Politics, Investor Protection and Competition

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Abstract

External finance is critical for less established entrepreneurs, so poor investor protection can hinder competition. We model how lobbying by incumbents may reduce access to finance in countries where politicians are less accountable to voters. In a broad cross-section of countries and industries, we find that (i) the number of producers and entry rates are positively correlated with investor protection in financially dependent sectors, and (ii) countries with more accountable political institutions have better investor protection.

Keywords: Financial Development, Investor protection, Competition, Lobbying, Entry, Cost of Entry

JEL Classifications: G21, G28, G32

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1. Introduction

Limited access to finance is a serious barrier to entry and growth for less established, new or smaller firms. Adequate funding enables entrepreneurs to overcome generic barriers or constraints to expansions. A broad range of evidence has shown that financial underdevelopment and limited bank competition hinder new firm creation and economic growth (Rajan and Zingales 1998; Levine 1999; Beck, Levine, and Loyaza 2000; Black and Strahan 2002; Cetorelli and Strahan 2006; Aghion, Fally and Scarpetta 2006). As poor investor protection limits access to finance (LaPorta et al, 1997, 1998), it also has the effect of reducing competition. Thus any factor which affects financial development, such as common law (LaPorta et al, 1997, 1998), or political support (Pagano and Volpin, 2005; Perotti and von Thadden, 2006) may indirectly favor competition,

Rajan and Zingales (2003a, 2004) have strongly argued that limited financial development may result from the political influence of established producers seeking to reduce competition. This paper shows how the ability of incumbent lobbying to affect investor protection and thus competition depends on the degree of political accountability. In our model, wealthier entrepreneurs need less external finance and thus lobby for weak investor protection, to limit access to funding to competitors.[1] Reduced competition lowers welfare and makes politicians less popular, so the lobby needs to offer compensating political contributions ("bribes"). The equilibrium level of investor protection (and competition) is the solution of the trade off between the bribes and the increase in market power. Our main predictions are positive relations between effective investor protection and competition, and between investor protection and political accountability.

Next, we provide supporting evidence from a broad cross-country sample of industries. First, better investor protection, and other measures of financial development and financial access, does indeed favor competition and entry in more financially dependent sectors. Interestingly, the financial

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

channel appears dominant relative to generic measure of contestability, such as entry costs, openness and economic development.[2]

Second, we show that – after controlling for legal origin – effective investor protection is better in more politically accountable countries. A distinct contribution here is that we identify a measure of political accountability which appears both exogenous and robust to the most challenging controls. In general, formal measures of democracy as well as indices of political accountability are positively correlated with investor protection even after controlling for legal origin. However, these proxies rely on subjective evaluations and are clearly endogenous to outcomes (Glaeser et al 2004). Once we pursue the strong test of controlling for GDP per capita as a general measure of institutional quality, we find that formal and subjective measures of democratic accountability are no longer statistically significant.

We seek therefore for an objective measure of accountability in the emerging literature on the role of the media (Stromberg 2004; Besley and Prat 2007). Media diffusion appears important for dispersed agents to monitor the actions of incumbent politicians and induce policies responsive to citizens' actions [for a review, see Besley, Burgess, and Prat (2002)].[3] Media diffusion is correlated with subjective measures of its quality, such as press freedom, with education and measures of democracy, and is significantly lower when the media is politically captured (Djankov et al 2003). We show that measures of access to information, specifically the diffusion of newspaper readership, perform extraordinarily well in explaining investor protection, and its effect appears complementary to legal origin. Newspaper diffusion remains significant even when we control for per capita GDP. It is correlated positively with education and negatively with state ownership of the press, but its effect on investor protection is not due to differences in these variables. Once instrumented, newspaper circulation appears to be a robust predictor of investor protection. This is consistent with the diffusion

[2] This result is in line with recent evidence on high barriers to entry, especially in developing and in high corrupt countries (Djankov et al 2002). Fisman and Sarria-Allende (2004) and Klapper, Laeven, and Rajan (2006) show that such barriers reduce growth and entry in sectors that feature naturally high entry.

[3] As the lobbying power of special interest groups depends on what voters know, the media can be quite influential when low media costs and high literacy support a large market (Dyck, Moss, and Zingales 2005).

of information being a strong proxy for the degree of informed private scrutiny on political decisions, which increases the political cost of market power. This notion of political accountability echoes results on corporate governance, which reflects managerial accountability. Diffusion of information via disclosure appears more effective at constraining managerial abuse than regulation (La Porta, López-de-Silanes, and Shleifer 2006).

Our model is consistent with the results in Benmelech and Moskowitz (2006), who exploit variation in suffrage across U.S. states in the XIX century, and correlate them with bank entry restrictions, incorporation and usury laws. They find that less inclusive suffrage laws were associated both with tighter usury laws (which restricted the supply of credit to new and risky firms) and less generous incorporation laws. 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. Bekaert, Harvey, and Lundblad (2005) show that financial liberalizations are most successful in countries with good political institutions.

In a related paper to ours, Bebchuk and Neeman (2006) argue that lobbying by insiders using corporate resources to protect their control benefits may undermine good corporate governance. Fulghieri and Suominen (2005) examine the role that capital structure plays in the relation between corporate governance and industry concentration.

The structure of the paper is as follows. In Section 2 we introduce the model and find its political equilibrium. Section 3 contains the empirical analysis, and Section 4 concludes.

2. The model

Consider an economy inhabited by a population whose size is normalized to 1. There are two types of individuals in this economy: $m<0.5$ entrepreneurs and $1-m$ consumers. Entrepreneurs have the human capital to set up a new firm and have an endowment of capital (apples) $\tilde{w}$ uniformly distributed on the support $[0,W]$. The representative consumer has an endowment of apples w.

There are two goods: apples (which are also the production input and the numeraire) and apple pies (produced by entrepreneurs using apples as input). Individuals receive utility from consumption at $t = 3$ (the last period in the model). The utility of a representative individual i is as follows:

$$U_i = k_i + u(c_i) = k_i + ac_i - 1/2(c_i)^2 \quad (1)$$

where k_i and c_i are the number of apples and apple pies consumed, respectively, and $a > 1$ is a constant. The specific functional form used in equation (1) simplifies the analysis, but is not required: the essence of the results would go through for any quasi-linear utility function.

A firm needs to invest $I \geq W$ apples to produce 1 apple pie. The capital needed to finance the project can be raised in two ways: entrepreneurs can invest their own wealth w in their own company; and/or they can raise funds on the capital market as external equity.[4] We denote the stake held by agent i in firm k as α_{ik} and the equity stake owned by the entrepreneur e in his own firm as α_{ee}.

