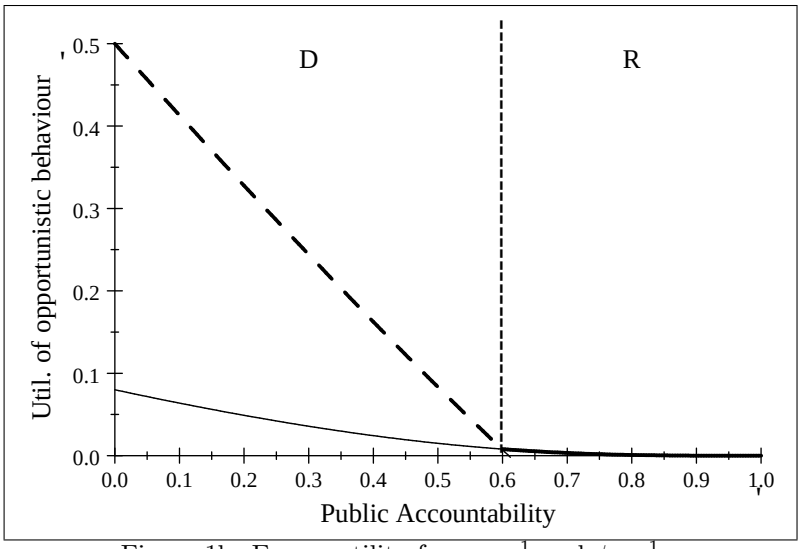

Figure 1b: Excess utility for $m = \frac{1}{2}$ and $\phi = \frac{1}{4}$

As shown in Figures 1a and 1b, the politician prefers direct control for low public accountability β and legality ϕ. Greater β and ϕ raise legal costs until a threshold after which politicians prefer to be legally lobbied by choosing regulation R.

4.4.2 Entry

Proposition 5 *Entry is lower under direct control than under regulation for* $\beta \in [0, 1)$.

Proof. $n_D = \frac{m}{2-\beta} \leq \frac{1+(2-\beta)(1-\beta)}{1+2(2-\beta)(1-\beta)} = n_R \Leftrightarrow \beta \leq 1$, which holds. ■

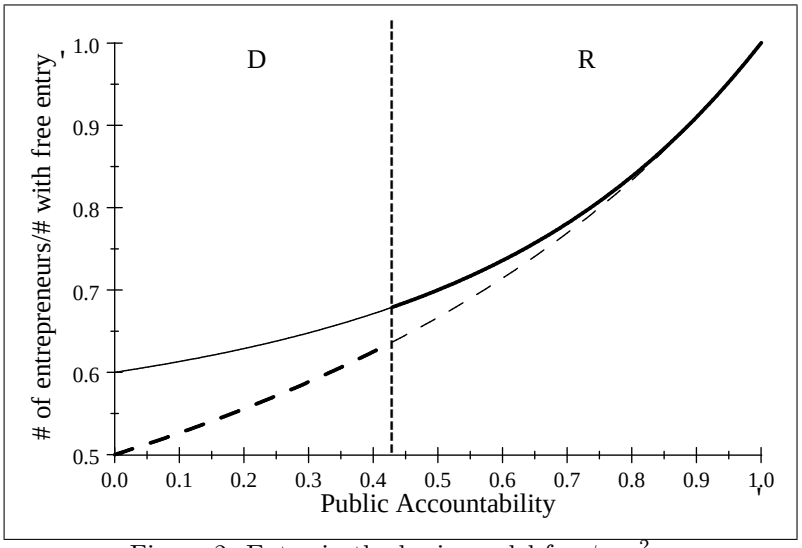

Figure 2: Entry in the basic model for $\phi = \frac{2}{3}$

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

5 Empirical illustration

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 are determined by a third variable.

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 (as share of GDP per capita) made* to obtain a legal status for a start-up. Two measures proxy for political accountability β 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, *contraints on executive power*, measures a combination of political accountability β and legality ϕ, which we use as proxy for the costs of bribery $\beta\phi$.We control for *legal origin* or *GDP per capita*.

