

# The Politics of Investor Protection and Competition

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January 2012

## Abstract

External finance is critical for less established entrepreneurs, so poor investor protection can hinder competition. We model how lobbying for weaker investor protection reduces access to finance and decreases competition in countries where politicians are less accountable to voters. Weaker accountability thus produces a smaller economic elite. As empirical support for this result, in a broad panel of countries, we find that countries with more accountable political institutions (as measured by higher newspaper circulation) have better investor protection (as measured by higher creditor rights). This result holds even after controlling for legal origin, per capita GDP, and country fixed effects, indicating that political accountability directly facilitates access to finance. Moreover, the number of producers and entry rates are positively correlated with newspaper circulation in more financially dependent sectors.

**JEL classification:** G21, G28, G32.

**Keywords:** Financial Development, Investor Protection, Entry, Competition, Lobbying.

**Acknowledgments:** Enrico Perotti is from University of Amsterdam; Paolo Volpin is from London Business School. We thank Bruno Biais, Ray Fisman, Nicola Gennaioli, Marco Pagano, Laura Veldkamp, Daniel Wolfenzon, Yishay Yafeh, and participants at seminars at Harvard University, Helsinki School of Economics, IMF, King's College University of London, London Business School, SOAS University of London, University of Amsterdam, University of Exeter, University of Michigan, and at the 2004 Endogenous Institutional Change workshop at Stanford, 2004 ESSFM in Gerzensee, 2004 EFA meeting in Maastricht, 2004 CEPR conference on Understanding Financial Architecture in Stockholm, 2005 AFA meetings in Philadelphia, and 2005 Workshop on Entry, Entrepreneurship, and Financial Development at the World Bank for useful comments.

# 1 Introduction

Limited access to finance is a serious barrier to entry and growth for less established or newer firms. While there may be many obstacles to entry, funding enables entrepreneurs to overcome generic barriers or constraints to growth. Thus limited access to finance (due to financial underdevelopment or limited competition across banks) hinders new firm creation and growth, as the evidence suggests (Rajan and Zingales 1998; Levine 1999; Beck, Levine, and Loyaza 2000; Black and Strahan 2002; Cetorelli and Strahan 2006; Aghion, Fally and Scarpetta 2007). As poor investor protection limits access to finance (La Porta et al, 1997, 1998), it also has the effect of reducing competition among firms.

Rajan and Zingales (2003a,b) argued informally that limited financial development may be the result of political influence to reduce competition. We model how established producers lobby for weak creditor protection to limit entry and provide supporting evidence making use of the cross-country variation in political accountability.

In our model, lower entry reduces welfare and makes politicians less popular, so the lobbying group needs to offer compensating contributions (“bribes”). The equilibrium level of investor protection (and thus competition) trades off the bribes versus the social cost of decreased competition. In equilibrium, higher political accountability increases lobbying costs and so increases entry and competition. Acemoglu (2008) makes a similar distinction on access to opportunities between democracy and autocracy. The implications are that investor protection, competition and entry should increase with greater political accountability.

On the empirical side, we show that – after controlling for legal origin – creditor protection is better in more politically accountable countries. We find an objective measure of accountability in the emerging literature on the role of the media (Stromberg, 2004; Besley and Prat, 2006). Media diffusion (commonly measured as daily newspaper circulation) appears important for dispersed agents to monitor the actions of incumbent politicians and induce policies responsive to citizens’ preferences (for a review, see Besley, Burgess, and Prat, 2002).<sup>1</sup> Media diffusion is correlated with education and measures of democracy, and is significantly lower when the media is politically captured (Djankov et al, 2003).

We show that the diffusion of newspaper readership performs extraordinarily well in explaining creditor protection. Interestingly, its effect appears complementary to legal origin. Financial access may reflect better economic opportunities created by other institutional factors. Yet, newspaper diffusion remains significant even when we control for per capita income (a natural measure of overall institutional quality) and when we control for country fixed effects. It is positively correlated with education and negatively with state ownership of the press, but its effect on creditor protection is not due to these variables. This is consistent with the diffusion of information being a strong proxy for the degree of informed private scrutiny on political decisions, which increases the political cost of captured regulation. This notion of political accountability echoes results on corporate governance. Diffusion of information via disclosure appears more effective at constraining managerial abuse than regulation (La Porta, Lopez-de-Silanes, and Shleifer, 2006).

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<sup>1</sup>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, 2008).

We explore next the lobbying explanation more closely. We find that countries with higher newspaper circulation have more intense competition in the product markets, and that access to finance plays a role: countries with more accountable politicians exhibit higher entry rates and higher density of producers in financially dependent industries. Our results are in line with evidence on high barriers to entry 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. Accordingly, we control for measures of direct entry barriers. These are indeed significant determinants of entry, but they do not subtract from the significance of newspaper circulation. The traditional view in finance (King and Levine, 1993) holds that the size of financial markets is enough to support growth and competition. However, we find that the interaction of financial dependence and financial development (capital market size) is never statistically significant when we control for newspaper circulation. The coefficient on newspaper circulation instead remains statistical significant in all specifications. These results indicate that the distribution of financial access is more important than the absolute size of financial intermediation. In this respect our finding is closely related to the literature on the costs of government control over financial markets. Work by Sapienza (2004), Dinc (2005), Kwaja and Mian (2005), Barth, Caprio and Levine (2006), and many others show that greater government involvement significantly distorts the flow of credit to firms, leading to corruption and inefficient allocation of resources.