As an alternative investment opportunity, individuals can access a riskless investment technology that produces $(1 + r)$ units of apples in $t = 3$ for each apple invested in $t = 0$. Competition in the capital market ensures that the required rate of return on equity financing is r, which we normalize to zero. We assume that the economy is closed (this assumption is relaxed in the Appendix). In a closed economy, 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 $m = a - I$. The economy as a whole is not financially constrained; that is, the aggregate demand of apples as production inputs is smaller than the aggregate supply of apples ($mW/2 + (1-m)w > mI$).

2.1. Timeline

At t = 0, entrepreneurs form one pressure group to lobby politicians on the choice of the degree of investor protection δ. We assume that consumers are too dispersed to organize in pressure groups or are unable to borrow money to lobby politicians: for instance, because one can borrow money only

[4] Because there is no profit uncertainty, we do not distinguish between debt and equity.

against future profits. Let $L(\delta)$ be the schedule of political contributions as a function of the chosen level of investor protection.

The effect of investor protection in the model is as follows: an entrepreneur can raise on the market only a fraction δ of the needed capital. We refer for simplicity to δ as investor protection, although in principle the specification captures any type of entry barriers. For instance, if entrepreneurs need to pay an up-front entry cost equal to $(1-\delta)I$ before they can raise funds, only those wealthier than the entry cost can set up their own firm. This assumption captures the main features of the theoretical models in Modigliani and Perotti (2000) and Shleifer and Wolfenzon (2002), and the empirical evidence by La Porta et al (1997). With better investor protection, entrepreneurs can raise more external capital and need less personal wealth to set up a firm.

As an alternative interpretation, investors may be willing to lend up to δI, because only such fraction of the capital can be used as collateral and the firm's output is not verifiable. In this second interpretation, improvements in investor protection relax the financial constraint.

At t = 1, a policymaker chooses the level of investor protection to maximize the following objective function:

$$\max_{\delta} U^{P} = \max_{\delta} (1-\beta) L(\delta) + \beta S(\delta) \tag{2}$$

where $\beta \in [0,1]$ is a measure of the policymaker's benevolence (inclination toward the social surplus), and $S(\delta)$ is the social surplus associated with δ. We take β to be a measure of politicians' accountability. In an autocratic country, β will be small because politicians are not accountable to voters. In a democratic country, politicians wish to be reelected. Hence, β indicates to what extent their record over issues is important relative to their spending in political promotion. As accountability increases, politicians need to give more importance to the social surplus if they want to be reelected.

At t = 2, an individual entrepreneur can set up a firm by investing a fixed amount of apples equal to I. Each firm produces a fixed output of 1 apple pie.

At t = 3, the output of apple pies is produced and distributed as dividends. 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 as follows:

$$k_i + pc_i \leq y_i \tag{3}$$

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

$$y_c = \left(w - \sum_k \alpha_{ck} P_k\right) + p\sum_k \alpha_{ck} \tag{4}$$

where $\sum_k \alpha_{ck} P_k \leq w$ is the total financial investment (P_k is the price of company k at $t = 2$). For an active entrepreneur e, there is one additional term:

$$y_e = \left(w_e - \sum_k \alpha_{ek} P_k\right) + p\sum_k \alpha_{ek} + [(1-\alpha_{ee})P_e - I] \tag{5}$$

which represents the capital raised on the market net of investment by that entrepreneur's own firm e.

2.2. Market equilibrium

At $t = 3$, each consumer i maximizes utility (1) subject to the budget constraint (3). From the first-order condition (which is necessary and sufficient), and using the no-entry condition ($a = m + I$), we obtain that $c_i = m + I - p \equiv c$. That is, all consumers choose to consume the same amount of apple pies, while consumption of apples depends on their individual income: $k_i = y_i - pc$.

With n active firms producing a single unit of output, the aggregate supply of apple pies is n, while its aggregate demand is $(m + I - p)$. Hence,

Lemma 1 In equilibrium, $p = I + (m - n)$, and $c = n$. The indirect utility of individual i is $V_i = y_i + (1/2)n^2$.

At $t = 2$, entrepreneurs need to post as collateral a fraction $1 - \delta$ of the required capital. Hence, only entrepreneurs j that are richer than $(1 - \delta)I$ can setup a company. Consequently, the number of active firms n is a function of δ:[5]

Result 1: The number of active firms is strictly increasing in investor protection:

[5] Notice that the assumption that $W \geq I$ implies that $n(\delta) \leq m$ for all δ.

$$n(\delta) = m\left[1 - \frac{(1-\delta)I}{W}\right] \tag{6}$$

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 / P_k, equals the return from investing in the alternative investment, which was normalized to 1. Hence, the income of the representative consumer (4) simplifies to $y_c = w_c$, while that consumer's indirect utility becomes:

$$V_c = w_c + (1/2)n^2. \tag{7}$$

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 *e* given in (5) simplifies instead to $y_e = w_e + (m-n)$, where the second term is the net present value of the project. Hence, the entrepreneur's indirect utility is

$$V_e = \begin{cases} w_e + (1/2)n^2 + (m-n) & \text{if } w_e \geq (1-\delta)I \\ w_e + (1/2)n^2 & \text{otherwise} \end{cases} \tag{8}$$

It is easy to show that V_e is decreasing in investor protection as long as *e* is an active entrepreneur, that is, if $w_e \geq (1-\delta)I$. This reflects the fact that the profit decreases with the number of active entrepreneurs. If instead *e* is not active ($w_e < (1-\delta)I$), V_e is increasing in δ because entrepreneur *e* is effectively a consumer.

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

$$S(n) = mW/2 + (1-m)w + (1/2)n^2 + n(m-n). \tag{9}$$

The derivative of S(.) with respect to *n* equals (*m* − *n*), which is positive because *n* is always smaller than *m*.

Since *n* is increasing in δ, we obtain the following:

Lemma 2 The social surplus is strictly increasing with investor protection. The socially optimal level of investor protection is $\delta = 1$.

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.

2.3. Political equilibrium

As a benchmark, consider first the case in which individuals can directly vote on investor protection. Since consumers are the majority of the population, the political choice will be maximum competition ($n = m$) and high investor protection ($\delta = 1$). The reason is that the median voter theorem applies because preferences are single peaked in the number of entrants n and the median voter is a consumer who stand to lose from low competition.

