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Perotti, E.C.; Volpin, P.

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Enrico C Perotti, Universiteit van Amsterdam and CEPR
Paolo Volpin, London Business School (LBS) and CEPR

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Centre for Economic Policy Research
90–98 Goswell Rd, London EC1V 7RR, UK
Tel: (44 20) 7878 2900, Fax: (44 20) 7878 2999
Email: cepr@cepr.org, Website: www.cepr.org

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ABSTRACT

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We develop a model of endogenous lobby formation in which wealth inequality and political accountability undermine entry and financial development. Incumbents seek a low level of effective investor protection to prevent potential entrants from raising capital. They succeed because they can promise larger political contributions than the entrants due to the higher rents earned with less competition. Entry and investor protection improve when wealth distribution becomes less unequal, and the political system becomes more accountable. Consistent with these predictions, in a cross-section of 38 countries we find that greater accountability is associated with higher entry in sectors that are more dependent on external capital and have greater growth opportunities. Also, higher accountability and lower income inequality are associated with more effective legal enforcement, even after controlling for legal origin and per-capita income.

JEL Classification: G21, G28 and G32
Keywords: entrepreneurship, entry, financial development, growth, income inequality, investor protection and politics

Enrico C Perotti
Department of Econonics
Universiteit van Amsterdam
Roeterstraat 11
1018 WB Amsterdam
THE NETHERLANDS
Tel: (31 20) 525 4159
Fax: (31 20) 525 5285
Email: e.c.perotti@uva.nl

Paolo Volpin
Institute of Finance and Accounting
London Business School
Sussex Place
Regent's Park
London
NW1 4SA
Tel: (44 20) 7262 5050
Fax: (44 20) 7724 3317
Email: pvolpin@london.edu

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1 Introduction

Entry is an important form of economic renewal and is associated with growth (e.g. Hause and Du Rietz, 1984; Johnson, McMillan and Woodruff, 2003). Yet recent evidence has highlighted the existence of high barriers to entry facing new entrepreneurs, especially in developing countries. Djankov, La Porta, Lopez-de-Silanes, and Shleifer (2002) show that countries with higher entry barriers tend to have higher corruption and larger unofficial economies.[1] Klapper, Laeven, and Rajan (2003) show that onerous barriers appear to reduce growth and entry in naturally high entry sectors. Both studies offer evidence against the notion that such barriers serve efficiency purposes. Financial underdevelopment appears to be a particularly damaging barrier for the process of new firm creation (e.g. Cabral and Mata, 2003), and may undermine growth (Levine, 1997; Black and Strahan, 2002; Rajan and Zingales, 1998). These findings raise the question whether some agents benefit from hindering entry, and which institutions support it.

We model the lobbying conflict on entry barriers between more established and emerging classes (Rajan and Zingales, 2003a).[2] We endogenize the stage of lobby formation in a framework where the amount of promised contributions (or bribes) depends on the rents earned by restricting entry. Our main prediction is a direct link between measures of political accountability (such as constraints on the executive), formal and informal barriers to entry, and actual entry. We are able to provide supporting evidence across a broad sample of countries.

The basic political conflict is simply described. Since wealthier entrepreneurs do not need much external finance for investment, their lobby will seek weaker investor protection than less wealthy entrepreneurs. Unlike Grossman and Helpman (1994), we assume a sequential model of lobbies, which allows to endogenize lobby agendas

[1] Djankov et al (2002) discuss two interpretations, the capture of regulation by industry insiders (Stigler, 1971) and the tollbooth view that barriers are created by politicians to collect bribes (Shleifer and Vishny, 1998). Our approach is consistent with both views.

[2] Lobbying allows interest groups to exert disproportionate influence on legislators and public officials when affected agents are too dispersed to become active (Olson, 1965).

and generate a unique equilibrium. The immediate result is that the first lobby to be formed organizes a coalition of rich entrepreneurs, whose agenda (the combination of entry rate and contributions) will be set up so as to ensure a victory over competing lobbies. The elite lobby needs to offer higher contributions than the other lobbies, since their preferred legislation entails lower welfare, but can capture higher rents.

Our first result is that this elite lobby is always able to win, but not because it has more cash in advance (in our model, bribes are paid ex post, contingent on a favorable outcome). Rather, the reason is that their preferred entry policy is more restrictive, and thus generates higher rents than any competing lobby. Since lower entry reduces welfare, the elite lobby needs to offer higher contributions. The agenda chosen by the elite lobby, and thus its membership, needs to trade off a higher required contribution against a lower rate of entry.

The main result is that entry will be increasing in political accountability, which we define as politicians' sensitivity to voter preferences (a measure of constraints on the executive). Greater accountability increases the bribe required by the legislator to accept lower welfare, and thus induces the elite to seek higher entry in order to reduce the required payment. Thus, the elite should be larger in more democratic societies, or more precisely, entry should be higher in societies with stronger constraints on the executive.

Our second result is that inequality decreases minority protection, but does not reduce entry, after controlling for accountability.[3] The intuition is that only accountability enters directly in the objective function of the legislator, and thus affects the lobby agenda required to win.[4] An extension considers the case of multiple legislators, where the winning lobby must gain over a "supermajority" of legislators, in line with formal models in political science (Groseclose and Snyder, 1996). Here, the degree of accountability is proxied by the number of independent legislators. The

[3]Greater equality increases the level of investor protection because the elite needs to raise more capital to fund its own entry.

[4]Within our approach, inequality matters for entry if a poorer legislator cares more for contribution, or for the distribution of welfare, or under ex ante lobbying costs. It would presumably matter if accountability were endogenous, since accountability is lower in unequal societies.

results are equivalent to our basic model.

Next, we test our predictions across a large sample of developed and developing countries. Adopting the framework of Rajan and Zingales (1998), we show that entry is significantly higher in more accountable countries in industries that require more external capital. This is consistent with the argument that less self-sufficient sectors, where entry needs to rely on external funds, will be more vulnerable to resistance by established interests. We obtain similar results if we interact political accountability with opportunities for entry rather than external needs, using industry growth in the United States as an instrument (Fisman and Love, 2003). Entry is significantly higher in more accountable countries in sectors with greater opportunities for entry.

As complementary hypotheses, we control for legal origin and for financial development.[5] We find that the results on political accountability are unaffected by these control variables. Legal origin is not statistically significant in these regressions, while stock market development is marginally significant. Glaeser, La Porta, Lopez-de-Silanes, and Shleifer (2004) discuss concerns that the quality of political institutions may be endogenous. Accordingly, we use the age of the democracy as an instrument for political accountability, and are able to confirm our results.

Finally, we explore the channels through which political accountability affects entry. Djankov et al (2002) show evidence that explicit entry barriers are higher in more corrupt countries, and generally in countries with a less accountable political system. We add to this literature by focusing on informal barriers created by weak enforcement of contractual and property rights, since selective or corrupt enforcement of laws under lobbying undermine a level playing field for poorer entrepreneurs. We show that the quality of legal enforcement is a key determinant of entry, even when we control for explicit entry barriers and other measures of investor protection.

We next show that both accountability and inequality are highly correlated with contractual enforcement, even after we control for legal origin and per capita income. We interpret this as evidence that the distribution of political and economic power

[5]Financial development is endogenous to accountability and inequality in our approach, but not in some competing hypotheses.

does affect the reliability of laws and thus the ability to raise external funding. Remarkably, the result is robust to introducing per capita income, assuaging concerns raised in Glaeser et al. (2004).

To the extent that new entry is an important engine for economic renewal, and possibly long term growth, political institutions (i.e. mechanisms which constrain public abuse) appear to matter more than legal institutions (which constrain private abuse). These results echo the conclusions in Acemoglu and Johnson (2003), where political constraints on the executive have a major impact on growth, while measures of legal efficiency affect financial development but do not directly raise growth, suggesting that accountability has a first order effect on economic development. Our contribution is to show that entry is particularly vulnerable to poor political institutions.[6]

The structure of the paper is as follows. In Section 2 we introduce and derive the equilibrium conditional on a given level of investor protection. In Section 3, we solve for the political equilibrium and endogenize financial development, and examine a few extensions of the basic model. Section 4 contains the empirical analysis. Section 5 concludes.

