

Investor Protection and Interest Group Politics*

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Abstract

We model how lobbying by interest groups affects the level of investor protection. In our model, insiders in existing public companies, institutional investors (financial intermediaries), and entrepreneurs who plan to take companies public in the future, compete for influence over the politicians setting the level of investor protection. We identify conditions under which this lobbying game has an inefficiently low equilibrium level of investor protection. Factors that operate to reduce investor protection below its efficient level include the ability of corporate insiders to use the corporate assets they control to influence politicians, as well as the inability of institutional investors to capture the full value that efficient investor protection would produce for outside investors. The interest that entrepreneurs (and existing public firms) have in raising equity capital in the future reduces but does not eliminate the distortions arising from insiders' interest in extracting rents from the capital public firms already have. Our analysis generates testable predictions, and can explain existing empirical evidence, regarding the way in which investor protection varies over time and around the world.

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1. Introduction

It is now well recognized that the legal rules that govern corporate law matter a great deal for the economy. There is a large body of both empirical and theoretical literature that suggests that a country's level of investor protection has a substantial effect on the value of firms, the development of stock markets, and economic growth (see, e.g., the survey by La Porta et al. (2000)).

Because insufficient investor protection can be costly for an economy's performance, it is important to understand what determines the level of investor protection and the reason that such protection might fall short of being optimal. Why do countries vary so much in their level of investor protection? Why do levels of investor protection within any given country change over time? When investor protection is too low, is such suboptimality generally due to insufficient understanding by public officials, which should be expected to disappear as officials become more knowledgeable about which governance arrangements are optimal? Or are there some structural political impediments that might enable excessively lax corporate rules to persist even after they are recognized to be inefficient?

The aim of this paper is to contribute to an understanding of the answers to these questions by developing a model of how interest group politics affects the level of investor protection. To be sure, a country's level of investor protection might be influenced by long-standing factors such as the country's legal origin (La Porta et al., 1998; Glaezer and Shleifer, 2003), culture and ideology (Roe (2003), Allen (2005)), or the religion of its population (Stulz and Williamson, 2003), all of which lie outside the realm of current interest group politics. However, given that countries do change their investor protection arrangements considerably over time, the level of investor protection at any point in time might also at least partly be the product of recent decisions by public officials. We seek, in this paper, to contribute to understanding these decisions.

In particular, we focus on analyzing how politicians' decisions about investor protection are affected by interest group lobbying. We view lobbying on investor protection as important because, in the ordinary course of events, most corporate issues are intensely followed by the interest group with sufficient stake and expertise but are not sufficiently understood and salient to most. When this is the case, politicians cannot expect their investor protection decisions to have a large direct effect on voting behavior, which implies that voters do not typically affect politicians' investor protection decisions by much. In contrast, politicians' investor protection decisions might still be significantly affected by the influence activities of organized interest groups.

The politicians' choices in which we are interested are those determining the level of investor protection in publicly traded firms. This level of investor

protection determines the extent to which “corporate insiders” -- managers and controlling shareholders who have some control over corporate decisions -- can extract private benefits of control. The laxer the corporate governance system, the larger these private benefits of control. Beyond a certain point, any further weakening of investor protection is inefficient. Assuming that politicians do recognize the efficient level of investor protection, we focus on the question of whether they will generally choose to set investor protection at this efficient level.

In our model, three organized interest groups compete for influence over the politicians who determine the level of investor protection. The first group, which benefits from rules that are laxer than optimal, consists of the corporate insiders of existing firms. The second group is made up of institutional investors (financial intermediaries) that use funds received from individuals to invest in public companies, and whose interests might overlap with those of "outsider" shareholders in existing companies. The third group consists of owners of private firms (“entrepreneurs”) who plan to take them public. We also allow for the possibility of insiders who plan to raise equity capital for their existing public firms (or for new firms that they will take public) and thus have interests that partly overlap with those of the entrepreneurs. We assume that individual investors, who invest in publicly traded firms either directly or indirectly through institutional investors, are too dispersed to become part of an effective organized interest group with respect to investor protection.