In our setting, the political outcome differs from the median voter's choice, because politicians who choose the quality of investor protection law or their enforcement do not care only about social surplus but also about lobby contributions. Since 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. Hence, politicians choose n so at to maximize their objective function:

$$\max_n U^P = \max_n (1-\beta)L(n) + \beta S(n), \tag{10}$$

where $L(n)$ is the schedule of political contributions as a function of the chosen level of competition, $S(n)$ is the social surplus associated with n given in (9), and β still measuring the politician's accountability.

Entrepreneurs must set up a coalition to lobby politicians, who otherwise choose the social optimum. The coalition is chosen to maximize the aggregate utility of all member entrepreneurs net of the political contributions. Since the reduction in social surplus from a choice of competition $n < m$ is $\Delta S(n) = S(m) - S(n)$, to win the lobby must pay a contribution

$$L \geq \frac{\beta}{1-\beta}\Delta S(n) = \frac{\beta}{1-\beta}\frac{(m-n)^2}{2}. \tag{11}$$

Politicians will thus choose $n < m$ if they are compensated for the associated reduction in social surplus. The lobbyist can effectively choose the desired competition level n by paying a political contribution $\frac{\beta}{1-\beta}\frac{(m-n)^2}{2}$.

The lobbyist will choose n to maximize the utility of entrepreneurs net of the lobbying costs. Since the utility function of a generic entrepreneur j with wealth w_j is given in equation (8), the sum of entrepreneurs' utility function is:

$$\sum_j V_j(n) = mW/2 + mn^2/2 + n(m-n). \tag{12}$$

The lobbyist solves the following optimization problem:

$$\max_n mW/2 + mn^2/2 + n(m-n) - \frac{\beta}{1-\beta}\frac{(m-n)^2}{2} \tag{13}$$

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

Proposition 1: The number of firms in the economy is

$$n^* = \frac{m}{1+(1-m)(1-\beta)}. \tag{14}$$

This level of competition is achieved by paying a contribution schedule $L(n)$ such that $L(n) = \frac{\beta}{1-\beta}\frac{(m-n)^2}{2}$ if $n = n^*$ and $L(n) = 0$ for any $n \neq n^*$.

It is interesting to notice that competition is at the socially optimal level m only if $\beta = 1$ (i.e., only if the policymaker cares only about the social surplus) or if $m = 1$ (i.e., there are no consumers in the economy). In all other cases, competition is at a suboptimal level. The intuition is that, as β increases, it becomes costlier for the lobby to choose a low level of investor protection, because the policymakers require a greater compensation for deviating from the median voter choice. Greater political accountability induces the lobby to allow more competition in order to reduce the

contribution needed to gain legislative support. The result is higher output. In this sense, political competition drives economic competition.

Replacing expression (14) into (6), we can find the corresponding level of investor protection:

Result 2: Investor protection is strictly increasing in political accountability:

$$\delta^* = 1 - \frac{W}{I}\frac{(1-m)(1-\beta)}{1+(1-m)(1-\beta)}. \tag{15}$$

The intuition is that β increases competition, and more competition is only possible with better investor protection (if one keeps the wealth distribution constant). Investor protection is at the optimal level ($\delta = 1$) only if the policymaker cares only about the social surplus ($\beta = 1$) or if there are no consumers in the economy ($m = 1$). In all other cases, investor protection is suboptimal.

2.4. Empirical predictions

In Section 3, first we will test Result 1, according to which competition should be positively correlated with investor protection. To test this prediction, we will follow the approach adopted by Rajan and Zingales (1998) for a related analysis of the effect of financial development on growth. Their approach to curb identification problems and the criticism of omitted variables is to include country- and industry-fixed effects in their regressions. Country-specific financial development is then interacted with industry-specific dependence on external finance to test whether growth is higher in industries that depend more on external capital in more financially developed countries. Our empirical strategy is to apply the same approach to data on the number of companies in a sector to test whether investor protection promotes competition, and whether investor protection is affected by political accountability.

Specifically, this empirical strategy requires testing for a positive correlation between competition and investor protection when external dependence is higher. It is easy to see that the model delivers this prediction by observing that the second cross derivative of n with respect to δ and I

(see equation (6)), is positive: that is $\partial^2 n/\partial\delta\partial I = m/W > 0$. Thus, Section 3 will use country-level data on entry costs, financial development, law enforcement, creditor, and shareholder rights to proxy for δ to test whether:

Prediction 1: There is more competition (more active firms and more entry) in sectors with greater dependence on external capital in countries with greater investor protection.

Fisman and Love (2003) propose an alternative way to classify sectors according to their growth opportunities, defined as the US growth rate of value added by industry. In the model, the parameter m represents growth opportunity because it is number of firms that would operate in the sector if there were no barriers to entry ($\delta = 1$). The model predicts a positive correlation between competition and investor protection when growth opportunity is greater: the second cross derivative of n with respect to δ and m (see equation (6)), is positive: that is $\partial^2 n/\partial\delta\partial I = I/W > 0$. This prediction will also be tested in Section 3.

We will then test Result 2, which can be restated as follows:

Prediction 2: There is better investor protection in countries where politicians are more accountable to society.

To do so, we will develop proxies for investor protection and propose several measures of political accountability.

2.5. Extensions

This section analyzes several extensions. First, we show that our lobbying model is equivalent to the model proposed by Grossman and Helpman (1994).[6] Second, we extend the model to allow for wealth

[6] An earlier version (Perotti and Volpin 2004) addresses the multiplicity of equilibria and the hypothesis of exogenous agenda in Grossman and Helpman (1994), using a sequential lobbying model. This produces qualitative similar results and identical empirical predictions to the one presented in Section 2. We also confirm

inequality across entrepreneurs. Inequality per se has no impact on competition, but will in general reduce the equilibrium level of investor protection. In the Appendix, we examine the case of an open economy. We find that open economies have more competition and better investor protection.