1.1 Related literature

Legal origin - La Porta, Lopez-de-Silanes, Shleifer, and Vishny [henceforth LLSV] (1997) and (1998) - explains part of the current cross country variation in financial market development, and is related to entry barriers (Djankov et al, 2003). Since legal and financial barriers appear correlated, a natural question is whether they share some common institutional determinants.

Recent studies suggest that the extent of relative financial development across countries changes over time, perhaps reflecting legislative changes in response to political shifts (e.g., Rajan and Zingales, 2003a; Roe, 1994). The literature on political economy of finance (Pagano and Volpin, 2004; Perotti and von Thadden, 2004) en-

[6] Our time series is too short to tell whether financial development supports long term growth once we control for accountability. Acemoglu and Johnson (2003) suggests that it does not.

dogenizes legal and financial institutions as the outcome of political choices. This approach takes the distribution of initial endowment and the political institutions as exogenous determinants of the distribution of political power. Their historical determinants may arise from either legal origin (LLSV, 1998) or initial endowments and local conditions (e.g. Acemoglu, Johnson and Robinson, 2001). In an influential paper, Engerman and Sokoloff (2002) argue that colonies in America created around a sharp initial inequality, reflecting the nature of local endowment, grew less than more equal societies, independently of colonists' origin.

Most papers in this literature use the median voter approach to endogenize the reliability of property rights. Perotti and von Thadden (2004) show that an unequal society may prefer bank or family governance to free markets, and show how in many countries large redistributional shocks after the First World War led to major political reversals which undermined financial development. Berglof and Bolton (2003) and Gradstein (2003) show that income inequality may reduce growth by affecting the protection of property rights. Biais and Mariotti (2003) study how tough bankruptcy laws may be resisted by richer entrepreneurs as they increase wages.

A related body of literature suggests that the greater the wealth inequality, the stronger the incentive of the elite to maintain political control, and restrain the emergence of new producers (Rajan and Zingales, 2003b, and Acemoglu, 2003). The elite may choose distorted institutions, which limit growth, but preserve their control over major decisions. In Bourgignon and Verdier (2000), a rich elite restricts funding for education at a cost of lower growth, in order to limit political participation which leads to more redistribution. He, Morck and Yeung (2003) show that countries where the same companies maintain a dominant position over time have lower economic growth, worse protection of investor rights and less developed capital markets.

2 Setup of the model

We consider an economy inhabited by a population whose size is normalized to 1. There are two types of individuals in this economy: $m < 1/2$ entrepreneurs and $1-m$ consumers. The entrepreneurs have the human capital to set up a new firm and an

endowment of capital (apples) $\widetilde{w} < I$, where $\widetilde{w}$ is uniformly distributed on the support $[(I-\sigma)/2, (I+\sigma)/2]$. The parameter $\sigma \leqslant I$ is a measure of wealth inequality: an increase of σ results in a mean-preserving spread on the distribution of $\widetilde{w}$. Consumers have an endowment of capital $\widetilde{w}_c$ distributed according to a distribution function $G(w)$ with a mean equal to w_c. All individuals receive utility from consumption at $t = 4$ (the last period in the model).

There are two goods: apples (which is also the investment good and the numeraire) and apple pies (produced by entrepreneurs using apples as input). The utility of a representative individual i is:

$$U_i = k_i + u(c_i) = k_i + ac_i - 1/2\ c_i^2, \tag{1}$$

where k_i is the amount of apples, c_i is the number of apple pies consumed at $t = 4$, $a > 1$ is a constant.[7]

The capital needed to finance the project can be raised in two ways. (i) Entrepreneurs can invest their own wealth in their own company. Of course, this source of funds is bounded above by their wealth $\widetilde{w}$. (ii) They can raise funds on the capital market as external equity.[8] We denote α_{ik} as the stake held by agent i in firm k, and α_{jj} is the equity stake owned by the entrepreneur j in his own firm.

As an alternative investment opportunity, individuals can access a riskless technology that produces $(1+r)$ units of apples in $t = 4$ for each apple invested in $t = 0$. Competition in the public capital market ensures that the required rate of return on equity financing is r, which we normalize to zero.

2.1 Timeline

The sequence of events, depicted in Figure 1, is as follows:

[7] The specific functional form of (1) simplifies the analysis but is not required: the essence of the results would go through for any quasilinear utility function.

[8] Because there is no profit uncertainty, we do not distinguish between equity or other corporate liabilities. Modigliani and Perotti (2000) argue that bank debt may be the easier form of financing under poor protection of minority investors.

At $t = 0$, entrepreneurs may form interest groups to lobby politicians.

At $t = 1$, lobbying takes place on the choice of the degree of investor protection δ, and a political majority takes the decision. We postpone the description of the lobbying subgame to Section 3.

At $t = 2$, an individual entrepreneur can set up a firm with a fixed amount of apples, I. Firms last for one period and each produce an output of 1 apple pie.

At $t = 3$, the output of apple pies is produced. Before paying dividends to shareholders, the entrepreneur can keep some of the pies for himself (expropriating the other shareholders). This expropriation is limited by the degree of investor protection, which imposes a minimum fraction δ of the output to be paid as dividends.

At $t = 4$, the market for apple pies opens and the equilibrium price of apples pies p is determined. Individuals then choose their consumption bundle and consume. The budget constraint faced by a generic agent i is

$$k_i + pc_i \leq y_i \tag{2}$$

where y_i is the total income produced at $t = 3$. For the representative consumer c,

$$y_c = \left(w_c - \sum_k \alpha_{ck} P_k \right) + p \sum_k \alpha_{ck} d_k \tag{3}$$

where $\sum_k \alpha_{ck} P_k \leq w_c$ is total financial investment (P_k is the price of company k at $t = 2$), and d_k is the total dividends (in apples) paid by firm k. For the representative entrepreneur j with his own firm, there are two extra terms:

$$y_j = \left(w_j - \sum_k \alpha_{jk} P_k \right) + p \sum_k \alpha_{jk} d_k + [(1 - \alpha_{jj}) P_j - I] + p(1 - d_j) \tag{4}$$

where the third term is the capital raised on the market net of the investment in firm j, and the last term reflects his private control benefits.

We assume that the economy is closed and the maximum number of firms in this economy (m) is such that the net present value of setting up a firm equals zero. Specifically, in our setting this is equivalent to assuming $(a - m) = I$.

Finally, we assume that only entrepreneurs lobby politicians. This assumption can be justified on the basis that consumers are dispersed and cannot overcome the

free-riding problem.[9]

2.2 Market equilibrium

We establish the subgame perfect equilibrium of the model by backward induction.

At $t = 4$, each agent i maximizes the utility function (1) subject to the budget constraint (2). From the first order conditions (which are necessary and sufficient), we obtain that for all i, $c_i = a - p \equiv c$, that is, all individuals choose to consume the same amount of apple pies: $a - p$. The consumption of apples depends instead on the individual income: $k_i = y_i - p(a - p)$.

The price of pies is obtained by the market clearing condition: with n active firms, the supply of pies is n, while the demand of pies is $(a - p)$. Hence,

Lemma 1 *In equilibrium, $p = a - n$, and $c = n$. The indirect utility of a generic agent i is $V_i = y_i + 1/2\ n^2$, where y_i is his income.*

Notice that the income of a representative consumer c is given in (3), while the income of the representative (active) entrepreneur j is given in (4).

At $t = 3$, active entrepreneurs choose to what extent they appropriate profits. Consider a representative firm j. Since dividends paid out to shareholders are d_j, the private benefits of control enjoyed by the insiders are $(1 - d_j)$. The entrepreneurs also receive the dividend on their equity stake $\alpha_{jj} d_j$. All entrepreneurs choose to pay out the very minimum dividend, $d_j = \delta$, because the marginal benefit of pie being diverted is 1 and the marginal cost is $\alpha_{jj} \leqslant 1$.