We use the following instruments: (i) *settler mortality*, (ii) *latitude of the country's capital city,* (iii) *ethnic, linguistic and religious fractionalisation of the population* and (iv) *UN-diplomats' parking violations.* These instrumental variables have been shown to affect political institutions (Acemoglu, Johnson and Robinson, 2001; Alesina, Devleeschauwer, 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. Djankov, La Porta, Lopez-de-Silanes and Shleifer (2002) mention the possibility that entry barriers and political institutions are jointly determined by another variables, such as the identity of a colonising country. To try to rule out this possibility we

use instruments that are at least somewhat independent of the European power that coloniseda given country. *Settler mortality* and *latitude of the country's capital city* proxy for the external conditions such as disease faced by any European settler. These conditions greatly influenced whether European powers set up 'Neo-Europes' or 'extractive states' (Acemoglu, Johnson and Robinson, 2001).[21] *Ethnic, linguistic and religious fractionalisation* measure potential internal conflict and have influenced political institutions mainly after independence, no matter the colonising power. *UN-diploats' parking violations* proxy for a country's cultural perspective on (ab)use of power. Admittedly all colonisers did bring an additional ethnicity, language, religion and thus culture to their colonies. The degree to which this happened greatly depends on the number of Europeans settling in a colony, which we control for via *settler mortality* and *latitude of the country's capital city.* So, we address reverse causality and try to reduce the worry for a potential omitted variable.

Table 2 contains descriptive statistics for all variables. Because we lack data for mainly settler mortality for some countries 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 Socialist legal origin, which is smaller in the small sample (significant at 8.8%). Moreover, table 2 shows that there is ample variation in the sample along all dimensions.

Tables 3 and 4 show the results from OLS-regressions controlling for respectively GDP per capita and legal origin, 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 all types of entry barriers and all our variables for political accountability and costs of bribery. Only when investigating the *official cost of opening a business as share of GDP per capita* and controlling for *GDP per capita*, significance is weak. A reason could be that changes in *GDP per capita,* which we control for,

[21] For non-colonised countries we set settler mortality to zero. The results remain the same if we set it to 15, based on mortality of British troops in Britain (Acemoglu, Johnson and Robinson, 2001).

directly affect the dependent variable. Although not reported, a higher GDP per capita is correlated with lower entry barriers. Countries with English or Scandinavian legal origin have relatively low barriers (cost and time), while those with Socialistic legal origin only have relatively low official costs of opening a business.

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 lower entry barriers. Using the Durbin-Wu-Hausman test of endogeneity reveals that the IV-regressions are warrented in the large majority of specifications.

In summary, our empirical illustration shows that higher political accountabilty 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 as share of GDP there is only significance when GDP per capita is not included as control. This is not so surprising as changes in GDP per capita directly affect the dependent variable.

6 Conclusion

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 direct control 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 lobbies containing citizens with 'strong' characteristics, reducing competition among interest groups relative to the case of direct political control. In equilibrium, the politician chooses direct control with 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 Perotti and Vorage (2009) we use a similar model to explain bank control, the distribution of bank finance and the stability of the banking sector.

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Appendices

A. Equilibrium under direct control

(i) Maximising the politician's utility

Maximising U_p from (6) given (7) over n yields:

$$\max_n U_p \text{ s.t. } \pi_e \geq 0 \tag{17}$$

resulting in

$$n_D = \frac{m}{2-\beta} \tag{18}$$

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

(ii) the utility from opportunism O_S is nonnegative.

The political rents from opportunism are

$$\begin{aligned} O_D &= (1-\beta\phi)\left[\beta s(n) + (1-\beta)k(n)\right] \\ &= \begin{cases} \left(\frac{(1-\beta\phi)}{(2-\beta)} - \beta\right)\frac{1}{2}m^2 \text{ if } \beta \leq \beta^* \\ 0 \text{ if } \beta \geq \beta^* \end{cases} \geq 0 \end{aligned} \tag{19}$$

with $\beta^* = 1 + \frac{1}{2}\left[\phi - \sqrt{\phi(4+\phi)}\right]$. Taking derivatives yields $\frac{\partial O_D}{\partial \beta} < 0$ for $\beta \leq \beta^*$, $\frac{\partial O_D}{\partial \beta} = 0$ for $\beta \geq \beta^*$ and $\frac{\partial O_S}{\partial \phi} < 0$.