2.5.1. Common agency

In Section 2 we assumed that entrepreneurs can form only one lobbying group, and we solved for the optimal lobby composition. We obtain the same results using the Grossman and Helpman (1994) model, where the assumption of a single lobby is not needed. Building on Bernheim and Whinston (1986), Grossman and Helpman (1994) 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 π to maximize:

$$\sum_j W_j(\pi) + AW(\pi), \tag{16}$$

where $W_j(\pi)$ is the indirect utility of the lobbyists, $W(\pi)$ 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 lobbyists' 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, A, equals $\beta/(1-\beta)$. Second, the indirect utility of the lobbyists is given in equation (8). Hence, the sum of entrepreneurs' utility function is as follows:

$$\sum_j W_j(\pi) = \sum_j V_j(n) = mW/2 + mn^2/2 + n(m-n)\,. \tag{17}$$

Furthermore, the social surplus is

$$W(\pi) = S(n) = mW/2 + (1-m)w + (1/2)n^2 + n(m-n). \tag{18}$$

Finally, to apply the result in Grossman and Helpman, we substitute in (16) the expression for the social surplus (18) and for the sum of the lobbyists' utility functions (17). Hence, the policy maker chooses n to maximize the following:

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the result with multiple legislators, showing how the winning lobby must gain over a "supermajority" of

$$mW/2 + mn^2/2 + n(m-n) + \frac{\beta}{1-\beta}\left[mW/2 + (1-m)w + (1/2)n^2 + n(m-n)\right]. \qquad (19)$$

From the first-order conditions of this problem, we obtain the same identical results as in Proposition 1. Thus, the model that we presented in Section 2 is a common-agency model. This finding suggests a simple interpretation of common-agency models. They are equivalent to models with a single lobbyist who represents the joint interests of all lobbying groups and has to convince the policymaker to choose what the lobbyists want rather than the social surplus.

2.5.2. Wealth inequality

Wealth inequality has two independent effects on the results of the model. The most important effect of wealth inequality may be to reduce political accountability. The diffusion of 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 2002). If so, countries featuring higher levels of inequality would have lower β and therefore less competition.

Yet, even if wealth inequality does not affect accountability, it changes the distribution of wealth and therefore also the degree of investor protection required by the winning lobby to exclude entry by others. To see this, let $F(\sigma,w)$ be the wealth distribution function across potential entrepreneurs, and assume that σ applies a mean-preserving spread to the distribution, so that $\int w\partial F(w)/\partial\sigma = 0$. For this equality to hold (given that $w \geq 0$) $\partial F(w)/\partial\sigma$ needs to take both positive and negative values. Notice that for β constant, competition is constant at a level n^* given in Proposition 1, and all entrepreneurs with wealth greater or equal to the cutoff level $\hat{w} = (1-\delta)I$ invest. Given a wealth distribution $F(\sigma,w)$, the equilibrium level of investor protection must satisfy the following condition:

$$n^* = m\left[1 - F(\sigma,(1-\delta)I)\right]. \qquad (20)$$

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legislators, in line with formal models in political science (Groseclose and Snyder 1996).

In words, the level of investor protection must be such that n^* entrepreneurs have wealth greater or equal to the cutoff level $\hat{w}$. Notice that wealth inequality does not affect competition, which is purely determined by β. Yet equation (20) has implications for the relationship between investor protection δ and wealth inequality σ:

$$\frac{d\delta}{d\sigma} = \frac{W}{I} \frac{\partial F(\hat{w}) / \partial \sigma}{\partial F(\hat{w}) / \partial \hat{w}}. \tag{21}$$

The sign of the denominator is always positive. The sign of the denominator depends on the sign of $\partial F(w)/\partial \sigma$. This derivative will be positive if $\hat{w}$ is small and negative for $\hat{w}$ large. Thus, the relation between investor protection and income inequality depends on whether a large fraction of the population owns enough wealth to fund a firm without external finance. In the realistic case when the wealth required to set up a company, $\hat{w}$, is too large for most entrepreneurs, the model predicts that higher income inequality should reduce investor protection, since the rich lobby needs more external finance to secure entry for all its members. Note however that once accountability is accounted for, inequality should not affect competition.

3. Empirical analysis

Here we test whether political accountability promotes competition via its impact on the quality of investor protection. First, we analyze the relation between competition and investor protection across sectors with different degree of financial dependence. Then, we consider several robustness checks. Finally, we explore the relation between political accountability and investor protection, controlling for other institutional determinants, such as legal origin.

3.1. Data

Table 1 defines the variables used in the analysis. Summary statistics are reported in Table 2. We measure competition as the number of establishments in a sector as the percentage of the total number of establishments in the country, a measure of relative firm density across sectors. As an alternative

measure, we consider entry, which is defined as the average annual percentage growth in the number of establishments during the 1982–1992 interval from UNIDO.[7] Our data covers a total of 1146 observations from 37 countries and 33 industries.[8] We classify industries using the external dependence measure of Rajan and Zingales (1998). As a robustness check, we also classify sectors according to their growth opportunities, as done by Fisman and Love (2003). In both cases, US data are used as a benchmark and thus are excluded from the analysis.

Effective investor protection is the sum of anti-director rights [as defined in La Porta et al (1998) and corrected in Djankov et al (2007)] and creditor rights [as defined in La Porta et al (1998)], multiplied by rule of law in 1980 (a measure of contractual enforcement developed by the International Country Risk Guide). This variable captures the quality of investor protection as actually enforced by courts. The cost of entry is the direct and indirect cost associated with meeting government requirements for entry scaled by GDP per capita, as reported by Djankov et al (2002). We control for the size of the capital markets, which may affect competition through the cost of raising external capital, as the sum of total market capitalization and bank lending to private companies in 1980 as a fraction of GDP. Another variable that can affect competition according to our model is openness, measured as the sum of import and export as a fraction of GDP in 1980. We will also consider accounting standards as an alternative measure of investor protection. As far as possible, we use predetermined or contemporaneous proxies for all our variables. Hence, we are not using any recent measure of investor protection, such as anti-self-dealing (Djankov et al, 2007).

To analyze the determinants of investor protection, we use several proxies for political accountability. A first proxy is democracy score, which measures the general openness of political institutions (from Polity IV). A second measure of political accountability is executive constraints, as

[7] This can be roughly interpreted as the growth in the number of (independent) firms in the industry, as it is defined as a "unit which engages, under a single ownership or control, in one, or predominantly in one, kind of activity at a single location."

[8] UNIDO data is available for a large set of countries only from 1982 and is interrupted in 1992 because of a major sector reclassification. The countries included in the sample are Australia, Austria, Brazil, Canada, Chile, Colombia, Denmark, Egypt, Finland, Germany, Greece, India, Indonesia, Italy, Japan, Jordan, Kenya, Korea,

proposed by Henisz (2000). This variable characterizes the competitiveness of the political system in 1980. Our third measure of democracy is a democracy dummy, which takes value 1 if the country was a democracy in 1980 (and 0 otherwise). One concern with all these variables is that political accountability is something different from democracy. Politicians are truly accountable to society when voters are informed enough to punish politicians who do not choose what is best for them. To capture this aspect of political accountability, we use newspaper circulation in 1980, as measured by the *Economist*.