Other political economy determinants of the degree of investor protection have been proposed. Bebchuk and Neeman (2010) argue that insiders lobby using cor-

porate resources to protect their control benefits. In a similar setup, Fulghieri and Suominen (2005) examine the role that capital structure plays in the relation between corporate governance and industry concentration. Our emphasis is on the role of political accountability as an endogenous barrier to entry and competition. Pagano and Volpin (2005) focus on the type of electoral rules and predict that higher investor protection is likely to emerge as a political outcome in countries with a majoritarian (as compared with a proportional) electoral rules. Perotti and Von Thadden (2006) argue that strong investor protection emerges in democratic countries when financial wealth is more diffused. We control for these alternative explanations in our empirical analysis. We find that the indicator of proportionality suggested by Pagano and Volpin (2005) is not significantly correlated with effective creditor protection and its inclusion as a control variable does not affect the significance of newspaper circulation. Using the Gini index of income inequality as an (imperfect) proxy for wealth inequality, we do find a negative correlation between income inequality and effective creditor protection, as suggested by Perotti and Von Thadden (2006). However, newspaper circulation emerges as the critical determinant of effective creditor protection. These results confirm that political accountability is an important determinant of investor protection.

Related work includes Krosner and Strahan (1999) on the political economy of banking regulation in the U.S. They show that deregulation occurred earlier in states where banks were relatively larger and firms more bank dependent. Along the same lines, Rajan and Ramcharan (2009) find that counties with very concentrated land holdings tend to have disproportionately fewer banks per capita in the 1920s. Benmelech and Moskowitz (2010) exploit variation in suffrage (a direct measure of political

accountability) across U.S. states in the XIX century. 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 more restrictive incorporation laws. Fogel, Morck, and Yeung (2008) 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. Caselli and Gennaioli (2008) study the differential effects of reforms aimed at reducing entry costs and improving the efficiency of financial markets (financial reform).

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 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  $\tilde{w}$  (apples) uniformly distributed on the support  $[0, I]$ . The representative consumer has an endowment of apples  $w_C$ .

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 in the numeraire. To simplify the analysis we allow for a negative consumption of apples.

A firm needs to invest  $I$  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  $\tilde{w}$  in their own company; and/or they can raise funds on the capital market as external finance (which we assume to be debt, for simplicity). We denote as  $d_k$  the face value of the debt of firm  $k$ . As an alternative investment opportunity, individuals can access a riskless investment technology that produces  $(1 + r)$  units of apples at  $t = 3$  for each apple invested at  $t = 0$ . Competition in the capital market ensures that the required rate of return on debt financing is  $r$  and we normalize  $r = 0$ . We assume that 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 ( $mW/2 + (1 - m)w_C > mI$ ). We also assume that the number of potential entrepreneur  $m$  is set to satisfy the free-entry condition that investing in the project is a positive NPV decision: this is satisfied by setting  $a - I = m$ .

## 2.1 Timeline

The timeline of the model is as described in Figure 1.

At  $t = 0$ , entrepreneurs form one pressure group to lobby politicians on the choice of the degree of creditor protection. 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 against future profits. Let  $L(\delta)$  be the schedule of political contributions as a function of the chosen level of investor protection  $\delta$ .

The impact of investor protection in the model is as follows: the incumbent entrepreneur can pledge up to a fraction  $\delta$  of the cash flows produced at  $t = 3$ . Hence,  $\delta$  affects the firm's ability to raise external capital. We refer for simplicity to  $\delta$  as creditor protection, as this will be our empirical proxy.

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

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

where  $\beta \in [0, 1]$  is a measure of the policymaker's benevolence (inclination toward the social welfare), and  $S(\delta)$  is the social welfare associated with creditor protection  $\delta$ , to be derived later. We take  $\beta$  to be a measure of politicians' accountability. In an autocratic country,  $\beta$  will be small because politicians are not accountable to voters. In a democratic country, politicians wish to be re-elected. Hence,  $\beta$  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 welfare 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 (this assumption

is relaxed in the extensions). Entrepreneurs can invest their personal wealth or raise external capital. Without loss of generality, we will refer to the external capital as debt.

At  $t = 3$ , the output of apple pies is produced. Before profits are distributed as dividends, the entrepreneur retains a fraction  $1 - \delta$  of them. Then, the market for apple pies opens, and the equilibrium price of apples pies  $p$  is determined. Individuals 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  $c$ ,

$$y_c = w_c \tag{4}$$

For the representative entrepreneur  $j$  with his own firm, there is an extra term:

$$y_j = w_j + (p - I) \tag{5}$$

where the second term  $(p - I)$  is the Net Present Value from investing in the production of apple pies.