B. Equilibrium under regulation

(i) the counterlobby is the biggest threat for the strong lobby

For the politician, $U_p(n_2) > U_p(m)$ if

$$\beta s(n_2) + (1-\beta)k_2 \geq \beta s(m) \tag{20}$$

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

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

$$U_p(n_j) = \beta s(n_j) + (1-\beta)n_j(m-n_j) \tag{21}$$

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. lobbyists $j > 2$ never win.

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

We show that if the counterlobby would allow free-riding by the strong lobby, the strong lobby's profits are lower than by outbidding the counterlobby. Although the counterlobby is not even always willing to let the strong lobby free-ride, this situation represents the best situation the strong lobby could ever achieve by free-riding.

We will start with the third lobby, then treat the counterlobby and finally reach the strong lobby.

The weak 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:

maximise

$$\max_{n_3} k\,(n_2) = (n_3 - n_2)\,(m - n_3) + \frac{\beta}{1-\beta}\,(s\,(n_3) - s\,(n_2)) \tag{22}$$

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

Then, the counterlobby is formed by

$$\max_{n_2} (n_2 - n_1)\,(m - n_2) - k\,(n_2|n_3) \tag{23}$$

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

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

$$\max_{n_1} n_1\,(m - n_2) \tag{24}$$

which gives $n_1 = \frac{1}{2}m \Rightarrow n_2 = \frac{1}{2}\frac{2+3(1-\beta)(2-\beta)}{1+2(1-\beta)(2-\beta)}m \wedge n_3 = \frac{1}{2}\frac{2+(1-\beta)(7-3\beta)}{1+2(1-\beta)(2-\beta)}m$ such that $n_1 < n_2 \leq n_3 \leq m$.

When the counterlobby is willing to let the strong lobby free-ride, the strong lobby has profits of $n_1\,(m - n_2) = \frac{1}{4}\frac{(1-\beta)(2-\beta)}{1+2(1-\beta)(2-\beta)}m^2$.

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

(iii) the individual rationality constraint of the members of both lobbies are satisfied

From point (ii) and knowing that $[\pi_{e\notin Q_1}|n_R = n_1] = 0$ we conclude that $\pi_e(n_R = n_1) \geq 0$.

(iv) the utility from opportunism O_R is nonnegative, conform (10).

The utility from opportunism is

$$\begin{aligned} O_R &= \beta s(n_P) + (1-\beta) k_P - \beta s(m) \\ &= \frac{m^2}{2}\frac{(1-\beta)^4(2-\beta)}{[1+2(1-\beta)(2-\beta)]^2} \end{aligned} \tag{25}$$

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

Table 1. Variable Description

	Variable	Source	Description
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. Explanatory Variables			
4	Executive de facto independence	Jaggers 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 (www.databanks.sitehosting.net/www/main.htm)	Index of the effectiveness of the legislature. Ascending scale from 1 to 4 (1 5 no legislature; 2 5 largely ineffective; 3 5 partly effective; 4 5 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			
8	GDP per capita	World Bank	Gross domestic product per capita in current U. S. dollars in 1999.
9	Legal Origin	La Porta, Lopez-de-Silanes,Shleifer and Vishny (1999)	Division of countries in English, French, German, Scandinavian and Socialist legal origin.
Panel D. Instruments			
10	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).
11	Ethnic, Language and Religious Fractionalisation	Alesina, Devleeschauwer, Easterly, Kurlat and Wacziarg (2003)	The fractionalisation score in a country j is 1-Σsij where sij is the share of a given group i in country j, that is one minus the Herfindahl index.
12	Latitude	CIA Factbook	Latitude of a country's capital city.
13	Parking Violations	Fisman and Miguel (2008)	Parking violations per UN-diplomat from Nov. 1997 till Nov. 2002, when stricter rules were introduced.