As alternative determinants of investor protection, we control for legal origin and per capita income, both well-established determinants of investor protection in the literature (La Porta et al 1998). We use as a control the Gini coefficient of income inequality (from Deininger and Squire 1996), although probably only a poor proxy for wealth inequality. We will also consider freedom of the press, which is a qualitative measure of the independence of the press produced by Freedom House; state ownership of the press, which is a more objective measure of press independence from Djankov et al. (2003); and the degree of education, as measured by the number of years of schooling from Glaeser et al. (2004). The analysis of investor protection is performed on the entire sample of 49 countries studied by La Porta et al (1998).

3.2. Poor access to finance as a barrier to competition

Table 3 examines the correlation between financial and economic barriers to competition and number of firms. The first three columns show that all three proxies for financial barriers (effective investor protection, financial development and accounting standards) are correlated with greater competition in more financially dependent sectors, as predicted by the model. Columns (4) to (6) report the correlation between competition and economic factors which are likely to have a direct impact competition, such as cost of entry and openness, as well as a broad control of economic development, per capita income. These correlations are statistically significant but weaker than those for financial variables.

Malaysia, Mexico, Netherlands, New Zealand, Nigeria, Norway, Pakistan, Peru, Philippines, Portugal, Singapore, South Africa, Spain, Sri Lanka, Sweden, Turkey, UK, Venezuela, and Zimbabwe.

Table 4 investigates the relative importance of financial versus economic barriers to competition, by performing a horse race between these variables. It reports the surprising result that measures of financial barriers consistently dominate, even once we test them against the strongest generic measure of institutional quality, namely per capita income. These results are strongly consistent with our first prediction: there is more competition in sectors that are more dependent on external capital in countries that have better access to finance.

Table 5 and 6 report two sets of robustness checks on this basic result. Table 5 classifies industries according to the alternative measure of growth opportunities (rather than external dependence), as developed in Fisman and Love (2003). The results confirm the strong role of financial access variables relative to other generic obstacles to competition. An additional result is that here effective investor protection is the key variable relative to measures of financial market size. Table 6 considers another important aspect of competition related to contestability, namely entry. In these regressions – not surprisingly – the cost of entry has a significant effect. However, entry rates are indeed correlated with our financial measures, in particular investor protection and accounting standards.

Even though the data set offers limited options, we have performed additional tests which we do not report here. A natural indicator of market power would be profit margins, which the UNIDO dataset does not report. Of course, reported profits are most likely to be both very noisy, as well as downward biased precisely in countries with weak political and thus managerial accountability. From the available data we could produce a rough index of profitability defined as the ratio of value added net of wages and output. A regression of this measure of profitability on investor protection (and other barriers to competition) produced no significant results. An alternative but less obvious measure of competition is average firm size. We found a positive correlation between investor protection measures and average producer size, which is consistent with a reasonable view that larger average size suggests more intense competition.

3.3. Determinants of investor protection

We now turn to the implications of the political economy model for access to finance. Table 7 tests the relation between effective investor protection and several proxies of political accountability. In all specification we control for legal origin (La Porta et al 1997), a well established determinant of investor protection.

The table first reports the effect of three natural measures of formal democratic rights. Column (1) considers the correlation between effective investor protection and a general proxy of openness of political institution, called the democracy score. We find a positive and statistically significant coefficient on both variables, suggesting that investor protection is greater in countries with higher levels of democracy, as well as in common law countries. A difficulty with this measure is that it contains subjective evaluations and may be endogenous. Indeed, once we challenge in column (2) its significance by controlling for income inequality and GDP per capita, the coefficient on democracy score is not statistically significant. We find similar results in columns (3) to (6), where we consider democracy dummy and executive constraints as alternative measures of accountability. While these measures perform well in simple regressions, in all cases they are no longer correlated with investor protection when one controls for GDP per capita, as suggested in Glaeser et al (2004). Although this may simply reflect their strong correlation with income, it does undermine an independent effect of formal or subjective proxies for democratic rights on investor protection.

The last two columns use therefore an objective measure of accountability – newspaper circulation. Our results indicate that newspaper circulation is a very strong determinant of investor protection, and remains significant even when we control for per capita GDP. Newspaper circulation and common law together explain 69% of the variability. In column (8), the coefficients on income inequality and per capita income are not statistically different from zero.

The results are also economically significant. Using the results in column (7), an increase in political accountability by one standard deviation (0.165 units) is associated with an increase by almost one standard deviation in effective investor protection (1.37 units). This is strong evidence in favor of Prediction 2.

Table 8 evaluates the robustness of these finding by introducing two alternative objective proxies for the quality of information diffused by the press. The first one is the fraction of newspapers owned by the state from Djankov et al (2004). The second is the average level of education, defined as the years of schooling in 1980 from Glaeser et al (2004). The results clearly indicate that these variables are significantly correlated with effective investor protection, but they have no explanatory power when we control for newspaper circulation and common law dummy. Thus, newspaper circulation's effect on investor protection is not due to differences in education and state ownership of the press. However, they may be used as instruments for newspaper circulation, to control for its endogenous component (since there may be more newspaper readership when financial markets are more developed simply because of greater demand for financial information). Column 5 reports the second stage of an instrumental variable estimation which confirms the finding that newspaper circulation explains investor protection together with legal origin.

This result supports the view that more informed private scrutiny increases political accountability, just as disclosure rules aimed at increasing corporate transparency increases managerial accountability (La Porta, López-de-Silanes, and Shleifer 2006).

4. Conclusion

This paper makes two important contributions. First, it establishes the existence of finance barriers to competition, showing that entry rates and competition are affected by investor protection in sectors that depend more on external finance. The effect of investor protection on competition dominates the effect of financial development, and persists after controlling for explicit entry costs, openness and economic competition. Second, it provides evidence that investor protection is correlated with political accountability, defined as the ability of informed citizens to constrain politicians.

Our model shows that the number of producers may emerge as a trade-off between the rents from restricting competition and the political cost caused by lower welfare. Weakening access to finance is a natural channel for blocking competition, both because it is less explicit than formal barriers (Rajan and Zingales 2003a) and because abundant funding is fungible to overcome generic

obstacles to expansion. As the political system becomes more accountable, lobbying to limit competition becomes expensive, so the lobby seeks less restrains on competition, admitting better enforcement of investor protection. Thus an important message is that broader access to finance may matter for growth as much as capital markets development, as it produces a more level playing field.

The model takes the distribution of endowment and the political institutions as exogenous, leaving open the question of their historical determinants. The main candidates include legal origin (La Porta et al 1998) and initial political conditions (Acemoglu, Johnson, and Robinson 2001; Engerman and Sokoloff 2002). We also find that income inequality is sometimes significant to explain investor protection and thus competition, but it is not an independent factor once we control for accountability. The model itself suggests that economic inequality is an endogenous measure, as a less accountable society will result in more concentration of income as the outcome of unequal access to productive opportunities. Thus unequal political access translates in reduced access to economic opportunities via limited financial access.