## 2.2 Market equilibrium

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

At  $t = 3$ , each agent  $i$  maximizes the utility function (??) subject to the budget constraint (??). 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:  $k_i = y_i - p(a - p)$ .

With  $n$  active firms producing a single unit of output, the aggregate supply of apple pies is  $n$ , while its aggregate demand 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 (??), while the income of the representative (active) entrepreneur  $j$  is given in (??).

Proceeding backwards, at  $t = 2$ , entrepreneurs have limited ability to raise external capital because creditors rationally expect them to pay out only a fraction  $\delta$  of their output  $p$ . Hence, firm  $k$  faces the financing constraint  $d_k \leq \delta p$ . Using the results in Lemma 1, we can easily show that:

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

Here we obtain a first useful result:  $w(\delta)$  is strictly decreasing in the degree of creditor protection  $\delta$ . With better creditor 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 creditor 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  $[0, I]$ ,  $n = m \frac{I-w(\delta)}{I}$ .

Therefore, in equilibrium we have:

$$\begin{cases} w = I - (a - n)\delta \\ n = m(1 - w/I). \end{cases} \quad (6)$$

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

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

This is an important result: the degree of creditor protection  $\delta$  has a direct impact on the degree of competition and the total output in the economy. Specifically, higher creditor protection allows greater entry and production.

Higher creditor protection is also reflected in higher social welfare (since consumers prefer more competition). To see this, consider the indirect utility of representative consumer  $c$ . The indirect utility of the representative consumer  $c$  is:

$$V_c = w_c + 1/2 n^2. \quad (7)$$

Since  $V_c$  is increasing in  $n$  and  $n$  is increasing in  $\delta$ , then  $V_c$  is increasing in  $\delta$ .

The income of a representative (active) entrepreneur  $j$  given in (??) simplifies instead to  $y_j = w_j + (a - n - I)$ , where the second term is the net present value of the project (notice that the assumption that  $a = I+m$  and the fact that  $n \leq m$  ensure

that investment in the project is a positive NPV decision). Hence, entrepreneur  $j$ 's indirect utility is:

$$V_j = \begin{cases} w_j + 1/2 n^2 + (a - n - I) & \text{if } w_j \geq w(n) \\ w_j + 1/2 n^2 & \text{otherwise} \end{cases}. \quad (8)$$

It is easy to show that  $V_j$  is decreasing in creditor protection as long as  $j$  is an active entrepreneur, that is, if  $w_j \geq w(n)$ .<sup>2</sup> This reflects the fact that the profit decreases with the output produced. If instead  $j$  is not active ( $w_j < w(n)$ ),  $V_j$  is increasing in  $\delta$  because entrepreneur  $j$  is effectively a consumer.

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

$$S = (1 - m)w_c + m(I/2) + 1/2 n^2 + n(a - n - I), \quad (9)$$

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  $(a - n - I)$ , which is positive because  $n < m$  and  $a = I + m$ .

Since  $n$  is increasing in  $\delta$ , we obtain that:

**Lemma 4** *The social welfare is strictly increasing in creditor protection. The socially optimal level of creditor protection is  $\delta_S^* = 1$ .*

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

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<sup>2</sup>The derivative of the utility of an active entrepreneur with respect to the total supply of pies  $n$  is  $n - 1$ , which is negative since  $n \leq m < 0.5$ . Moreover,  $n$  is decreasing in creditor protection. Hence, the indirect utility of an active entrepreneur is strictly decreasing in  $\delta$ .

## 2.3 Political equilibrium

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

In our setting, the political outcome differs from the median voter's choice, because politicians who choose the quality of creditor protection law or their enforcement do not care only about social welfare but also about lobby contributions. Since there is a monotonic relationship between  $\delta$  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 as to maximize their objective function

$$\max_n (1 - \beta) L(n) + \beta S(n) \quad (10)$$

where  $L(n)$  is the schedule of political contributions as a function of the chosen production level,  $S(n)$  is the social welfare associated with a given  $n$ , and  $\beta$  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 welfare from a choice of production  $n < m$  is  $\Delta S(n) = S(m) - S(n)$ , to win the lobbyist must pay a contribution

$$L \geq \frac{\beta}{1 - \beta} \Delta S(n) = \frac{\beta}{1 - \beta} (m - n) [a - I - 1/2(m + n)] \quad (11)$$

Politicians will thus choose  $n < m$  if they are compensated for the associated reduction in social welfare. The lobbyist can effectively choose the desired competition level  $n$  by paying a political contribution  $\frac{\beta}{1-\beta} \Delta S(n)$ . 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 is given in equation (??), the sum of entrepreneurs' utility function is:  $m(I/2) + m1/2 n^2 + n(a - n - I)$ . The lobbyist solves the following optimization problem (where we have used the zero-profit condition  $a - I = m$ ):

$$\max_n m(I/2) + m1/2 n^2 + n(m - n) - \frac{\beta}{1 - \beta} (m - n) [m - 1/2(m + n)] \quad (12)$$

From the first order condition of this problem, we obtain the following result:

**Proposition** *The number of active entrepreneurs is*

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

*The corresponding level of creditor protection is:*

$$\delta = \frac{I}{(1 - m)(1 - \beta)a + I} \equiv \delta^*.$$

*This level of competition is achieved by paying a contribution schedule  $L(n)$  such that*

$$L(n) = \frac{\beta}{1-\beta} \frac{(m-n)^2}{2} \text{ if } n = n^* \text{ and } L(n) = 0 \text{ for any } n \neq n^*.$$

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 welfare) 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  $\beta$  increases, it becomes more costly for the lobby to choose a low level of creditor 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.