We identify and study the equilibrium outcome of the lobbying game between the interest groups and the politician setting the level of investor protection (for simplicity we assume that this choice is made by a single politician). Our analysis identifies factors that might lead to inefficiently low levels of investor protection and excessive private benefits of control. First, corporate insiders may be able to use some of the resources of the publicly traded companies under their control in order to influence politicians. These insiders have the power to direct their firms’ campaign contributions, to offer politicians’ relatives or associates positions or business, to use their standing to support positions and causes the politician seeks to advance, and so forth. Because insiders capture the full benefits of lobbying by their public firms for lower levels of investor protection, while their firms’ (and in turn, other shareholders in their firms) bear some of the costs of such lobbying, insiders have an advantage in the competition for influence over politicians. To win extra private benefits of control, insiders will be willing to spend more resources than the value of these extra benefits to them. Essentially, insiders’ lobbying is partly done at the expense of outside shareholders.

Furthermore, institutional investors can be expected to invest in lobbying against weak investor protection less than would be optimal for the class of outsider investors as a whole. While institutional investors have to personally bear

the costs of lobbying themselves, they capture only part of the benefits to outside investors resulting from improved investor protection. To begin, some investors hold shares in companies directly, not through institutional investors. Furthermore, depending on their relationship with their own investors, some institutional investors (for example, mutual fund managers) may capture only a fraction of increases in the value of the portfolios they manage that better investor protection would produce. As a result, to obtain a given improvement in investor protection, institutional investors will be willing to spend less than the total benefit that this improvement will produce for outside shareholders.

Another way of seeing the problems we identify is to recognize the existence of an externality. The parties in the lobbying game – corporate insiders, institutional investors, and the politician -- are not the only ones affected by weak investor protection. Individual investors that invest in existing public firms either directly or indirectly through institutional investors are also adversely affected. These investors are adversely affected by politicians' setting of low levels of investor protection and by insiders' using corporate resources to influence politicians. However, because such individuals are not present at the table, as it were, this negative externality is not fully taken into account in the lobbying game, and the produced level of investor protection is consequently too low.

The problems we identify do not go away when the lobbying game includes entrepreneurs (and existing public firms) that expect weak investor protection to make it more costly for them to raise equity capital in the future. The entrepreneurs have a preference for an efficient level of investor protection, and their introduction into the model moderates – but is shown not to eliminate -- the bias in favor of excessive private benefits of control. While entrepreneurs do internalize the interests of those public investors who will buy shares from them when they take their firms public, they do not internalize, and neither does anyone else at the lobbying table, the interests of individuals that directly or indirectly hold shares in existing public firms and who are not at the table.

In an economy with existing public firms, choices of investor protection levels affect not only the allocation of cash flows from the capital that will be raised from public investors in the future but also the allocation of rents from the capital that public firms already have (Bebchuk and Roe (1999), La Porta et al. (2000), Stulz (2005)). The struggle over these rents, however, need not necessarily lead to an inefficient outcome. As a matter of fact, lobbying leads to an efficient outcome if those lobbying on behalf of insiders and outside shareholders fully internalize the costs and benefits to all shareholders. When such internalization does not fully occur due to one or more of the factors we analyze, the fight over these rents distorts the outcome of the lobbying game, and produces suboptimal investor protection levels even in the presence of entrepreneurs lobbying for efficient rules.

We show that the framework we develop permits the incorporation and analysis of many additional factors. In particular, we show how our analysis can be extended and applied to analyze the effects of raising of new capital by existing public firms or by private firms owned by the insiders of such firms, institutional investors that are themselves a publicly traded company or a conglomerate with publicly traded elements, and institutional arrangements that make it more difficult to change investor protection levels often.