The paper suggests that improving formal investor protection laws while ignoring its enforcement may not improve access to finance, as reforms may be captured by the current economic elite. Privatization and liberalization of the banking system fails to deliver growth if it is undermined by connected lending and outright plundering by bank owners, as in Mexico before 1994 (La Porta, López-de-Silanes and Zaparripa 2003) and in Russia (Perotti 2002). Feijen and Perotti (2006) model and provide evidence suggesting excess exit of less established firms after financial shocks, specifically in countries with weaker contractual enforcement and greater corruption. Following financial crises, exit rates are indeed higher in more financially dependent sectors in more corrupt countries, cushioning profits for remaining producers.

Entrepreneurs with limited access to funding may still operate in the informal sector, or at a reduced scale. Yet the evidence is that smaller firms in developing countries produce at very suboptimal levels, even though they show very high productivity of capital investment (Banerjee and Duflo 2005). Such findings suggest that limited access to finance is endogenous to the distribution of influence. As suggested in De Soto (2000), poor legal enforcement and unclear property rights limit individuals' ability to commit contractually and thus to raise funds. This affects growth because it

reduces access to economic initiative to the benefit of established interests. Yet legal and regulatory reforms will produce reliable access to finance only if political accountability provides the necessary enforcement guarantee on investor protection.

Appendix: Model extension with open economy

Consider two identical countries (country 0 and country 1), each populated by $1 - m > 0.5$ consumers and m entrepreneurs, with preferences and endowment as in the basic model. The two economies have fully integrated markets for equities and goods, but do not share the same investor protection. At $t = 1$, policy makers in the two countries choose noncooperatively the degree of investor protection applied to domestic firms.[9]

The bundle $(k_{i,c}, c_{i,c})$ indicates the consumption of individual i living in country $c \in \{0,1\}$. Similarly, $\alpha_{i,c}^{j,0}$ and $\alpha_{i,c}^{j,1}$ indicate the stake owned by individual i living in country c in company j incorporated in country 0 and 1, respectively. Also, $P^{j,c}$ is the price of company j if incorporated in country c, n^c is the number of companies incorporated in country c, and δ^c is the quality of investor protection in country c.

As a consequence of the new notation, the budget constraint faced by a generic agent i from country c is

$$k_{i,c} + pc_{i,c} \leq y_{i,c}. \tag{22}$$

The income of a representative consumer i, living in country c is the following:

$$y_{i,c} = \left(w_{i,c} - \sum_{k=0}^{1} \sum_{j=1}^{n^k} \alpha_{i,c}^{j,k} P^{j,k} \right) + p \left(\sum_{k=0}^{1} \sum_{j=1}^{n^k} \alpha_{i,c}^{j,k} \right). \tag{23}$$

For an active entrepreneur e from country c, there is one additional term:

$$y_{e,c} = \left(w_{e,c} - \sum_{k=0}^{1} \sum_{j=1}^{n^k} \alpha_{e,c}^{j,k} P^{j,k} \right) + p \left(\sum_{k=0}^{1} \sum_{j=1}^{n^k} \alpha_{e,c}^{j,k} \right) + \left[(1 - \alpha_{e,c}^{e,c}) P^{e,c} - I \right], \tag{24}$$

where the third term is the capital raised on the market net of the investment in firm e. The income of an inactive entrepreneur has the same structure as that of a consumer.

We replace the zero-profit condition in the closed economy, with the open-economy equivalent. However, given that the two economies as ex-ante identical, the condition is the same: $a = m + I$.

A.1 Market equilibrium

At $t = 3$, each consumer i maximizes utility (1) subject to the budget constraint (22). From the first-order conditions for apple pies, which are necessary and sufficient, and using the assumption that $a = m + I$, we obtain $c_{i,c} = m + I - p \equiv c$. That is, all consumers choose to consume the same amount of apple pies, while apple consumption depends on income: $k_{i,c} = y_{i,c} - pc$. With unit production

[9] We assume that foreigners investing in domestic firms are subject to domestic investor protection.

technology, the aggregate supply of pies is $n^0 + n^1$, while its aggregate demand is 2($m + I - p$). Hence, $p = I + m$ - ($n^0 + n^1$)/2.

At t = 2, entrepreneurs from country c need wealth $(1-\delta^c)I$ to setup a firm. Hence, the number of firms in country c is

$$n^c = m[1-(1-\delta^c)I/W]. \tag{25}$$

It is interesting to notice that expression (25) is identical to expression (6). Hence, competition is not affected by openness when one controls for investor protection.

Given that the capital market is competitive and there is no asymmetry of information, $P^c = p$. As in Section 2, one can derive the expressions for the indirect utilities of consumers and entrepreneurs in each country c. The utility of the representative consumer (4) from country c is

$$V_{i,c} = w_{i,c} + 1/2\left(\frac{n^0+n^1}{2}\right)^2. \tag{26}$$

The indirect utility of an entrepreneur e from country c is

$$V_{e,c} = \begin{cases} w_{e,c} + (1/2)\left(\frac{n^0+n^1}{2}\right)^2 + [m-(n^0+n^1)/2] & \text{if } w_{e,c} \geq (1-\delta^c)I \\ w_{e,c} + (1/2)\left(\frac{n^0+n^1}{2}\right)^2 & \text{otherwise} \end{cases} \tag{27}$$

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

$$S^c = mW/2 + (1-m)w + (1/2)\left(\frac{n^0+n^1}{2}\right)^2 + n^c[m-(n^0+n^1)/2]. \tag{28}$$

As in Section 2, surplus is increasing in investor protection.

A.2 Political equilibrium

By using the results in Section 3.1 about the equivalence between our model and common-agency models and the monotonic relation between n^c and δ^c given in (25), the policymaker in country c for $c \in \{0,1\}$ chooses n^c to solve the following problem:

$$\max_{n^c}(1-\beta)\sum_e V_{e,c} + \beta S^c \tag{29}$$

where $V_{c,e}$ is the utility function of entrepreneur e given in (27), and S^c is the social surplus given in (28). After these substitutions, the policy maker maximizes the following:

$$mW/2+\beta(1-m)w+[1-(1-\beta)(1-m)]\left(\frac{n^0+n^1}{2}\right)^2/2+n^c\left(m-\frac{n^0+n^1}{2}\right). \quad (30)$$

In a symmetric equilibrium where both countries choose the same level of competition, the first-order condition simplifies to

$$n^{**}=\frac{m}{1+(1-m)(1-\beta)/2}. \quad (31)$$

Comparing expressions (14) and (31), it is easy to see that competition is strictly greater in an open economy than in a closed economy. The intuition is that domestic lobbyists allow greater competition because part of the loss of rents due to more competition is born by foreign firms. Given the monotonic relation between competition and investor protection, it follows that investor protection is better in open economies.