Similarly, we find that creditor protection is strictly increasing in political accountability. The intuition is that  $\beta$  increases competition, and more competition is only possible with better creditor protection (if one keeps the wealth distribution constant). Investor protection is at the optimal level ( $\delta = 1$ ) only if the policy-maker cares only about the social welfare ( $\beta = 1$ ) or if there are no consumers in the economy ( $m = 1$ ). In all other cases, creditor protection is suboptimal.

In Section 3, we test whether there is better creditor protection in countries where politicians are more accountable to society. To do so, we will use the measure of creditor protection developed by Djankov, McLiesh and Shleifer (2007) and propose several measures of political accountability. We will also test the effect of political accountability on competition and entry.

## 2.4 Discussion

Before proceeding to the empirical analysis, it is useful to notice that the assumption that entrepreneurs can form only one lobbying group is not needed for the results. One can obtain the same results using the “common agency” setup developed by Grossman and Helpman (1994). 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 equi-

libria, the policy maker chooses a policy  $\pi$  to maximize:

$$\sum_j W_j(\pi) + AW(\pi) \quad (13)$$

where  $W_j(\pi)$  is the indirect utility of the lobbyists and  $W(\pi)$  is the social welfare, and  $A \geq 0$  measures how much policymakers care about the social welfare. 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 policy choice is  $n$ , the number of active entrepreneurs. Second, the relative weight that politicians put on the social welfare  $A = \frac{\beta}{1-\beta}$ . Third, the indirect utility of the lobbyists is given in equation (??).

Hence,

$$\sum_j W_j(\pi) = \sum_j V_j(n) = m(I/2) + m1/2 n^2 + n(m - n) \quad (14)$$

Furthermore, the social welfare is in equation (??). Finally, to apply the result in Grossman and Helpman, we substitute in (??) the expression for the social welfare (??) and for the sum of the lobbyists' utility functions (??). Hence, the policy maker chooses  $n$  to maximize the following expression:

$$m(I/2) + m1/2 n^2 + n(m - n) - \frac{\beta}{1 - \beta} (m - n) [m - 1/2(m + n)] \quad (15)$$

which is identical to the objective function in (??). Hence, applying the Grossman-Helpman setup, one obtains the same identical results as in Proposition 1. 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 welfare.

### 3 Empirical Analysis

In this section, we test whether political accountability promotes competition via its impact on the quality of creditor protection. First, we analyze the relation between newspaper circulation and other proxies for political accountability and creditor protection, controlling for other institutional determinants, such as legal origin. Then, we also add controls for GDP per capita and country fixed effects. Finally, we study the relation between newspaper circulation and competition and entry across industries and countries.

#### 3.1 Data

The definitions of all the variables used in the analysis are in the Appendix, while summary statistics are reported in Table 1. We measure investor protection as effective creditor protection: the product of creditor rights, as reported in Djankov, McLiesh and Shleifer (2007), and rule of law (a measure of contractual enforcement developed by the International Country Risk Guide), rescaled so that it varies between 0 and 1. This variable captures the quality of investor protection as actually enforced by courts.

We use several proxies for political accountability. Our main indicator is newspaper circulation, which measures the number of daily newspapers sold every 1,000 inhabitants. The idea is that politicians are truly accountable to society when voters are informed enough to punish politicians who do not choose what is best for them. In doing so, we follow the literature on the role of the media in economic development (Stromberg, 2004; Besley and Prat, 2006). We collect this data from the World

Bank, the UNESCO and the Economist. We rescale our indicator so that it varies between 0 and 1.

A second proxy is democracy score, which measures the general openness of political institutions (from Polity IV). This indicator captures the idea that political accountability requires that voters have the power to replace politicians that they do not like. A third measure of political accountability is education: Better educated voters are likely to understand better when politicians do not maximize social welfare. Following Glaeser et al (2004), we measure the degree of education as the number of years of schooling from UNESCO. Finally, only when media are truly independent, voters are really informed about what politicians do. To capture this aspect of accountability, we use state ownership of the press, as measured by Djankov et al (2003).

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).