Table 2. Descriptive Statistics

Sample: is 85 countries from Djankov, La Porta, Lopez-de-Silanes and Shleifer (2002)

We report summary statistics for both the largest sample in OLS-regressions and the smallest samplein 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 ore common in the large sample (significant at 8.8%).

		Sample size	Mean	Median	Standard Deviation	Minimum	Maximum
Panel A. Bank Control Indexes							
1	*Number of procedures*	84	10.55	10.00	4.35	2.00	21.00
		66	10.44	10.00	4.37	2.00	20.00
2	*Time*	84	47.77	42.00	30.77	2.00	152.00
		66	46.95	41.50	30.72	2.00	152.00
3	*Costs as percentage of GDP per capita*	83	0.48	0.20	0.80	0.00	4.63
		65	0.45	0.19	0.72	0.01	3.35
Panel B. Political Accountability							
4	*Executive de facto independence*	84	4.32	3.64	1.78	1.57	7.00
		76	4.41	3.67	1.77	1.63	7.00
5	*Effectiveness of legislature*	84	1.75	1.60	0.90	0.00	3.00
		76	1.78	1.67	3.67	0.00	3.00
6	*Constraints on executive power*	84	4.31	3.55	1.85	1.20	7.00
		65	49.77	46.90	26.42	4.80	95.30
Panel C. Controls							
5	*Per capita GDP in $, 2001*	84	8044.28	2760.00	10357.58	190.00	38530.00
		65	9271.08	3670.00	10819.56	240.00	38530.00
6	*English legal origin*	84	0.27	0.00	0.45	0.00	1.00
		65	0.29	0.00	0.46	0.00	1.00
7	*French legal origin*	84	0.38	0.00	0.49	0.00	1.00
		65	0.43	0.00	0.50	0.00	1.00
8	*Socialist legal origin*	84	0.23	0.00	0.42	0.00	1.00
		65	0.14	0.00	0.35	0.00	1.00
9	*Scandinavian legal origin*	84	0.05	0.00	0.21	0.00	1.00
		65	0.06	0.00	0.24	0.00	1.00
10	*German legal origin*	84	0.07	0.00	0.26	0.00	1.00
		65	0.08	0.00	0.27	0.00	1.00
Panel E. Instruments							
11	*Settler mortality*	77	117.63	0.00	409.40	0.00	2940.00
		65	92.11	8.55	267.85	0.00	2004.00
12	*Latitude*	77	0.36	0.39	0.20	0.01	0.71
		65	0.34	0.37	0.21	0.01	0.71
13	*Ethnic fractionalisation*	77	0.40	0.40	0.25	0.00	0.93
		65	0.39	0.39	0.26	0.00	0.93
14	*Language fractionalisation*	77	0.32	0.22	0.28	0.00	0.92
		65	0.31	0.20	0.28	0.00	0.92
15	*Religious fractionalisation*	77	0.42	0.41	0.23	0.00	0.86
		65	0.41	0.38	0.25	0.00	0.86
16	*Parking violations*	77	12.91	3.90	24.84	0.00	139.40
		65	13.50	3.50	26.68	0.00	139.60

TABLE 3

Political Accountability, Legality and Entry Regulation: Ordinary Least Squares

The dependent variables are the *Log of number of procedures*, the *Log of time to open a business* and the *Cost as share of GDP per capita*. We control for the *log GDP per capita* in (1) and (2) and for *GDP per capita* in (3).