This result is consistent with the finding in Rajan and Zingales (2003a) that over the past century financial development correlates with trade openness. Similarly, the cross-country evidence by Abiad and Mody (2005) indicates that trade openness has increased the pace of reform in financially repressed countries.

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Table 1. Data description

A. Variables at industry/country level:	
Number of firms:	Median number of establishments (enterprises) operating in a sector, as a percentage of total number of establishments in the 1982-1992 interval, from UNIDO.
Entry:	Average annual percentage growth rate in the number of establishments (enterprises) operating in a sector in the 1982–1992 interval, as reported by UNIDO.
B. Variables at industry level	
External dependence:	Measure of the dependence on external capital for young firms as measured by Rajan and Zingales (1998).
Growth opportunity:	Growth rate of value added by industry over the 1982-92 interval in the USA, computed using UNIDO data.
C. Variables at country level:	
Democracy score:	Measure of the "general openness of political institutions." It is a combined score based on the following six criteria. (1) How institutionalized are the procedures regarding the transfer of executive power? (2) How competitive are the elections that allocate executive power? (3) To what extent can nonelites attain executive office? (4) How independent is the (de-facto) chief executive? (5) How institutionalized is the structure for political expression? (6) To what extent are nonelites able to access institutional structures for political expression? This measure is produced by Polity IV for 1980 and is normalized to range between 0 and 1 (a greater value indicates more democracy).
Democracy dummy:	A dummy variable that takes value 1 if a country was a democracy in 1980 and 0 otherwise, as reported by the Database of Political Institutions 2000.
Executive constraints:	POLCONV score produced by Henisz for 1980. It ranges between 0 and 1 (a greater value indicates more democracy) and estimates the feasibility of policy change (the extent to which a change in the preferences of any one actor may lead to a change in government policy).
Newspaper circulation:	The number of daily newspapers sold per 1000 people in 1980, from the Economist, World in Figures. The value is divided by 1000 to range between 0 and 1.
Common law:	A dummy variable that takes the value 1 if the origin of the commercial law is the English Common law and 0 otherwise (Djankov et al 2007).
Logarithm of per capita income:	Natural logarithm of the income per capita in 1980 from the IMF's International Financial Statistics.
Education:	Number of years of schooling in 1980 from Glaeser et al (2004).
State ownership of press:	Fraction of the top five daily newspapers owned by the government, from Djankov et al (2003).
Cost of entry:	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).
Rule of law:	Assessment of the law-and-order tradition in the country based on the strength and impartiality of the legal system, and of popular observance of the law in 1980 (from International Country Risk Guide). It is scaled to range between 0 and 1.
Anti-director rights:	Index produced by La Porta et al (1998) (the sum of six dummy variables, indicating if proxy by mail is allowed, shares are not blocked before a shareholder meeting, cumulative voting for directors is allowed, oppressed minorities are protected, the percentage of share capital required to call an extraordinary shareholder meeting is <10%, and existing shareholders have preemptive rights at new equity offerings) and corrected by Djankov et al (2007).
Creditor right:	Index produced by La Porta et al (1998): The sum of four dummy variables, indicating if creditor's consent is required to file for reorganization, there is no bankruptcy procedure with automatic stay, absolute priority is respected in liquidation, and the debtor does not have control over the assets pending a reorganization.
Effective investor protection:	Sum of anti-director and creditor rights, multiplied by rule of law, as defined above.
Accounting standards:	Index created by the Center for International Financial Analysis and Research to rate the quality of 1990 annual reports on their disclosure of accounting information, from La Porta et al (1998).
Financial development:	Sum of stock market stock market capitalization over GDP in 1980 (Rajan and Zingales 1998) and domestic credit to private sector over GDP in 1980 (Beck, Demirguk-Kunt, and Levine 1999).
Openness:	Sum of import and export as a fraction of GDP in 1980 from Penn World Tables.

Table 2. Summary statistics

This table presents means, medians, standard deviations, minimums, and maximums for all variables used in the paper. The variables are defined in Table 1.

	Mean	Median	Std.Dev.	Min.	Max.	No. Obs.
A. Country/industry-level variables						
No. firms (% of total in the country)	2.678	1.238	3.607	0.024	22.865	1146
Entry (% change)	2.940	1.421	7.520	-19.493	40.412	1146
B. Country-level variables						
Newspaper circulation	0.193	0.133	0.165	0.012	0.574	48
Democracy score	6.170	8	4.198	0	10	47
Democracy dummy	0.667	1	0.476	0	1	48
Executive constraints	0.450	0.569	0.351	0	0.890	47
Common law	0.354	0	0.483	0	1	48
Per capita income	5,438	3,895	4,846	240	18,590	48
Income inequality	39.16	37.16	9.09	24.9	62.3	48
Education	6.154	6.006	2.637	1.737	11.91	48
State ownership of press	0.069	0	0.213	0	0.94	45
Creditor rights	2.125	2	1.16	0	4	48
Anti-director rights	2.8	3	0.894	1	4	45
Rule of law	0.649	0.667	0.290	0.167	1	48
Effective investor protection	3.374	3	1.786	0.5	7	45
Cost of entry	0.378	0.321	0.281	0.017	1.170	48
Financial development	1.418	1.400	0.750	0.409	3.384	36
Openness	65.52	53.3	58.46	16.7	423.4	37
Accounting standards	61.07	62	13.84	24	83	31
C. Industry-level variables						
External dependence	0.672	0.664	0.653	–1.535	2.058	34
Growth opportunity	0.050	0.049	0.031	–0.033	0.120	39

Table 3. Competition and its determinants.

The dependent variable is the median number of firms in a sector as a fraction of the total number of firms in a country. The independent variables are several interaction terms obtained by multiplying external dependence (which measures the industry dependence on external capital) with country-level variables: effective investor protection, financial development, accounting standards, cost of entry, openness and per capita income. All regressions include fixed effects for countries and industries (not reported). *, **, *** indicate significance at 10, 5, 1 percent respectively. The standard errors shown in brackets are adjusted for heteroskedasticity using Huber-White correction.