Recent political economy papers have suggested other explanations for investor protection. Pagano and Volpin (2005) predict that higher investor protection is likely to emerge as a political outcome in countries with a majoritarian (as compared with a proportional) electoral rules. Perotti and Von Thadden (2006) argue that strong investor protection emerges in countries where (and at times when) financial wealth is less concentrated. To control for these alternative explanations, we use the indicator of proportionality suggested by Pagano and Volpin (2005), which is defined as  $PR - PLURALTY - HOUSESYS + 2$ , where these indicators are drawn from the World Bank Database on Political Institutions. As a proxy for wealth inequality, we use the

Gini index of income inequality, as reported by the World Bank.

We collect all these variables for a large cross-section of countries at a 5-year interval from 1985 to 2005. The outcome is a panel of 488 observations for 104 countries. Because we have effectively a panel, we will also be able to control for country fixed effects and study how robust the relationship between investor protection and political accountability over time.

### **3.2 Determinants of investor protection**

Table 2 reports the correlation matrix among all variables used in the analysis. Most of them (with the exception of the proportionality index) are strongly correlated with effective creditor protection. Newspaper circulation and the logarithm of GDP per capita exhibit the highest correlation, 53 and 49 percent respectively. Countries with higher newspaper correlation and with greater per capita income are associated with higher creditor protection. More education is also correlated with higher creditor protection and so is more democracy. State ownership of the press and income inequality are instead negatively correlated with creditor protection.

There is a high degree of correlation among the explanatory variables. The logarithm of per capita GDP is highly correlated with newspaper circulation (72 percent), education (77 percent), state ownership of the press (62 percent), and democracy score (56 percent). Education is highly correlated with newspaper circulation (61 percent) and state ownership of the press (negative 59 percent) and democracy score (60 percent). Proportionality and income inequality are less correlated with the other variables. Proportionality is negative correlated with state ownership of the press (41 percent) and positively correlated with democracy (42 percent). Income inequality

is negatively correlated with newspaper circulation (54 percent) and GDP per capita (45 percent).

In Table 3, we analyze the relation between newspaper circulation and effective creditor protection, while controlling for year dummies and legal origin. In column 1, we confirm the positive correlation uncovered in the uni-variate results: a 10 percent increase in newspaper circulation is associated with a 6 percent increase in effective creditor protection. In columns 2 to 6, we add controls for state ownership of the press, education, democracy score, proportionality and income inequality. In all columns, the coefficient on newspaper circulation remains strongly statistically different from zero. In all cases but column 3, the size of the coefficient does not change from column 1, indicating that the economic significance of newspaper circulation is unaffected by the other variables. Interestingly, none of these variables appear statistically significant, again with the exception of education.

In column 3, where we control for education, the results are slightly different. The coefficient on newspaper circulation decreases by 25 percent in magnitude: a 10 percent increase in newspaper circulation is associated only to a 4.4 percent increase in effective creditor protection. A similar increase in education is associated with a 2.5 percent increase in effective creditor protection.

The findings in Table 3 are strongly consistent with the model, indicating that newspaper circulation is an important determinant of the degree of effective creditor protection. While this measure performs well in regressions, an important concern is whether newspaper circulation is simply a proxy for per capita GDP (a measure presumably correlated with the average institutional quality). To address this concern, Table 4 reports the correlation between effective creditor protection and newspaper

circulation while controlling for the logarithm of per capita GDP.

In column 1, we confirm that effective creditor protection is highly correlated with the logarithm of per capita GDP. In column 2, we add newspaper circulation. The coefficient on newspaper circulation is statistically significant and quite large: a 10 percent increase in newspaper circulation is associated only to a 4.4 percent increase in effective creditor protection. Surprisingly, the coefficient on per capita GDP is statistically different from zero only at the 10 percent level and becomes much smaller in magnitude, indicating that the relation between effective creditor protection and newspaper circulation is statistically stronger than the one between per capita GDP and effective creditor protection.

In column 3, we consider the explanatory power of education when combined with per capita GDP. Both coefficients are statistically different from zero and positive. However, when we add newspaper circulation, only the coefficient on per capita GDP is statistically different from zero. The economic significance of newspaper circulation is almost unaffected: a 10 percent increase in newspaper circulation is associated with a 4 percent increase in effective creditor protection.

All results so far control for year dummies and legal origin fixed effects, and report standard errors that are clustered at the country level (to correct for lack of independence within each country). However, these results may be driven by unobserved cross-sectional differences across countries. In column 6, we estimate the same specification as in column 2 while controlling for country fixed effects. This allows us to test whether changes in newspaper circulation within a country are associated with changes in effective creditor protection. Importantly, we find that the coefficient on newspaper circulation is positive and statistically different from

zero. The economic impact of a change in newspaper circulation is smaller than in the pure cross-sectional regression but still important: a 10 percent increase in newspaper circulation is associated with a 2.5 percent increase in effective creditor protection.

A further robustness check is provided in Table 5, where we run the specification in column 2 of Table 4 for each of the 5 years in our sample. Interestingly, we find that newspaper circulation is positively correlated with effective creditor protection in each of the five years. The economic significance of the coefficient varies from a low of 0.356 in 2005 to a high of 0.602 in 1985.