While much of our analysis focuses on the effects of interest group lobbying, we also broaden the analysis to allow for some corporate issues to become salient enough to have significant direct influence on individual investors' voting decisions. The ordinary pro-insider operation of interest group politics can, every now and then, be interrupted by pro-investor reforms resulting from a wave of corporate scandals or a stock market crash that makes a large number of individual investors sufficiently engaged that their voting decisions could be affected by politicians' failure to improve investor protection. The strength of this effect would depend on the size of the investor class, and also, importantly, on the extent to which events and their coverage by the media contribute to the salience of corporate governance problems. In the US, such an effect is evidenced by the adoption of the securities laws of 1933 and 1934 following the crash of 1929, and again by the passage of the Sarbanes-Oxley Act following the burst of the stock market bubble and the Enron and WorldCom scandals took place under such circumstances. At such times, the normal operation of interest group lobbying was supplemented by or perhaps even took a back seat to pressures from the public at large.

Our model generates a wide range of testable predictions about the relationship between the levels of investor protection and various factors. Our results have bearing both on the change in the level of investor protection over time and around the world. These results can shed some light on patterns identified by the existing empirical work as well as provide basis for future empirical work.

One important pattern established by the evidence is the positive correlation between high levels of investor protection and good economic outcomes such as a well developed stock markets and higher levels of economic growth (see, e.g., La Porta et al. 1998, 1999a, 1999b). One possible interpretation of this correlation is that higher levels of investor protection bring about such good economic outcomes. Our results indicate, however, that some of the causality might go in the opposite direction: a high level of investor protection may be, at least partly, the product of, rather than the cause of, high economic growth, a developed stock market, or an economy in an advanced stage. This effect might be partially responsible for the observed correlation between investor protection and economic and capital markets growth.

Our work complements other work that seeks to model the political forces shaping investor protection. Pagano and Volpin (2005a, 2005b), Perrotti and Von-Thadden (2006), and Roe (2005) present voting models in which investor protection is shaped by voting decisions. In contrast, our focus is on how investor protection is affected by the lobbying activities. Because voters usually pay little attention to most investor protection issues most of the time, such activities might play a key role. Moreover, because corporate insiders directly control a small fraction of the electorate's votes, these models focus on the possibility of a coalition between insiders and stakeholders against outside shareholders (Pagano and Volpin (2005a) and Perrotti and Von-Thadden (2006) or a coalition between insiders and outside shareholders against stakeholders (Roe, 2005). In contrast, we focus on the many aspects of investor protection that affect insiders and outside shareholders rather than stakeholders more generally..

Perrotti and Volpin (2007) model interest group activities and focus, in the spirit of Rajan and Zingales (2003), on the conflict of interest between established and new firms with respect to the level of investor protection. In their model, incumbent firms lobby to keep investor protection low so as to discourage entry by new firms that could dissipate the rents the incumbents are making in imperfectly competitive product markets. In contrast, we focus on the interest that insiders of existing firms have in extracting private benefits from the capital they control at the expense of their outside investors. We put aside entry-deterrence interests by assuming that the profits of existing firms are not affected by entry of new firms, and we show that insiders' interest in extracting rents from the capital in place is by itself a force pushing toward sub-optimal investor protection.¹

In developing our model, we use the analytical framework developed by Grossman and Helpman (1994) on the basis of the common agency model developed by Bernheim and Whinston (1986). This framework has been used to study various political economy issues, such as trade policy (Grossman and Helpman, 1996; Dixit et al., 1997)), taxation (Marceau and Smart, 2003), and environmental regulation (Yu, 2005). Our model incorporates some elements not existing in the models of other contexts, such as the ability of one organized group (corporate insiders) to use resources that belong to another group to finance its influence activities, and agency problems on the part of members of an organized interest group (the institutional investors group).

The rest of this paper is organized as follows. In Section 2, we present the basic model. Section 3 is devoted to the characterization of equilibrium outcomes

¹ In a recent *Journal of Economic Literature* survey, Morck et al. (2005) stress the importance of developing formal political economy models of corporate governance arrangements and view this task as “a fascinating uncharted territory for creative theorists.” Our model formally develops some of the elements they view as important for such a model to take into account.

in the basic model. Section 4 extends and generalizes the analysis in various ways. Section 5 presents and discusses the predictions generated by our model and how they can shed light on existing evidence as well as provide a basis for future empirical work. Finally, Section 6 offers concluding remarks.