Proceeding backwards, at $t = 2$, entrepreneurs have limited ability to raise external capital because investors rationally expect them to pay out only a fraction δ of their output. Indeed, investors buying a fraction $1 - \alpha_{jj}$ of the firm expect to receive $(1 - \alpha_{jj})\delta$ pies, valued at a price $(a - n)$ each. The return from their investment is therefore $(a - n)(1 - \alpha_{jj})\delta$. Since they can alternatively invest their apples with

[9] Alternatively, there can be constraints on consumers' ability to borrow money to lobby politicians: for instance, one can borrow money only against future profits.

a rate of return 1, minority investors are willing to give the entrepreneur at most $(a-n)(1-\alpha_{jj})\delta$ apples. Since α_{jj} is bound between zero and one, the maximum amount of external capital that entrepreneurs can raise is $(a-n)\delta$. Hence,

Lemma 2 *Only entrepreneurs with a wealth $w \geqslant I-(a-n)\delta \equiv w(\delta)$ are able to set up a firm.*

Here we obtain a first useful result: $w(\delta)$ is strictly decreasing in the degree of investor protection δ. With better investor protection, entrepreneurs can raise more external capital and need less personal wealth to set up a firm. This is consistent with the theoretical models in Modigliani and Perotti (2001) and Shleifer and Wolfenzon (2002), and the empirical evidence by LLSV (1997, 1998).

The cutoff value $w(\delta)$ is also a function of the number of active firms n: the higher the number of active firms, the higher the required personal wealth because profits are lower. The number of active firms n is also a function of the degree of investor protection because only entrepreneurs with an endowment of capital larger or equal to $w(\delta)$ can set up a firm. Since entrepreneurs' wealth is uniformly distributed on the support $[(I-\sigma)/2,(I+\sigma)/2]$, $n = m\int_{w(\delta)}^{(I+\sigma)/2} 1/\sigma \; dw$.

Therefore, in equilibrium we have:

$$\begin{cases} w = I-(a-n)\delta \\ n = m((I+\sigma)/2-w)/\sigma. \end{cases} \tag{5}$$

By solving the system of equations (5) we obtain the following result:

Lemma 3 *The number of active firms is $n = m\frac{\delta a-(I-\sigma)/2}{m\delta+\sigma}$. Only entrepreneurs with personal wealth larger or equal to $w(n) = (I+\sigma)/2-n\sigma/m$ are able to set up a firm.*

This is an important result: the degree of investor protection δ has a direct impact on the degree of competition. Specifically, higher investor protection allows greater entry.

We can now show that higher investor protection is also reflected in higher social surplus (since consumers prefer more competition). To see this, consider the indirect

utility of representative consumer c. Since the capital market is competitive and there is no asymmetry of information, the value of a generic firm k must be such that the return from investing in the firm's equity, $p\delta/P_k$, equals the return from investing in the alternative investment, which was normalized to 1. Hence, the income of the representative consumer c (3) simplifies to $y_c = w_c$. His indirect utility then becomes:

$$V_c = w_c + 1/2\ n^2. \tag{6}$$

Since V_c is increasing in n and n is increasing in δ, then V_c is increasing in δ.

The income of a representative (active) entrepreneur j given in (4) simplifies instead to $y_j = w_j + (m - n)$, where the second term is the net present value of the project (we used here the assumption that $m = a - I$). Hence, his indirect utility is:

$$V_j = \begin{cases} w_j + 1/2\ n^2 + (m-n) & \text{if } w_j \geqslant w(n) \\ w_j + 1/2\ n^2 & \text{otherwise} \end{cases}. \tag{7}$$

It is easy to show that V_j is decreasing in investor protection as long as j is an active entrepreneur, that is, if $w_j \geqslant w(n)$.[10] This reflects the fact that the profit decreases with the number of active entrepreneurs. If instead j is not active ($w_j < w(n)$), V_j is increasing in δ because entrepreneur j is effectively a consumer.

The social surplus can then be written as a function of the number of active firms

$$S = (1 - m)w_c + m(I/2) + 1/2\ n^2 + n(m - n), \tag{8}$$

where w_C and $I/2$ are the average consumers' and entrepreneurs' wealth respectively, $1 - m$ is the number of consumers in the economy, m is the number of entrepreneurs, and n is the number of active entrepreneurs. The derivative of S with respect to n equals $(m - n)$, which is positive because $n < m$.

Since n is increasing in δ, we obtain that:

Lemma 4 *The social surplus is strictly increasing with investor protection. The socially optimal level of investor protection is* $\delta = 1$.

[10] The derivative of the utility of an active entrepreneur with respect to n equals $m - n$, which is negative since the total mass of entrepreneurs is less than the whole population.

In conclusion, the economy as a whole benefits from high investor protection. However, while this is true for consumers and (to some extent) poor entrepreneurs, rich entrepreneurs prefer low investor protection.

3 Political Decision on Investor Protection

As a benchmark, consider first the case of a government where politicians maximize the welfare of the median voter.[11] Since customers represent the majority of the population, the political choice will be high investor protection ($\delta = 1$). The reason is that the median voter is a consumer who stand to lose from low entry.

The political outcome differs from the median voter choice because politicians care not only about social surplus but also about contributions they receive from lobbyists. In this case, individuals will organize in lobbying to support their economic interests. In our setting, we assume that consumers are too dispersed to organize in pressure groups, while entrepreneurs can form lobbying groups to push for a specific degree of investor protection.

We assume that there are two professional lobbyists in the economy. As in Grossman and Helpman (1994), lobbying requires some methodology to commit credibly to a political contribution schedule, conditional on the policymakers' choice of investor protection. Moreover, the lobbyist needs to collect the funding for political contributions from all the members of the lobbying group, so he must solve a free-riding problem. We assume that the winning lobbyist is able to foreclose the capital markets to all entrepreneurs who benefit from their lobbying but fail to contribute to it.[12] Each lobbyist receives a fraction of the surplus generated by its activity and captured by the entrepreneurs supporting his lobby, and thus has an incentive to maximize their rents. Lobbyists move sequentially, so the first one has a Stackelberg advantage

[11] It is easy to show that the median voter theorem would hold in our setting because preferences are single peaked in the number of entrants n..

[12] Specifically, lobbyists with political influence may be able to induce politicians or regulators to a selective enforcement of the law.

of choosing the richer lobby. (It is easy to see that this strategy is optimal.)

Given that there is a monotonic relationship between δ and the number of active firms n, it is easier to think in terms of lobbyists and politicians choosing n.

3.1 Political equilibrium

The structure of the political subgame is as follows:

1) Nature chooses which lobbyist moves first. The first lobbyist sets up a lobbying group by choosing a target number of firms n_1 and collects from them a political contribution, contingent on a successful political choice of the associated level of investor protection δ. Specifically, the lobbyist commits to pay L_1 if the politician chooses δ such that $n = n_1$, and 0 otherwise.

2) The second lobbyist sets up his own lobbying group by choosing n_2.[13] He commits to pay L_2 if the politician chooses $n = n_2$, and 0 otherwise.

3) Entrepreneurs choose whether to join the first or the second lobbying group, or none of them.

4) Politicians choose between the two proposals so as to maximize their own objective function:[14]

$$\max_{i\in\{1,2\}} U^P = \max_{i\in\{1,2\}} (1-\beta)L_i + \beta S_i \tag{9}$$

where L_i is the political contribution of lobby i, $\beta \in [0,1]$ is a measure of the policymakers' benevolence (inclination towards the social surplus), and S_i is the social surplus associated with n_i given in (8).

We suppose politicians wish to be re-elected, and that β indicates to what extent their voting record over issues is important relative to their spending in political promotion. We take β to be a measure of actual accountability. As the political

[13] As a tie-breaking assumption, we assume that if the two lobbyist offer the same level of investor protection, the entrepreneurs prefer to join the first lobbyist rather than the second one.

[14] We examine the case in which the politician can choose outside the proposals of the two lobbies in the extensions.

system becomes more democratic politicians become more "accountable" to voters, and β increases.[15]

5) The entrepreneurs belonging to the winning lobby split equally to costs of the political contribution L_i.

In this setting the sugame-perfect equilibrium of the political game is the following:

Proposition 1: *The number of active entrepreneurs is*

$$n_1 = m\phi \equiv n^*. \tag{10}$$

where $\phi \equiv \frac{1+(2-\beta)(1-\beta)}{1+2(2-\beta)(1-\beta)} < 1$. *The corresponding level of investor protection is:*

$$\delta = \frac{[I - \sigma(1-\phi)]}{a(1-\phi) + \phi I} \equiv \delta^*. \tag{11}$$

Proof: See Appendix.