	(1)	(2)	(3)	(4)	(5)	(6)
External dependence ×						
Effective investor protection	0.089***					
	[0.030]					
Financial development		0.252***				
		[0.084]				
Accounting standards			0.014***			
			[0.004]			
Cost of entry				-0.339*		
				[0.206]		
Openness					0.003*	
					[0.002]	
Log per capita income						0.103**
						[0.044]
No. observations	1048	1019	930	1048	1048	1048
R^2	0.682	0.701	0.686	0.682	0.682	0.682

Table 4. Effective investor protection and accounting standards.

The dependent variable is the median number of firms in a sector as a fraction of the total number of firms in a country. The independent variables are several interaction terms obtained by multiplying external dependence (which measures the industry dependence on external capital) with country-level variables: effective investor protection, accounting standards, financial development, cost of entry, openness and per capita income. All regressions include fixed effects for countries and industries (not reported). *, **, *** indicate significance at 10, 5, 1 percent respectively. The standard errors shown in brackets are adjusted for heteroskedasticity using Huber-White correction.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
External dependence ×									
Effective investor protection	0.058*	0.068**	0.072*						
	[0.035]	[0.030]	[0.041]						
Accounting standards				0.010**	0.011***	0.009*			
				[0.005]	[0.004]	[0.005]			
Financial development							0.201**	0.189**	0.231**
							[0.088]	[0.085]	[0.095]
Cost of entry	-0.229			-0.210			-0.285		
	[0.228]			[0.236]			[0.193]		
Openness		0.003			0.003			0.002	
		[0.002]			[0.002]			[0.002]	
Log per capita income			0.037			0.095			0.021
			[0.061]			[0.066]			[0.050]
No. observations	1048	1048	1048	930	930	930	1019	1019	1019
R^2	0.682	0.682	0.682	0.687	0.687	0.687	0.702	0.702	0.701

Table 5. Robustness: Growth opportunities.

The dependent variable is the median number of firms in a sector as a fraction of the total number of firms in a country. The independent variables are several interaction terms obtained by multiplying growth opportunities (which measure the growth rate of value added by industry in the USA) with country-level variables: effective investor protection, accounting standards, financial development, cost of entry, openness and per capita income. All regressions include fixed effects for countries and industries (not reported). *, **, *** indicate significance at 10, 5, 1 percent respectively. The standard errors shown in brackets are adjusted for heteroskedasticity using Huber-White correction.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Growth opportunity ×									
Effective investor protection	1.915*	2.141**	2.401*						
	[1.012]	[0.913]	[1.234]						
Accounting standards				0.154	0.233**	0.176			
				[0.145]	[0.106]	[0.150]			
Financial development							1.422	1.892	0.654
							[2.288]	[2.424]	[2.375]
Cost of entry	-0.63			-4.311			-0.858		
	[6.324]			[6.799]			[6.883]		
Openness		-0.015			-0.01			-0.009	
		[0.031]			[0.029]			[0.032]	
Log per capita income			-0.884			0.909			0.949
			[2.118]			[2.409]			[1.694]
No. observations	1146	1146	1146	1017	1017	1017	1114	1114	1114
R^2	0.653	0.653	0.653	0.678	0.678	0.678	0.669	0.669	0.669

Table 6. Robustness: Entry.

The dependent variable is entry. The independent variables are several interaction terms obtained by multiplying external dependence (which measures the industry dependence on external capital) with country-level variables: effective investor protection, accounting standards, financial development, cost of entry, openness and per capita income. All regressions include the median number of firms (as a fraction of total number of firms in the country), fixed effects for countries and industries (not reported). *, **, *** indicate significance at 10, 5, 1 percent respectively. The standard errors shown in brackets are adjusted for heteroskedasticity using Huber-White correction.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
External dependence ×									
Effective investor protection	0.273*	0.335**	0.219						
	[0.147]	[0.140]	[0.149]						
Accounting standards				0.039*	0.041**	0.035			
				[0.020]	[0.019]	[0.024]			
Financial development							0.452	0.715**	0.429
							[0.365]	[0.344]	[0.422]
Cost of entry	-0.685*			-0.388			-1.929*		
	[0.402]			[0.357]			[1.065]		
Openness		0.004*			0.004			0.003	
		[0.002]			[0.002]			[0.003]	
Log per capita income			0.317			0.208			0.368
			[0.223]			[0.267]			[0.268]
No. observations	1048	1048	1048	930	930	930	1019	1019	1019
R^2	0.498	0.497	0.498	0.547	0.547	0.547	0.5	0.498	0.499

Table 7. Determinants of investor protection.

The dependent variable is effective investor protection. *, **, *** indicate significance at 10, 5, 1 percent respectively. All regressions include a constant which is not reported. The standard errors shown in brackets are adjusted for heteroskedasticity using Huber-White correction.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Democracy score	0.189***	-0.017						
	[0.052]	[0.054]						
Democracy dummy			1.106**	-0.217				
			[0.528]	[0.407]				
Executive constraint					2.582***	-0.083		
					[0.559]	[0.682]		
Newspaper circulation							8.290***	6.360***
							[0.810]	[1.179]
Common law dummy	0.883*	1.475***	1.320**	1.508***	0.973**	1.452***	1.191***	1.300***
	[0.483]	[0.424]	[0.546]	[0.427]	[0.472]	[0.425]	[0.340]	[0.361]
Income inequality		-0.040**		-0.041**		-0.040*		-0.016
		[0.019]		[0.019]		[0.021]		[0.021]
Log per capita income		0.917***		0.925***		0.895***		0.272
		[0.199]		[0.169]		[0.189]		[0.189]
No. obs	44	44	45	45	44	44	45	45
R^2	0.283	0.569	0.18	0.581	0.344	0.569	0.688	0.707

Table 8. Newspaper circulation, state ownership of the press and education.

*, **, *** indicate significance at 10, 5, 1 percent respectively. All regressions include a constant which is not reported. The standard errors shown in brackets are adjusted for heteroskedasticity using Huber-White correction. Column (5) reports the second stage regression where state ownership of the press and education are used as instrument for newspaper circulation.

	(1)	(2)	(3)	(4)	(5) – IV
Newspaper circulation		8.501***		7.883***	8.731***
		[0.895]		[1.338]	[1.383]
Common law dummy		1.179***		1.175***	1.240***
		[0.371]		[0.333]	[0.360]
State ownership of press	-2.891**	-0.67			
	[0.672]	[0.405]			
Education			0.399***	0.037	
			[0.081]	[0.099]	
No. observations	42	42	45	45	42
R^2	0.109	0.695	0.344	0.689	0.689

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