2. Model

2.1. The Economy

Our basic premise is that the choices that public officials make with respect to investor protection matter. Of course, there are some who believe that, no matter what legal rules and politicians' choices are, firms can always provide themselves with optimal investor protection by adopting appropriate arrangements in their charters (or listing on a foreign exchange (Reese and Weisbach (2002))).² If one were to believe that firms from countries with inadequate investor protection could always provide optimal investor protection privately by taking such actions, then politicians' choices in this connection would be irrelevant and would not merit analysis. Under a widely held view, however, which underlies our analysis, private action by firms can improve matters but cannot perfectly substitute for the state's contribution to investor protection through its rules and enforcement, and politicians' choices with respect to investor protection are thus important.³

Another basic assumption we make is that politicians can change the level of investor protection from time to time. That is, investor protection is not set once and for all, before the creation of a country's public equity markets. The rules and government institutions and practices that shape investor protection in the US, UK, Germany, France, and many other advanced economies are not written immutably into the constitutions of these countries. They evolve and change substantially over time. Even when rules do not change for some time, this might be due to implicit decisions by public officials to retain existing rules.

Our interest is in studying a special, but clearly common and important, type of economy: an economy with public firms and institutional investors. Although this type of an economy is only one of those theoretically conceivable, it is of course a very important type for practical purposes because so many economies

² While a firm headquartered in one country and listed on an exchange in another country would not be subject to all the other country's investor protection rule, the firm could take the extra step of reincorporating in the other country. Such a step, however, would usually have tax consequences that a mere foreign listing would not involve.

³ See, e.g., Glazer et al. (2002). The evidence that the development of stock markets is correlated with the investor protection provided through legal rules and public enforcement is of course consistent with this view.

around the world are of this type. We put aside the question of what legal rules led to or facilitated the creation of such an economy in the first place. Our interest is in understanding how the levels of investor protection evolve in such economies.

We therefore study an infinite-horizon economy with public firms and institutional investors in which choices about the level of investor protection are made periodically. In each period, interest groups compete for influence over politicians that set investor protection until the next period in which politicians (whether the same or others) may make changes in investor protection levels. To the extent that political choices about investor protection levels have long-lasting consequences and are difficult to reverse until a substantial time has passed, each period can be thought as lasting a long time. We wish to study the nature of the equilibrium of the interest group game in such an economy.

We consider a representative period in the life of such an infinite-horizon economy with public firms. In every period, the sequence of events is as follows:

- In the beginning of the period there is already a stock of N public firms that have raised capital from outside investors in preceding periods.
- Interest groups compete for influence over the politician, and
- The politician then sets the level of investor protection.
- After that, against the background of the chosen level of investor protection, more capital is raised from outside investors. Specifically, entrepreneurs take M more firms public (or insiders raise more capital for existing public firms).
- Finally, at the end of the period, public firms produce cash flows and private benefits that are the product of the chosen level of investor protection.

By determining investor protection levels we refer throughout not only to the choice of the legal rules of corporate and securities law, but also to the extent to which these rules are enforced, the extent to which rules and government institutions permit and facilitate private efforts to enforce these rules, and so forth. The chosen investor protection level affects the payoffs at the end of this period to corporate insiders, outside shareholders, institutional investors, and politicians.

Note that while the level of investor protection will change the terms under which capital will be raised by new firms, we are assuming that the number of firms entering the market will not be affected. We thus abstract from entry-deterrence issues that are stressed by Rajan and Zingales (2003) and Perrotti and Volpin (2007). Including this effect in our analysis would further reinforce the distortion in favor of excessively lax investor protection.

Below we spell out in detail our assumptions concerning the players and the process of competition for influence over political choices

2.2. Insiders, Outsiders, and Entrepreneurs

In the beginning of the period, there are N firms that raised capital from outside investors in the past. We assume for simplicity that the N public firms in the economy are all identical. In every period, each firm generates a stream of benefits that has value $V > 0$. Each firm has an “insider” who possibly holds a majority of the shares and who controls its decision-making. If the firm has a controlling shareholder, then this controlling shareholder may be thought of as the insider. If the firm's shares are dispersed, then the firm's manager may be thought of as the insider. The insider is assumed to hold a fraction $\alpha < 1$ of the firm's shares.