The intuition of the proof is simple. The equilibrium is found by backward induction. At stage 4, the politician chooses the number of active entrepreneurs proposed by the first lobby only if the political contribution paid by the first lobby (L_1) exceeds the political contribution of the second lobby (L_2) plus the difference in social surplus between the two levels of entry (ΔS) weighted by the measure of accountability β. Otherwise, the politician chooses the level of entry desired by the second lobby.

At stage 3, the richest entrepreneurs choose to join the first lobby. More precisely, all entrepreneurs that will be active with the low level of investor protection chosen by the first lobby - that is, all entrepreneurs with wealth $w_j \geqslant I(m-n_1)/m$ - will join the first lobby. The poorest entrepreneurs do not join any lobby because they would not be able to set up their firm even with the higher level of investor protection proposed

[15]It is also possible to interpret β as a measure of voter education, which allows them to verify the merit of the votes taken by their legislator ahead of considering voting again for him/her. If average education is higher in more equal countries, this would create a direct link between income inequality and political choices and in fact reinforce our result on the negative correlation between wealth inequality and minority protection, as in Bourgignon and Verdier (2000).

by the second lobby. These are the entrepreneurs with wealth $w_j < I(m - n_2)/m$. The remaining entrepreneurs will join the second lobby.

At stage 2, the second lobbyist chooses the desired level of investor protection to maximize the chances of winning. For this purpose he pays as political contribution the entire surplus enjoyed by the entrepreneurs who join the second lobby. The latter is given by the product of the size of the second lobby $(n_2 - n_1)$ and the profit enjoyed by each entrepreneur in the second lobby $(m - n_2)$. Hence, $L_2 = (n_2 - n_1)(m - n_2)$. To maximize the chances of winning, the second lobbyist chooses n_2 to maximize the costs for the first lobbyist to win: $(n_2 - n_1)(m - n_2)$ and is willing to pay the entire surplus as a political contribution:

$$\max_{n_2} L_2 + \beta \Delta S/(1 - \beta). \tag{12}$$

It is interesting to notice that the second lobbyist acts as a Stackelberg's follower, as his action n_2 maximizes the residual surplus after the choice of n_1 by the first lobbyist.

At stage 1, the first lobbyist acts as the Stackelberg's leader anticipating that he can win by paying a political contribution $L_1 = L_2 + \beta \Delta S/(1 - \beta)$. The first lobbyist then maximizes the surplus that he can generate, $n_1(m - n_1)$, net of the political contribution, L_1.

Proposition 1 state that the first lobby always wins and defines its optimal size n_1 and the corresponding level of investor protection. Lobbying competition never leads to the success of the middle class lobby, as the first lobbyist can always adjust its competition by co-opting more intermediate-wealth entrepreneurs. Thus, changes in parameters only affect the size (and thus the legislative preference) of the rich lobby, not whether the rich lobby wins or loses.

The results in Proposition 1 yield a few empirical predictions.

The level of entry n^* (the size of the rich lobby), and the level of minority protection δ^* both increase with ϕ. It is easy to see that ϕ is strictly increasing in our measure of accountability β. The intuition is that as β increases, it becomes costlier for the first lobbyist to choose a low level of investor protection, because the policy-maker requires a greater compensation for deviating from the median voter choice.

A greater political accountability induces the first lobby to allow more entry in order to reduce the necessary contribution to gain legislative support. The result is higher output. In this sense, political competition drives economic competition.[16]

Prediction 1: The level of entry increases with greater political accountability.

Second, notice that δ^* is increasing in ϕ and decreasing with the parameter of wealth inequality σ (while n^* is unaffected by it). The intuition is that as σ increases, there will be more rich entrepreneurs who can setup their firm for a given level of investor protection. Since the optimal number of active entrepreneurs stays constant, investor protection must decrease.

Prediction 2: The level of investor protection increases with greater accountability and decreases with more wealth inequality.

We will focus our empirical tests on these two predictions. A third prediction, harder to test, is that the size of the lobby and thus minority protection will increase in the profitability of production (formally, δ^* is decreasing in a and increasing in I). A rise in a can be interpreted as a demand shock , while a rise in I as a supply shock that increases the financial requirements for entry. As a increases, the optimal lobby size for the first lobbyist increases, just as monopoly output tends to increase in demand. The opposite effect is obtained by a higher I, which induces an improvement in minority protection to ensure that the marginal lobby member is still able to enter.

3.2 Extensions

We now analyze some extensions of the basic model.

First, in a democratic setting there is more than one policymaker, a political majority is required to determine legislation. We show that as in Groseclose and Snyder (1996), when legislators differ in their sensitivity to welfare, winning such a

[16] When we later introduce another measure of democracy, namely a greater dispersion of decision power among policymakers, we will show that we obtain a similar result.

legislative vote requires bribing a "supermajority" of legislators. The reason is that if the first lobby bribes only a strict majority, the second lobby could concentrate its entire contribution on the marginal lobbied legislator to switch support to its own proposal.

The main result is that as the number of policymakers grows it becomes more expensive to lobby for low investor protection. Hence, the level of investor protection is increasing in the number of policymakers, a measure of dispersion of political power in the legislation and a good proxy for democracy.

Second, we consider the case in which the politicians can choose a level of investor protection different from the proposals by the two lobbies. The results are unaffected by this extension. Third, we show that the model's predictions extend to the general model of lobbying proposed by Grossman and Helpman (1994).

3.2.1 Representative democracy

So far we have assumed that there is only one policymaker, or that policymakers are a compact group. This is more consistent with dictatorships than democracies. In this section, we remove this assumption. To do so, we follow the lobbying approach modelled in the seminal paper by Groseclose and Snyder (1996) and adapt it to our setup.

Policymakers are a fraction 2π of the population. To focus on the impact of the number of politicians we assume that the politicians' benevolence is fixed at $\beta = 1/2$. To simplify notation we assume that wealth inequality is fixed so that $\sigma = I$. The sequence of events is as in Section 3.1 except for two important changes. First, at stages 1 and 2, the lobbyists also choose how many policymakers to lobby. Second, at stage 4 the political decision is taken by majority rule. As a tie-breaking rule, we assume that politicians vote for the second lobby when indifferent.

Stages 3 and 4 are exactly as in Section 3.1. At stage 2, the second lobbyist has the maximum amount of resources L_2 given in (12) to lobby politicians. The minimum cost of winning is given by the total transfer necessary to make a majority of politicians, $\pi + \varepsilon$ (where ε is an arbitrarily small positive number), just slightly better

off when voting for high investor protection rather than for low investor protection. In this approach, the second lobby can count on the favor of all politicians that did not receive any political contribution by the first lobby. More in general, in favor of the second lobby are all politicians that have been offered political contributions such that the difference in contribution between the two lobbies is smaller than the change in their utility due to the change in social surplus, ΔS. It is thus rational for the second lobby to start lobbying first politicians who have received the lowest contribution from the first lobby and to proceed then towards those with higher contribution, stopping when reaching a measure equal to $\pi + \varepsilon$ of politicians.

This model allows us to restrict attention to contribution schedules that pay a fixed constant to all politicians who are lobbied and nothing to all others. Indeed, suppose one policymaker is offered less by the first lobby than the others. This politician will be an easier target for the opposing lobby. The first lobby is better off by reducing a little their contributions to other politicians to increase the contribution to this politician (Groseclose and Snyder, 1996). This will either increase the probability of winning or reduce the total lobbying costs.

Hence, the first lobby chooses the political contribution L_1 and the fraction of politicians to lobby. Specifically, it is useful to denote this fraction as $\pi(1+\rho)$: in this notation, $\rho \in [0,1]$ is the fraction of politicians lobbied above the 50 percent level that is needed to win a majority vote. This is what is termed a super-majority.

In this setting the political equilibrium is the following:

Proposition 2: *The number of active entrepreneurs is*

$$n_1 = m(1+2\xi^*)/(2+2\xi^*) \equiv n^{**}, \tag{13}$$

where ξ^* is an increasing function of the number of policymakers π. The level of investor protection chosen by the politician is:

$$\delta = \frac{I(1+2\xi^*)}{a+I(1+2\xi^*)} \equiv \delta^{**}. \tag{14}$$

Proof: See Appendix.