To conclude the finding in column 6 of Table 4 is very important as it is obtained while controlling for country fixed effects and per capita GDP. The country fixed effects allow to control for a large set of omitted variables which are constant within a country, thus alleviating concerns of spurious correlation. The addition of per-capita GDP allows to control for general economic conditions and the average quality of institutions.

These results on the role of the media 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, Lopez-de-Silanes, and Shleifer, 2006).

### **3.3 Determinants of competition and entry**

We now turn to the analysis of the effect of our proxy for accountability. Adopting the methodology in Rajan and Zingales (1998), we test whether countries with higher newspaper circulation have higher entry rates and higher density of producers in

financially dependent industries. The cross-sectional differences across countries and industries should help identify the relation between competition (and entry) and political accountability.

Table 6 reports the summary statistics for the variables used in this part of the paper. We measure competition as the number of establishments in a sector over total number of establishments in the country, a measure of relative firm density across sectors. As an alternative measure, we consider entry, defined as the average annual percentage growth in the number of establishments during the 1982-1992 interval from UNIDO.<sup>3</sup> Our data covers a total of 1077 observations from 35 countries and 34 industries.<sup>4</sup> Because we have only a short time window and competition and entry is likely to change slowly over time, the tests do not exploit the time dimension of the UNIDO data, but rely only on differences across industries and countries. Hence, we use the data on newspaper circulation for 1985, financial development for 1980, and the cost of entry as estimated in 1999 by Djankov et al. (2002). We classify industries using the external dependence measure of Rajan and Zingales (1998). Since US data are used to compute this variable, they are excluded from the analysis.

Table 7 provides the results of regressing competition and entry on newspaper circulation interacted with financial dependence. In column (1), the number of firms is higher in sectors with greater financial dependence in countries with more news-

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<sup>3</sup>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.

<sup>4</sup>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, Malaysia, Mexico, Netherlands, New Zealand, Nigeria, Norway, Pakistan, Peru, Philippines, Portugal, Singapore, South Africa, Spain, Sri Lanka, Sweden, Turkey, UK, Venezuela, and Zimbabwe.

paper circulation. A similar result is obtained in column (4) for entry. Both support the postulated effect of accountability on competition. Next, we investigate the relative importance of newspaper circulation versus classic barriers to competition as measured by cost of entry. In columns (2) and (5), we show how this effect persists, even though there is clearly less competition and entry in countries with higher entry costs. Finally, we consider the traditional view that the size of financial markets support competition. In columns (3) and (6), we control for the interaction of financial dependence and financial development (capital market size). This interaction term is never statistically significant when we control for newspaper circulation. The coefficient on newspaper circulation remains statistical significant in all specifications but column (3). These results supports the view that political accountability, instrumented by the public awareness induced by newspaper readership and press freedom, has an important role to support domestic competition. Strikingly, it seems that the distribution of financial access is more important than the absolute size of financial intermediation.

## 4 Conclusion

This paper makes two important contributions. First, it models how the political choice over competition level emerges as a trade-off between the rents from restricting competition and the associated welfare cost. 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 funding is fungible to overcome generic obstacles to entry and expansion. As the political system becomes more accountable, lobbying to limit competition becomes expensive. As a result, the winning lobby seeks

less restrains on competition, admitting better enforcement of investor protection and thus greater scope of access to funding for less established producers.

Second, it provides evidence that creditor protection is correlated with political accountability, defined as the ability of informed citizens to constrain politicians. The positive impact of newspaper circulation on creditor protection is robust to the control for legal origin, GDP per capita, several other control variables and even country fixed effects. It also shows that more political accountability is associated with greater entry in sectors that depend more on external finance. 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 in raising capital.

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, Lopez-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 lim-

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

There are other reasons why politicians prefer lower investor protection regardless of lobbying by incumbents. In many countries politicians and incumbent firms owners are closely connected, further increasing the likelihood that entry and competition is undermined (Shleifer and Vishny, 1994). For instance, Khwaja and Mian (2005) show that in Pakistan politically-connected firms borrow 45 percent more and have 50 percent higher default rates than firms that are politically unconnected.

More work is needed on extending the political economy approach further. For instance, in our model, the access to finance is always suboptimal. However, it is possible that populist pressure may lead to excessive credit in the economy. Recent analyses of the 2007-2008 credit crisis have so argued (Mian, Sufi, and Trebbi, 2010): financial markets before the crisis produced excess access to finance for less credit-worthy consumers, and special interests may be at the source of this credit expansion.