In addition to the capital already raised, we assume that additional capital is raised from outside investors during the considered period. One can contemplate three types of capital raising. First, entrepreneurs -- owners of private firms not affiliated with the current insiders -- may take their firm public. Second, the existing insiders may take additional firms public. Third, the firms controlled by the current insiders might raise additional capital. As will be discussed in Section 3, these three cases affect the results in a similar way. Therefore, for concreteness, we will assume initially the first case -- that is, the presence of entrepreneurs that plan to take their firms public.

Let us now turn to the outside investors that hold a fraction $1 - \alpha$ of the equity of each public firm. We assume that agents in the economy hold diversified portfolios -- either directly or through institutional investors. We denote the fraction of outsiders' shares that are held through institutional investors by $\beta \in (0, 1]$. All other shares are held directly by small individual investors. Thus, institutional investors hold a proportion $\beta(1 - \alpha)$ of each firm's shares, and small investors directly hold a proportion $(1 - \beta)(1 - \alpha)$. In U.S. capital markets, institutional investors -- including mutual funds, pension funds, hedge funds and other money managers, insurance companies, and banks -- hold over 50% of the shares of all public firms.

The payoff of institutional investors is increasing in the value of the portfolios of shares of public companies they hold. However, the arrangements between institutional investors and their own investors require them to pass on to their investors at least some of the gains from these portfolios. We assume that institutional investors have linear contracts with their own investors that enable them to get $\mu \in (0, 1)$ times their share of the cash that is generated by the firms in which they invest. The parameter μ may vary of course greatly across

institutional investors; in the US, for example, figures in the range of 1%-3% are typical for mutual funds while figures in the range of 20%-30% are typical for hedge funds.

2.3. Investor Protection

The level of investor protection determines the constraints that insiders face in running the firm and consequently also the size of the private benefits of control they can capture. Private benefits include all the monetary and non-monetary benefits that flow to insiders by virtue of their control. Such benefits could include diversion of cash through self-dealing transactions or diversion of corporate opportunities, profits from trading on inside information, excessive compensation, and so on. We suppose, for simplicity, that the laxity of corporate legal investor protection can be described by a single number, which we denote by $\lambda \geq 0$.⁴ A higher λ corresponds to laxer corporate legal rules, which translate into weaker investor protection, higher private benefits of control for insiders, which we denote by $b(\lambda)$, and lower cash flows to shareholders. Although politicians determine the laxity of corporate legal investor protection, λ , and not directly the level of insiders' private benefits of control $b(\lambda)$, given that the choice of λ determines the level of $b(\lambda)$, we may view the politician's choice as a direct choice of private benefits to insiders b .

For every value of $b \geq 0$, we denote the total reduction in cash flow rights to shareholders by $c(b)$. We assume that the function $c(b)$ is increasing, differentiable, and convex; that $c(0) = 0$; and that $c'(0) < 1$. The social welfare that corresponds to a level of insiders' private benefits of control b is therefore given by

$$b - c(b)$$

Our assumptions imply that social welfare is maximized by setting the private benefits of control to insiders to be such that the marginal benefit to insiders is set equal to the marginal cost to all shareholders (including insiders). That is, the maximization of social welfare requires that private benefits of control to insiders be set equal to the value $b^* > 0$ that satisfies the equation

⁴ See the comprehensive survey by Becht et al. (2003) for a theoretical review of the various elements represented by this parameter of the model. For empirical testing, one could proxy this parameter with the indices of investor protection used in the literature (see, e.g., LaPorta et al. (1998), Djankov et al. (2005), and Leuz and Hail (2006)).

$$c'(b^*) = 1$$

2.4. The Politician

For simplicity, we assume that in every period the level of corporate legal investor protection is determined by a single politician. Following Grossman and Helpman (2001), we assume that the politician's objective function combines a concern for social welfare together with a concern for the benefits that the politician can extract from the different interest groups in the economy.