Since ξ^* is strictly increasing in the number of policymakers π, we can confirm Prediction 1: Investor protection increases with more democracy.

This result follows from the fact that the second lobby simply needs to win a simple majority of politicians, that is, $\pi+\varepsilon$ politicians, with ε small and positive. To do so, it needs to bribe a measure $\pi\rho+\varepsilon$ of politicians. Since the surplus that the second lobby stands to gain is L_2, the second lobbyist can pay each bribed politicians a maximum contribution of $L_2/(\pi\rho+\varepsilon)$.

Thus in order to defeat the second lobby, the first lobby needs to offer a contribution equal to $L_2/(\pi\rho+\varepsilon)+\Delta S$ to a number $\pi(1+\rho)$ of politicians. The total cost of doing so is

$$L_1 = \pi(1+\rho)[L_2/(\pi\rho+\varepsilon)+\Delta S] \tag{15}$$

The basic case analyzed in the previous section obtains if there is only one politician, that is, if $2\pi = 1$, $\rho = 1$, and $\varepsilon = 1/2$. In general, as in Groseclose and Snyder (1996), in equilibrium the lobbyist will lobby a supermajority of politicians, that is $\rho^* > 0$. This happens because by lobbying more than half of the politicians, the first lobbyist increases the cost of lobbying for the second lobbyist.

As before, the first lobbyist then maximizes the surplus that he can generate, $n_1(m-n_1)$, net of the political contribution, L_1. Proposition 2 states the results of that maximization and the corresponding level of investor protection.

3.2.2 Open agenda

So far, we have assumed that politicians are constrained to choose only between the levels of investor protection proposed by the two lobbyists. In this section we allow the policymaker to choose any level of investor protection. In this setting, it is easy to see the politician will compare the proposals of the two lobbies with the social optimum (since there are no contributions associated with other entry rates). To simplify notation we normalize wealth inequality, so that $\sigma = I$. Notice that the social optimum is m.

It is easy to show that the analysis of Section 3.1 changes only if politicians prefer

the social optimum to the second lobby's offer. This happens only if the political contribution from the second lobby is smaller than the reduction in social surplus coming from departing from the social optimum (when translated in monetary terms):

$$L_2 < (\beta/2)(m - n_2)^2/(1 - \beta). \tag{16}$$

As shown in the proof of Proposition 1, $L_2 = (m-n_2)(n_2-n_1)$ and $n_2 = [m+n_1(1-\beta)]/(2-\beta)$. Hence, the political contribution of the second lobby $L_2 = (m-n_1)^2(1-\beta)/(2-\beta)^2$ and the reduction in social surplus equals $(\beta/2)(m-n_1)^2(1-\beta)/(2-\beta)^2$. Therefore, the politicians prefer the social surplus option m only if $\beta > 2$ but $\beta \in [0,1]$ by assumptions. Hence, the policy maker always prefers the second lobby to the social optimum.

3.2.3 Relation with Grossman and Helpman (1994)

Our model of lobbying derives explicit lobby agendas in a sequential-move game, and produces a unique equilibrium. One concern may be that this assumption is too specific. In this section we show that our results extend to the general lobbying model proposed by Grossman and Helpman (1994).

Building on Bernheim and Whinston (1986), Grossman and Helpman model lobbying as a common agency problem and show that, if one selects only the truthful Nash-equilibria out of the multiplicity of equilibria, the policy maker chooses a policy p so that to maximize:

$$\sum_j W_j(p) + aW(p), \tag{17}$$

where $W_j(p)$ is the indirect utility of the lobbyists, $W(p)$ is the social surplus, and $a > 0$ measures how much politicians care about the social surplus. In other words, their key result is that policy makers put additional weight on the lobbysts' utility function.

To apply the Grossman and Helpman framework to our model, we need only a few steps. First, in our setting, the relative weight that politicians put on the social surplus - that is the parameter a in Grossman-Helpman - equals $\beta/(1-\beta)$. Second, the utility function of a generic entrepreneur j with wealth w_j is:

$$V_j(n) = w_j + \frac{1}{2}n^2 + p(n)(m-n), \tag{18}$$

where $p(n) = \begin{cases} 1 \text{ if } w_j \geqslant w(n) \\ 0 \text{ otherwise} \end{cases}$ and $w(n) = (I+\sigma)/2 - n\sigma/m$, as obtained in Lemma 3. Therefore, the sum of entrepreneurs' utility function is:

$$\sum_j W_j(p) = \sum_j V_j(n) = m(I/2) + mn^2/2 + n(m-n). \tag{19}$$

Furthermore, the social surplus is:

$$W(p) = S(n) = [(1-m)w_c + m(I/2)](1+r) + 1/2\ n^2 + n(m-n). \tag{20}$$

Finally,

To apply the result in Grossman and Helpman, we substitute in (17) the expression for the social surplus (20) and for the sum of entrepreneurs' utility (19). Hence, the policy maker chooses n to maximize:

$$(1-\beta)\sum_j V_j(n) + \beta S(n). \tag{21}$$

From the first order conditions of this problem,we obtain that:

$$n^* = m/[1 + (1-\beta)(1-m)]. \tag{22}$$

As in our Proposition 1, n^* is only a function of m and β. Specifically, n^* is strictly increasing in β. Hence, we conclude that our empiurical predictions are robust within a large class of lobbying models.

4 Empirical Evidence

Our model predicts that political accountability promotes entry via its impact on the quality of investor protection. To test our predictions, we adopt the approach developed by Rajan and Zingales (1998) [henceforth RZ], designed to assuage concerns that financial development may be endogenous to growth. RZ estimate the effect of

financial development on growth across industries and countries by controlling for industry and country fixed effects . We apply this approach to industry entry data rather than industry growth, to test whether accountability promots entry. Next, we explore explicitly our predictions on the channels through which accountability affects entry, focusing on informal barriers to entry.

4.1 Data

Table 1 describes the data. We collected entry data from the UNIDO database across a broad sample of industries and countries. Entry is the average annual growth rate in the number of establishment in the 1983-92 interval, for a total of 1146 observations from 38 countries and 33 industries.[17] For each country-industry pair, we also compute the industry's share of total number of firms to be used as a control variable in the regressions.

Our proxy for political accountability is the average democracy score over the 1964-83 interval, as produced by Polity IV. This index measures the general openness of political institutions and ranges between zero and ten, with a greater number indicating greater democracy. As a proxy for wealth inequality we use the average Gini coefficient of income inequality over the 1964-83 interval, obtained by the World Bank World Development Indicators. The index takes values between zero and 100, with a higher number indicating greater inequality. To provide an additional test for endogeniety, we instrument accountability by the age of democracy in each country, as reported by the Database of Political Institutions 2000.[18]

As alternative (complementary) explanations for entry, we introduce a legal origin dummy, which takes value 1 if the origin of the national commercial law code is from the English Common law tradition and 0 otherwise, and stock market development, which is the ratio of stock market capitalization and GDP in 1980 as reported by

[17] UNIDO data is available for the entire set of countries only in 1983, and is interrupted in 1992 because of a major sector reclassification. The industry classification is as in RZ.

[18] For countries that were not democracy in 1983, this variable takes value 0. For democracies more than 53 years old in 1983, the age reported in the dataset is 53 years.

RZ. We also control for per-capita income, which is the 1980 GNP per capita in US dollars, as reported by RZ.

We employ several variables to measure formal and informal entry barriers. Cost of entry is the direct cost associated with meeting government requirements for entry plus the monetized value of the entrepreneur's time (as a fraction of GDP per capita in 1999), as reported by Djankov, et al. (2002). Enforcement is the average of the five enforcement variables produced by LLSV (1998): efficiency of the judicial system, rule of law, corruption, risk of expropriation, and risk of contract repudiation. This index ranges between zero and ten, with a greater number indicating stronger legal enforcement. Antidirector rights is the index of shareholder rights produced by LLSV (1998).