		Log of number of procedures	Log of time to open a business	Cost as share of GDP per capita
Political accountability and/or legality		(1)	(2)	(3)
Executive de facto independence	Coefficient	-0.125***	-0.191***	-0.078*
	P-Value	(0.000)	(0.002)	(0.064)
	R-squared	0.318	0.321	0.112
	Observations	84	84	83
Effectiveness of legislature	Coefficient	-0.330***	-0.438***	-0.294**
	P-Value	(0.000)	(0.002)	(0.031)
	R-squared	0.342	0.333	0.1876
	Observations	73	73	72
Constraints on executive power	Coefficient	-0.105***	-0.164***	-0.045
	P-Value	(0.002)	(0.003)	(0.330)
	R-squared	0.297	0.309	0.1035
	Observations	84	84	83

TABLE 4

Political Accountability, Legality and Entry Regulation: Ordinary Least Squares

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

		Log of number of procedures	Log of time to open a business	Cost as share of GDP per capita
Political accountability and/or legality		(1)	(2)	(3)
Executive de facto independence	Coefficient	-0.106***	-0.192***	-0.156***
	P-Value	(0.000)	(0.001)	(0.007)
	R-squared	0.554	0.441	0.154
	Observations	84	84	83
Effectiveness of legislature	Coefficient	-0.267***	-0.453***	-0.385***
	P-Value	(0.000)	(0.000)	(0.005)
	R-squared	0.604	0.477	0.230
	Observations	73	73	72
Constraints on executive power	Coefficient	-0.093***	-0.173***	-0.120**
	P-Value	(0.001)	(0.001)	(0.016)
	R-squared	0.541	0.433	0.125
	Observations	84	84	83

TABLE 5

Political Accountability, Legality and Entry Regulation: Instrumental Variables

The dependent variables are the *Log of number of procedures*, the *Log of time to open a business* and the *Cost as share of GDP per capita*. We control for the *log GDP per capita* in (1) and (2) and for *GDP per capita* in (3). The 'DWH P-value' gives the P-Value of the Durbin-Wu-Hausmann test of endogeneity of instrumented variables.

		Log of number of procedures	Log of time to open a business	Cost as share of GDP per capita
Political accountability and/or legality		(1)	(2)	(3)
Executive de facto independence	Coefficient	-0.455**	-0.714**	-0.609
	P-Value	(0.036)	(0.050)	(0.317)
	Sargan statistic	0.838	0.642	0.401
	F-stat 1st stage	10.03	10.03	10.81
	Observations	77	77	76
	DWH P-Value	0.019**	0.037**	0.250
Effectiveness of legislature	Coefficient	-0.908**	-1.353*	-1.144*
	P-Value	(0.027)	(0.054)	(0.082)
	Sargan statistic	0.738	0.469	0.489
	F-stat 1st stage	14.68	14.68	11.12
	Observations	66	66	65
	DWH P-Value	0.046**	0.082*	0.076*
Constraints on executive power	Coefficient	-0.362**	-0.598*	-0.364
	P-Value	(0.047)	(0.057)	(0.359)
	Sargan statistic	0.586	0.483	0.211
	F-stat 1st stage	9.21	9.21	9.40
	Observations	77	77	76
	DWH P-Value	0.047**	0.061*	0.354

TABLE 6

Political Accountability, Legality and Entry Regulation: Instrumental Variables

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

		Log of number of procedures	Log of time to open a business	Cost as share of GDP per capita
Political accountability and/or legality		(1)	(2)	(3)
Executive de facto independence	Coefficient	-0.218***	-0.378***	-0.361***
	P-Value	(0.000)	(0.000)	(0.002)
	Sargan statistic	0.904	0.533	0.549
	F-stat 1st stage	9.78	9.78	9.65
	Observations	77	77	76
	DWH P-Value	0.004***	0.004***	0.038**
Effectiveness of legislature	Coefficient	-0.367***	-0.647***	-0.573***
	P-Value	(0.000)	(0.000)	(0.001)
	Sargan statistic	0.831	0.490	0.152
	F-stat 1st stage	10.37	10.37	10.03
	Observations	66	66	65
	DWH P-Value	0.095*	0.034**	0.147
Constraints on executive power	Coefficient	-0.203***	-0.358***	-0.331***
	P-Value	(0.000)	(0.001)	(0.004)
	Sargan statistic	0.763	0.474	0.434
	F-stat 1st stage	8.32	8.32	8.09
	Observations	77	77	76
	DWH P-Value	0.047**	0.004***	0.025**