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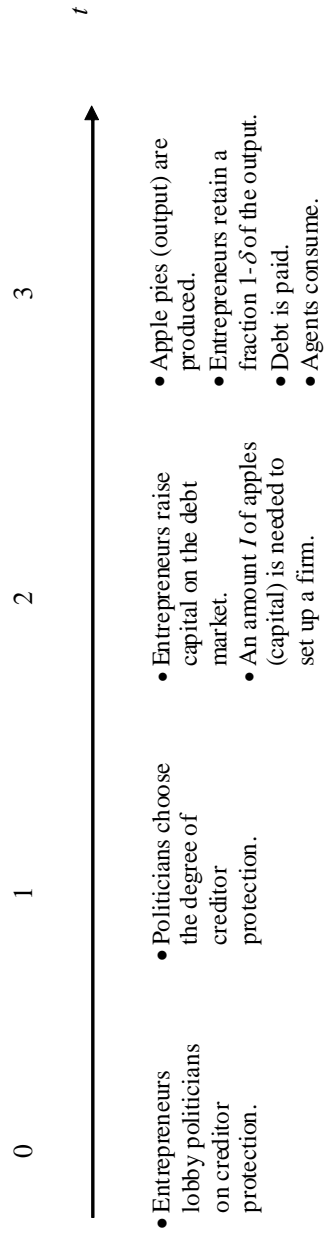
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Figure 1: Timeline.



## Appendix. Data Description

*Newspaper Circulation:* The number of daily newspapers sold per 1000 inhabitants scaled by 610 so that the maximum value is 1, UNESCO. For each of the years in the sample (1985, 1990, 1995, 2000, 2005), we use the most recent available data on newspaper circulation over the five preceding years.

*Effective Creditor Protection:* Product of Creditor Rights and Rule of Law scaled so that the maximum score is 1. This variable is available for each of the years in the sample. Creditor right is produced by Djankov, McLiesh and Shleifer (2007) assigning a one for each of the following: (i) there are restrictions, such as creditor consent or minimum dividends, for a debtor to file for reorganization; (ii) secured creditors are able to seize their collateral after the reorganization petition is approved, i.e. there is no "automatic stay" or "asset freeze"; (iii) secured creditors are paid first out of the proceeds of liquidating a bankrupt firm, as opposed to other creditors such as government or workers; and (iv) management does not retain administration of its property pending the resolution of the reorganization. Rule of law is an 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, International Country Risk (ICR).

*GDP Per Capita:* GDP per capita in US dollars, from Penn World Table, for each of the years.

*State Ownership of Press:* Fraction of the top 5 daily newspapers owned by the government, Djankov et al (2003). This data does not vary over time.

*Education:* Numbers of years of schooling, UNESCO Database, scaled by 16.7 so that maximum value is 1. This is computed for each of the years in the sample.

*Democracy Score:* Measure of the "general openness of political institutions". This measure is produced by Polity IV and is normalized to range between 0 and 1 (a greater value indicates more democracy). This is computed for each of the years in the sample.

*Proportionality:* The proportionality index is defined as in Pagano and Volpin (2005):  $PR - PLURALTY - HOUSESYS + 2$ , where the data are drawn from the World Bank Database on Political Institutions (WBDPI). This is computed for each of the years in the sample.

*Income Inequality:* Gini indicator of income inequality produced by the World Institute for Development Economics Research of the World Bank. For each of the years in the sample, we used the most recent available data over the five preceding years, using only the best quality data available.

*Legal Origin dummies:* Dummy variables for each legal family (English, French, German, Scandinavian and Socialist), Djankov et al. (2007). This variable is constant over time.

*Number of Firms:* Median number of establishments operating in a sector, as a percentage of the total number of establishments in the 1982-1992 period, from UNIDO.

*Entry:* Average annual percentage growth rate in the number of establishments operating in a sector in the 1982-1993 period, as reported by UNIDO.

*External Dependence:* Measure of the dependence on external capital for young firms as computed by Rajan and Zingales (1998).

*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).

*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, Demirgüç-Kunt, and Levine 1999).

**Table 1. Summary Statistics**

This table presents means, medians, standard deviations, minimums, and maximums for the variables used in the cross-country analysis of newspaper circulation. The variables are defined in the Appendix.

	Mean	Median	Std. Dev.	Min.	Max.	Obs.
Effective Creditor Protection	0.301	0.250	0.238	0	1	488
Newspaper Circulation	0.184	0.090	0.221	0.0003	1	488
GDP Per Capita	10,622	6,270	10,451	701	58,257	488
State Ownership of Press	0.240	0	0.369	0	1	349
Education	0.597	0.623	0.172	0.102	1	434
Democracy Score	0.565	0.700	0.403	0	1	429
Proportionality	1.52	2	1.29	0	3	412
Income Inequality	37.1	34.7	10.5	19.8	73.2	306

**Table 2. Correlation Matrix**

This table presents the matrix of correlations among all variables used in the paper. ECP stands for Effective Creditor Protection; News stands for Newspaper Circulation; Log(GDPPC) stands for Log (GDP Per Capita); State stands for State Ownership of Press; Educ stands for Education; Demo stands for Democracy score; and Prop stands for Proportionality. \*, \*\*, and \*\*\* indicate coefficients that are statistically different from zero at 10, 5 and 1 percent level, respectively.