We use two variables at industry level: external dependence and entry opportunity. External dependence is borrowed from RZ and measures the average external dependence of young US firms operating in each industry. As an alternative to this measure, we follow Fisman and Love (2003) and use a measure of the growth opportunities in the industry. What we label entry opportunity is the industry growth rate of value added in the United States over the 1983-92 interval.[19]

4.2 Actual Entry and Accountability

All our regressions on entry, following the approach in RZ, control for fixed-effects at country and industry level, to address concerns about endogeneity. Our country-level explanatory variables are therefore interacted with industry-level external dependance. In the model, the ability to enter depends on access to external capital, and therefore on the quality of effective investor protection. More generally, any form of political interference with private contracting (e.g. corruption) potentially creates an indirect entry barrier. The use of interactive terms allows to take advantage of cross sector variation, and is necessary because of the fixed effect structure, which does not allow to introduce distinct country-level variables.

[19] As in RZ, observations from the United States are excluded from the analysis.

In the first set of regressions, reported in Table 2, external dependence at the industry level is interacted with four variables at the country level: democracy score and income inequality, which are evaluated over a 20-year period leading up to 1983, the common law dummy, and stock market development.

Our main finding is that the interaction term with democracy score is positively correlated with entry and strongly statistically significant across all specifications, suggesting that political accountability indeed facilitates entry in industries that need more external capital. Consistent with our model, there is no significant relationship between income inequality and entry.

Surprisingly, common law countries do not generate more entry in sectors that need more external capital. Instead, countries with more developed stock markets exhibit higher entry in sectors with greater need of external capital.

One concern with the regression in Table 2 is that we control for external financial needs but not for entry opportunities across sectors (Fisman and Love, 2003). It may still be true that in less accountable countries there is adequate entry in high growth sectors. To test for this possibility, in Table 3 we interact our explanatory variables with a measure of growth opportunities in the sector, proxied by the industry growth rate of value added in the United States (computed from UNIDO data). Again, we find that the interaction term on accountability is positively correlated with entry and statistically significant across all specifications. This result complements the findings in Table 2: political accountability facilitates entry in industries with greater growth opportunities.

A second concern with the analysis in Table 2 is that the endogeneity of the democracy score may not be fully resolved by the fixed effects at country and industry level. Glaeser et al (2004) suggest that the quality of political institutions may be endogenous to economic growth, perhaps because accumulation of human capital improves the functioning of existing institutions. Therefore, in Table 4 we instrument accountability by the age of the democracy, and are able to confirm our results.[20] The

[20] Age of democracy seems a good instrument for accountability under this objection on the ground that lagged variables are less exposed to endogeneity than contenporaneous ones.

interaction term of external dependence and democracy score is positively correlated with entry and strongly statistically significant across all specifications.

These results do not identify the channels through which politics affects entry. Djankov et al (2002) show that explicit entry barriers are correlated with measures of political accountability.[21] We now turn to the analysis of informal mechanisms which may block entry.

4.3 Informal barriers to entry

The model predicts that investor protection should be the channel through which political accountability affects entry. Accordingly, we perform two tests: (i) we investigate whether legal enforcement - as a proxy for implicit barriers to entry - facilitates entry; and (ii) we examine whether accountability and inequality produce greater enforcement. Previous evidence had established that effective investor protection is highly correlated with legal origin (LLSV 1997, 1998); in particular, common law countries appear to have higher enforcement and less legal formalism.

In Table 5, we evaluate the importance of informal barriers to entry, as proxied by the quality of enforcement. We control for alternative direct and indirect barriers to entry, using as proxies stock market development, cost of entry, per-capita income, and antidirector rights. While in our models several of these variables are endogenous to the political decision, we introduce them here as independent explanatory variables, as they may depend on legal origin or other institutions which generally support entry. For all variables we follow the same methodology as in Section 4.2, interacting them with external dependence.

Our finding is that enforcement, cost of entry, and antidirector rights are significantly correlated with entry. There is more entry in industries that need more external capital in countries in countries with stronger enforcement, lower cost of entry and higher antidirector rights. These results suggest that reliable contractual enforcement is an important and independent channel to facilitate entry.

[21] Djankov et al. (2002) produced explicit measures of the regulatory barriers to entry, estimating the time and resources needed to set up a enterprise.

The final step in our empirical analysis is to show that political accountability and income inequality are significant determinants of informal barriers. In Table 6 we analyze the determinants of the quality of enforcement, our proxy for fair access, in an enlarged cross section of 48 countries.[22] The model predicts that accountability should be positively correlated with enforcement, while income inequality should be negatively correlated with enforcement. The results in the first three columns of Table 6 strongly confirm these predictions.

Next, we introduce two other broad hypotheses, legal origin and economic development, both separately and jointly. Our view is that the influence of legal origin and economic development is complementary rather than competing relative to political lobbying. As shown in columns (4) and (5), the results are robust to the introduction of both variables. We interpret this as evidence that the distribution of political and economic power does affect the reliability of laws, and thus the ability of new entrants to overcome entry barriers, such as (but not exclusively) to raise the necessary external funding. This appears to be true independently of the level of economic development and legal orientation.

The results appear also economically significant. An increase in democracy from zero to 5.6 (from the level in Indonesia to Philippines') is associated with about one-half-point increase in enforcement (out of ten). A decrease in wealth inequality by 10 points (from Brazil's to Turkey's) is associated with a one-quarter-point increase in enforcement quality. To control for endogeneity, in column (6) we use age of the democracy as an instrument for democracy score. The results are even stronger than in column (3), where we do not control for endogeneity.

5 Conclusion

In this paper we present a model in which established interests lobby politicians to maintain a low level of investor protection, in order to prevent potential entry. We

[22] These are all the countries in LLSV (1998) with the exception of Hong Kong for which we do not have a measure of political accountability. The results also hold (but are not reported) for the subsample of 36 countries that are included in the regressions on entry in Table 5.

derive endogenously the size of the winning lobby and the level of investor protection emerging from the political decision. We show that stronger economic agents have a comparative advantage in lobbying on financial development, since their preferred policy yields greater rents. Our key result is that entry improves when the country becomes more democratic.

Lobbying is likely to create various sorts of formal and informal entry barriers. Undermining financial development is a natural channel for blocking entry. Informal barriers, created by a selective enforcement of laws protecting contracting or property rights, are probably more dangerous than explicit barriers, as they escape public scrutiny, and they may coexist with adequate formal legislation. We are able to show that more accountable countries, and less unequal ones, have stricter legal enforcement, i.e. financial contracting and entry are less subject to political interference.

While financial development promotes entry in our model, it does so as a mechanism of a political equilibrium, not as an independent determinant. We thus cannot offer a generic recommendation in favor of financial development as an engine of entry, while ignoring the institutional context in which it would take place. Reforms aimed at financial development may be captured by an opportunistic elite. Privatization and liberalization of the banking system may fail to deliver growth if it is undermined by connected lending and outright plundering by bank owners, as in Mexico before 1994 (Lopez-de-Silanes, 2002) and in Russia (Perotti, 2001). While good legislation and policy play a role, ultimately financial development, entry and growth require an effective and fair enforcement of rules. As in De Soto (2000), poor legal enforcement and unclear property rights limit individuals' ability to commit contractually, and affect average growth because it reduces the median citizen's freedom of economic initiative, at the benefit of established interests and at the cost of social welfare, as argued forcefully in Rajan and Zingales (2003b).

Taking a political economy approach to institutional design implies that most variables become endogenous. In our approach, the initial wealth distribution and the degree of political accountability are exogenous. The exogenous allocation of power in our model may be due to legal origins or initial endowments. Glaeser and Shleifer (2002) suggest that power over legal enforcement was assigned in France to

the state because high inequality made local lords too powerful, and to the judiciary in the UK because dispersion of income made the king potentially too powerful. The diffusion of the ownership of land may have empowered the British middle class to constrain the power of the king (Rajan and Zingales, 2003b). Colonies created around plantation economies were inherently unequal and needed a repressive system to function (Engerman and Sokoloff, 1997).

A final consideration is that our simple model probably underestimate the role of inequality, which most probably affects not just enforcement but accountability itself. The results suggest that wealth inequality may not just persist but worsen over time under limited entry. When a highly unequal distribution of wealth produces limited entry, only those able to create firms will accumulate profits, thus producing an even more skewed ex post wealth distribution which would tend to self reinforce itself. Income inequality may thus create a underdevelopment trap, which may persist until the political environment becomes more accountable.

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Appendix

Proof of Proposition 1. At stage 4 the politician compares the values of n requested by the two lobbies: n_1 and n_2. The difference in social surplus between n_2 and n_1 is

$$\Delta S = (n_2 - n_1)[m - (n_1 + n_2)/2]. \tag{A1}$$

Hence, the politicians will vote in favor of the first lobby as long as

$$L_1 \geqslant L_2 + \beta \Delta S/(1-\beta), \tag{A2}$$

where L_1 and L_2 are the contributions of the first and second lobbies, respectively. They vote in favor of the second lobby, otherwise.

At stage 3, assuming without loss of generality that $n_2 > n_1$, entrepreneurs join the first lobby if their wealth is sufficiently high: that is, if $w_j \geqslant I(m - n_1)/m$. For these entrepreneurs the success of the first lobby guarantees them higher profits. Those potential entrepreneurs with intermediate level of wealth join the second lobby: if $I(m - n_1)/m > w_j \geqslant I(m - n_2)/m$. All the remaining potential entrepreneurs do not join any lobby, since they will never be able to enter in either case.

At stage 2, the second lobbyist chooses n_2 to make it as costly as possible for the first lobby to win, that is he chooses n_2 to maximize $L_2 + \beta \Delta S/(1-\beta)$, where $L_2 = (n_2 - n_1)(m - n_2)$ is the surplus enjoyed by the second lobby. Substituting ΔS using expression (A1), we have that the second lobbyist maximizes

$$\max_{n_2} \ (n_2 - n_1)[(m - n_2) + \frac{\beta}{1-\beta}(n_2 - n_1)/2]. \tag{A3}$$

From the first order condition (necessary and sufficient since the objective function is concave in n_2), we find that

$$n_2 = \frac{m + n_1(1-\beta)}{2-\beta}. \tag{A4}$$

At stage 1, the first lobbyist anticipates that he will win by paying a political contribution that satisfies the inequality (A2). Substituting the expression for n_2 given in (A4) in expression (A3), we obtain the expression for the the political contribution

that the first lobby needs to pay in order to win:

$$L_1 = \frac{(m - n_1)^2}{2(2-\beta)(1-\beta)}. \tag{A5}$$

The first lobbyist then maximizes the surplus that he can generate:

$$\max_{n_1} \; n_1(m - n_1) - L_1. \tag{A6}$$

From the first order condition (necessary and sufficient because the objective function is concave in n_1), we find that $n_1 = m\phi \equiv n^*$, where $\phi \equiv \frac{1+(2-\beta)(1-\beta)}{1+2(2-\beta)(1-\beta)} < 1$. Thus the size of the winning lobby is smaller than m. By substituting n^* into the objective function (A6), it is easy to see that the objective function is strictly positive. Hence, the first lobbyist will indeed choose $n_1 = n^*$, the first lobby will win, and the number of active entrepreneurs in the economy will be n^*.

Since n maps into a level of investor protection $\delta = \frac{n\sigma + m(I-\sigma)/2}{m(a-n)}$, we find the level of investor protection by replacing $n = n^*$ in this expression. ■

Proof of Proposition 2. To win, the second lobby needs to bribe a measure $\pi\rho + \varepsilon$ of politicians, and can pay each of them a maximum contribution of $L_2/(\pi\rho + \varepsilon)$. Thus to defeat the second lobby, the first lobby needs to offer a contribution equal to $L_2/(\pi\rho + \varepsilon) + \Delta S$ to a number $\pi(1 + \rho)$ of politicians. To maximize the chances of winning, the second lobby maximizes the costs for the first lobby to win:

$$\max_{n_2} \quad \pi(1 + \rho)[L_2/(\pi\rho) + \Delta S], \tag{A7}$$

where we let ε go to 0 since ε can be arbitrarily small.

From the first order condition (necessary and sufficient since the objective function is concave in n_2), we find that

$$n_2 = \frac{m(1 + \pi\rho) + n_1}{2 + \pi\rho}. \tag{A8}$$

By substituting (A8) into the objective function (A7), we find that the cost of winning for the first lobby is

$$L_1 = (m - n_1)^2 \xi(\rho), \tag{A9}$$

where $\xi(\rho) = \frac{1+\rho}{2\rho}\frac{(1+\pi\rho)^2}{2+\pi\rho}$.

The first lobbyist chooses $\rho = \rho^*$ to minimize L_1. Notice that ρ^* is independent of the size of the initial lobby n_1 (this is because expression (A9) is separable in ρ and n_1). Without solving for ρ^* one can use the envelope theorem to show that the minimum lobbying cost ξ^* is an increasing function of the number of politicians π.

The minimum lobbying cost is therefore

$$L_1 = \xi^*(m - n_1)^2. \tag{A10}$$

The first lobbyist then maximizes the surplus that he can generate:

$$\max_{n_1} \; n_1(m - n_1) - L_1. \tag{A11}$$

From the first order condition (necessary and sufficient because the objective function is concave in n_1), we find that $n_1 = m(1+2\xi^*)/(2+2\xi^*) \equiv n^{**}$. Notice that ξ^* depends only on and is increasing in the number of politicians π. Notice also that $(1+2\xi^*)/(2+2\xi^*) < 1$ and that n^{**} is increasing in ξ^*.

As before, n maps uniquely into a level of investor protection δ given by $\delta^*_\pi = I(1+2\xi^*)/[a + I(1+2\xi^*)]$.■

Table 1. Descriptive Statistics

Entry is the average annual growth rate in the number of establishments operating in a sector in the 1983-92 interval, as reported by UNIDO. Industry's share of total number of establishments is the number of establishment in a given manufacturing sector as a fraction of the total number of establishment in the country at the beginning of the interval, from UNIDO. Democracy score is the average score produced by Polity IV for the 1964-83 interval. It ranges between 0 and 10 (a greater number indicates more democracy). Income inequality is the average Gini coefficient of income inequality for the 1964-83 interval, from the World Bank World Development Indicators and other sources. It ranges between 0 and 100 (a greater number indicates greater inequality). Common law dummy is a dummy variable that takes value 1 if the origin of the commercial law is the English common law, and 0 otherwise (computed from LLSV, 1998). Stock market development is the ratio of stock market capitalization and GDP in 1980, as reported by RZ. Age of democracy is the tenure of the system as of 1983, as reported by the Database of Political Institutions 2000. For countries that were not democracy in 1983, this variable takes value 0. For democracies more than 53 years old in 1983, the age reported in the dataset is 53 years. Cost of entry is the direct cost associated with meeting government requirements for entry plus the monetized value of the entrepreneur's time (as a fraction of GDP per capita in 1999), as reported by Djankov, et al. (2002). Enforcement is the average of the five enforcement variables produced by LLSV (1998): efficiency of the judicial system, rule of law, corruption, risk of expropriation, and risk of contract repudiation. It ranges between 0 and 10 (a greater number indicates stronger enforcement). Per capita income is the 1980 GNP per capita in US dollars, as reported by RZ. Antidirector rights is the index of shareholder rights produced by LLSV (1998). External dependence is a measure of the dependence on external capital for young firms as measured by RZ. Entry opportunity is the growth rate of value added by industry over the 1983-92 interval in the USA.

	Mean	Median	Std.Dev.	Min.	Max.	N.Obs.
A. *Country & industry-level variables*						
Entry	0.022	0.017	0.155	−1	1	1146
Industry's share of total number of establishments	0.030	0.012	0.045	0.000	0.611	1146
B. *Country-level variables*						
Democracy score	6.010	6.975	3.911	0	10	38
Income inequality	40.204	37.273	10.037	26.240	64.947	38
Common Law dummy	0.342	0	0.481	0	1	38
Stock market development	0.722	0.685	0.392	0.132	1.962	38
Age of democracy	23.553	16.5	21.347	0	53	38
Cost of entry	0.403	0.355	0.292	0.017	1.170	36
Enforcement	7.319	6.806	1.948	4.084	9.918	36
Anti-director rights	2.972	3	1.253	1	5	36
Per-capita income	4,726	2,591	4,584	121	14,368	38
C. *Industry-level variables*						
External dependence	0.672	0.664	0.653	−1.535	2.058	33
Entry opportunity	0.047	0.047	0.026	−0.033	0.107	33

Table 2. Entry, Democracy, Inequality and Law

The dependent variable is entry. Independent variables are the industry's share of total number of establishment in the country in 1983, and several interaction terms obtained by multiplying external dependence for young firms with country-level variables: (1) democracy score; (2) income inequality; (3) common law dummy; and (4) stock market development. All regressions contain fixed effects for countries and industries (not reported). *, **, *** indicate significance at 10, 5, 1 percent respectively. The standard errors shown in parentheses are adjusted for heteroskedasticity using Huber-White correction.