	ECP	News	Log(GDPPC)	State	Educ	Demo	Prop
Newspaper Circulation	0.528***						
Log (GDP Per Capita)	0.486***	0.723***					
State Ownership of Press	-0.338***	-0.496***	-0.619***				
Education	0.438***	0.607***	0.769***	-0.594***			
Democracy Score	0.318***	0.500***	0.558***	-0.638***	0.601***		
Proportionality	0.050	0.262***	0.292***	-0.407***	0.293***	0.420***	
Income inequality	-0.341***	-0.542***	-0.446***	0.066	-0.361***	-0.243***	-0.136**

**Table 3. Effective Creditor Protection**

The dependent variable is effective creditor protection. All regressions include legal origin dummies and year dummies, which are not reported. \*, \*\*, and \*\*\* indicate coefficients that are statistically different from zero at 10, 5 and 1 percent level, respectively. Standard errors (in brackets) are clustered at the country level.

	(1)	(2)	(3)	(4)	(5)	(6)
Newspaper Circulation	0.616*** [0.121]	0.599*** [0.142]	0.440*** [0.130]	0.610*** [0.115]	0.632*** [0.129]	0.635*** [0.140]
State Ownership of Press		-0.035 [0.053]				
Education			0.252** [0.107]			
Democracy Score				0.029 [0.040]		
Proportionality					0.008 [0.015]	
Income Inequality						-0.001 [0.002]
Legal Origin FE	Yes	Yes	Yes	Yes	Yes	Yes
Year Dummies	Yes	Yes	Yes	Yes	Yes	Yes
Observations	488	349	434	429	412	225
Adjusted R <sup>2</sup>	0.401	0.435	0.406	0.410	0.397	0.417

**Table 4. Robustness: GDP per Capital and Country Fixed Effects**

The dependent variable is effective creditor protection. Regressions reported in columns (1) to (4) include legal origin and year dummies, which are not reported. The regression reported in column (5) includes year dummies and country fixed effects. \*, \*\*, and \*\*\* indicate coefficients that are statistically different from zero at 10, 5 and 1 percent level, respectively. Standard errors (in brackets) are clustered at the country level.

	(1)	(2)	(3)	(4)	(5)
Log (GDP per Capita)	0.202*** [0.045]	0.090* [0.051]	0.127** [0.054]	0.039 [0.061]	-0.020 [0.079]
Newspaper Circulation		0.440*** [0.149]		0.395*** [0.150]	0.246** [0.125]
Education			0.245* [0.144]	0.197 [0.129]	
Legal Origin FE	Yes	Yes	Yes	Yes	No
Country FE	No	No	No	No	Yes
Year Dummies	Yes	Yes	Yes	Yes	Yes
Observations	488	488	434	434	488
Adjusted R <sup>2</sup>	0.372	0.416	0.372	0.408	0.906

**Table 5. Robustness: Year-by-Year Regressions**

The dependent variable is effective creditor protection. All regressions include legal origin dummies, which are not reported. \*, \*\*, and \*\*\* indicate coefficients that are statistically different from zero at 10, 5 and 1 percent level, respectively. Standard errors (in brackets) are clustered at the country level.

	1985	1990	1995	2000	2005
Log (GDP per Capita)	0.023 [0.060]	0.105* [0.059]	0.083 [0.059]	0.097 [0.065]	0.117* [0.066]
Newspaper Circulation	0.602*** [0.191]	0.384** [0.177]	0.528*** [0.180]	0.402** [0.188]	0.356* [0.211]
Legal Origin FE	Yes	Yes	Yes	Yes	Yes
Observations	89	94	99	102	104
Adjusted R <sup>2</sup>	0.488	0.460	0.434	0.373	0.342

**Table 6. Summary Statistics for Industry-Level Analysis**

This table presents means, medians, standard deviations, minimums, and maximums for the variables used in the industry level analysis of the number of firms and entry. The variables are defined in the Appendix.

	Mean	Median	Std. Dev.	Min.	Max.	Obs.
Number of firms (%)	2.915	1.363	3.853	0.024	22.865	1077
Entry (%)	2.467	0.925	7.833	-19.492	40.412	1077
External dependence	0.672	0.664	0.653	-1.535	2.058	34
Cost of Entry	0.475	0.374	0.489	0.017	2.714	35
Financial Development	1.379	1.328	0.779	0.409	3.384	34

**Table 7. Newspaper Circulation, Number of firms and Entry**

The dependent variable is the median number of firms in a sector in columns (1) to (3) and entry in columns (4) to (6). The independent variables are several interaction terms obtained by multiplying external dependence (which measures the industry dependence on external capital) with country-level variables: newspaper circulation, cost of entry and financial development, as defined in Table 6. 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 correction and clustering at the country level.

Dependent variable:	Number of firms			Entry		
	(1)	(2)	(3)	(4)	(5)	(6)
External dependence x Newspaper Circulation	0.001*** [0.000]	0.001* [0.000]	0.001 [0.000]	0.004*** [0.002]	0.004** [0.001]	0.004** [0.002]
External dependence x Cost of entry		-0.230** [0.086]			-0.498 [0.418]	
External dependence x Financial development			0.167 [0.120]			0.399 [0.371]
Country FE	Yes	Yes	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	1077	1077	1048	1077	1077	1048
R <sup>2</sup>	0.672	0.672	0.687	0.469	0.469	0.471