	(1)	(2)	(3)	(4)
Industry's share of total	−0.711***	−0.711***	−0.718***	−0.714***
number of establishments	(0.205)	(0.205)	(0.205)	(0.206)
External dependence ×	0.005***	0.005***	0.005***	0.005***
Democracy score	(0.001)	(0.001)	(0.001)	(0.001)
External dependence ×		0.000		
Income inequality		(0.001)		
External dependence ×			0.017	
Common Law dummy			(0.014)	
External dependence ×				0.019**
Stock market development				(0.009)
$Adj.R^2$	0.291	0.290	0.292	0.291
N. obs	1146	1146	1146	1146
N. countries	38	38	38	38

Table 3. Opportunity for entry instead than external dependence

The dependent variable is entry. Independent variables are the industry's share of total number of establishments in the country in 1983, and several interaction terms obtained by multiplying growth opportunity (the level of growth in the Unites States by industry) and country-level variables: (1) democracy score; (2) income inequality; (3) common law dummy; and (4) stock market development. All regressions contain fixed effects for countries and industries (not reported). *, **, *** indicate significance at 10, 5, 1 percent respectively. The standard errors shown in parentheses are adjusted for heteroskedasticity using Huber-White correction.

	(1)	(2)	(3)	(4)
Industry's share of total	−0.713***	−0.718***	−0.710***	−0.712***
number of establishments	(0.206)	(0.207)	(0.207)	(0.207)
Entry opportunity ×	0.051*	0.044*	0.055**	0.045*
Democracy score	(0.027)	(0.025)	(0.027)	(0.026)
Entry opportunity ×		−0.007		
Income inequality		(0.010)		
Entry opportunity ×			−0.351	
Common Law dummy			(0.265)	
Entry opportunity ×				0.340*
Stock market development				(0.204)
$Adj.R^2$	0.286	0.285	0.286	0.286
N. obs	1146	1146	1146	1146
N. countries	38	38	38	38

Table 4. IV regressions: Age of democracy as an instrument for democracy score

The dependent variable is entry. Independent variables are the industry's share of total number of establishments in the country in 1983, and several interaction terms obtained by multiplying the level of entry in the Unites States external dependence for young firms with country-level variables: (1) democracy score; (2) income inequality; (3) common law dummy; and (4) stock market development. The table reports the result of the second-stage regression in a two-stage-least-square estimation procedure, where the age of the democracy is used as an instrument for democracy score. All regressions contain fixed effects for countries and industries (not reported). *, **, *** indicate significance at 10, 5, 1 percent respectively. The standard errors shown in parentheses are adjusted for heteroskedasticity using Huber-White correction.

	(1)	(2)	(3)	(4)
Industry's share of total	-0.708^{***}	-0.710^{***}	-0.713^{***}	-0.709^{***}
number of establishments	(0.203)	(0.203)	(0.204)	(0.204)
External dependence ×	0.011^{***}	0.013^{***}	0.011^{***}	0.011^{***}
Democracy score	(0.004)	(0.004)	(0.004)	(0.004)
External dependence ×		0.001		
Income inequality		(0.001)		
External dependence ×			0.013	
Common Law dummy			(0.015)	
External dependence ×				0.006
Stock market development				(0.014)
$Adj.R^2$	0.326	0.323	0.328	0.327
N. obs	1110	1110	1110	1110
N. countries	38	38	38	38

Table 5. Channels: Determinants of Entry

The dependent variable is entry. Independent variables are the industry's share of total number of establishments in the country in 1983, and several interaction terms obtained by multiplying external dependence, which measures the industry dependence on external capital for young firms, with country-level variables: (1) enforcement; (2) stock market development; (3) cost of entry; (4) per capita income (in logarithm); and (5) antidirector rights. All regressions contain fixed effects for countries and industries (not reported). *, **, *** indicate significance at 10, 5, 1 percent respectively. The standard errors shown in parentheses are adjusted for heteroskedasticity using Huber-White correction.

	(1)	(2)	(3)	(4)	(5)	(6)
Industry's share of total	−0.676***	−0.675***	−0.682***	−0.676***	−0.680***	−0.683***
number of establishments	(0.245)	(0.245)	(0.243)	(0.245)	(0.244)	(0.243)
External dependence ×	0.010***	0.011***	0.005*	0.011*	0.009***	0.005*
Enforcement	(0.003)	(0.004)	(0.003)	(0.006)	(0.003)	(0.003)
External dependence ×		−0.006				
Stock market development		(0.012)				
External dependence ×			−0.055**			−0.044*
Cost of entry			(0.025)			(0.023)
External dependence ×				−0.001		
Log (Per-capita income)				(0.001)		
External dependence ×					0.009***	0.006**
Antidirector rights					(0.003)	(0.003)
$Adj.R^2$	0.276	0.276	0.276	0.276	0.278	0.279
N. obs	1084	1084	1084	1084	1084	1084
N. countries	36	36	36	36	36	36

Table 6. Channels: Determinants of Enforcement

The dependent variable is enforcement. The independent variables are: democracy score, income inequality, common law dummy, and per capita income. This variables are defined in Table 1. In column (6), we report the results of the second stage of a two-stage-least-square model where age of the democracy is used as instrument for democracy score. ***, **, * indicate significance at 1% percent, 5%, and 10% levels, respectively. The standard errors shown in parentheses are adjusted for heteroskedasticity using Huber-White correction.

	(1)	(2)	(3)	(4)	(5)	(6) - IV
Constant	5.270***	12.209***	8.731***	8.619***	−1.264	7.285***
	(0.372)	(0.758)	(0.941)	(1.040)	(1.198)	(1.241)
Democracy score	0.353***		0.274***	0.285***	0.080**	0.391***
	(0.046)		(0.050)	(0.059)	(0.040)	(0.066)
Income inequality		−0.121***	−0.075***	−0.071***	−0.029**	−0.052**
		(0.017)	(0.017)	(0.021)	(0.012)	(0.024)
Common law				−0.291	0.577**	−0.494
				(0.473)	(0.264)	(0.469)
Log (Per-capita income)					1.144***	
					(0.126)	
R^2	0.510	0.374	0.628	0.633	0.881	0.598
N. obs	48	48	48	48	48	48

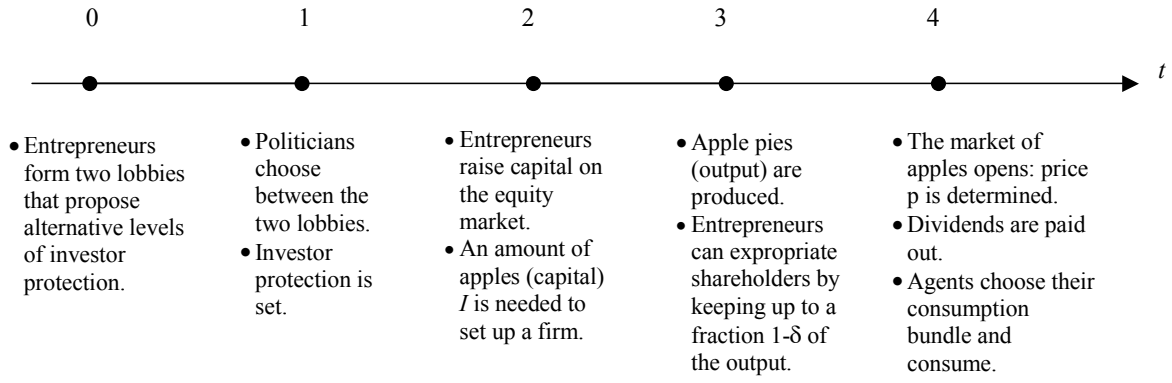

Figure 1. Timeline.