Specifically, we assume that the objective of the politician is to maximize the following function

$$u_p(b, p) = w_1 \cdot (b - c(b)) + w_2 \cdot p \quad (1)$$

where p denotes the monetary value of benefits given to the politician by interest groups, and w_1 and w_2 denote the weights the politician assigns to social welfare and interest group contributions, respectively.

The benefits that an organized interest group can confer on a politician can take many forms. Grossman and Helpman assume, for simplicity, that benefits given to the politician by interest groups take the form of campaign contributions, which benefit politicians by enabling them to sway impressionable voters in their favor.⁵ Although campaign contributions provide a concrete and familiar example of benefits provided by lobbying groups, there are many other ways in which benefits can be provided. Lobbying groups can benefit the politician by providing positions or business opportunities to associates, family members, or friends of the politician, by giving charitable contributions to causes favored by or helpful to the politician, by supporting positions the politician seeks to advance, and so forth.

Note that at this stage, we assume that the politician's choice of the level of investor protection does not have a direct effect on voters' voting decisions, because voters largely do not follow this subject. The choice of investor protection only affects voting decisions indirectly, because the campaign contributions of interest groups (and other things the interest groups may do for the politician) can help the politician get votes. In Section 5 we extend the model to incorporate the direct effect on voting decisions.

Finally, it is worth noting that, like the literature, we assume that the politician's choice is among general rules. That is, the politician cannot set investor protection levels differently for some insiders than for others. The politician has to choose a level that will apply to all public firms. For this reason,

⁵ See Besley and Coate (2001) for an alternative perspective.

players with an interest only in a given company cannot lobby for special rules for that company. They can only participate in the lobbying for general rules whose application to their particular company will be beneficial to them.

2.5. The Influence Game

In our model, in every period, the level of corporate legal investor protection affects four groups of players: insiders, individual investors, institutional investors, and entrepreneurs. Insiders prefer that private benefits of control b be set strictly higher than the efficient level b^* , and individual investors and institutional investors prefer that private benefits of control be set strictly lower than the efficient level. Because an efficient level of private benefits of control maximizes the value and hence the price of their firm when they take it public, entrepreneurs prefer that b be set equal to the efficient level b^* .

Each of these four groups has different objectives and may consequently benefit from organizing to influence the politician's decision, yet might be differently adept at overcoming the free-rider problem associated with organizing itself for the purpose of collective action. At least since Olson (1965), the literature has recognized that small, closely knit, groups whose members each have a large stake in getting organized may be more effective in organizing for collective action. Accordingly, we assume that insiders, institutional investors, and entrepreneurs, can organize themselves to form special interest groups for the purpose of influencing the politician's decision. In contrast, individual investors, who are both more numerous and dispersed and have, individually, a much smaller stake in the politician's decision, do not form an organized interest group and engage in lobbying. We follow the literature in assuming that each of the three organized interest groups acts so as to maximize the total payoff to the members of the group.

We denote the insiders', the institutional investors', and the entrepreneurs', special interest groups by I , F , and E , respectively. Following the literature (e.g., Bernheim and Whinston, 1986; and Grossman and Helpman, 2001) we assume that interest groups of insiders, institutional investors, and entrepreneurs offer the politician nonnegative contribution schedules, denoted $C_I(\cdot)$, $C_F(\cdot)$, and $C_E(\cdot)$, respectively, which specify the amount they are willing to pay in return for the implementation of legal investor protection that would set the amount of private benefits of control.

The cost for the special interest groups of paying the politician depends on the constraints that are imposed on the ways in which lobbyists can influence politicians. Specifically we assume that every dollar of benefits enjoyed by the politician costs κ to the organized interest group providing it. The parameter κ describes the cost of the “influence technology” that is available to interest groups

in the economy. In an economy in which there are no constraints on bribing politicians, interest groups can just write a check to the politician, and κ is equal to one. In contrast, if checks cannot be written but expensive gala dinners may be arranged, an interest group may have to spend much more in order provide the politician with a given level of benefits. The more constraints are imposed on conferring benefits on politicians, the greater is κ .

An important practical difference between insiders and other interest groups is that insiders are able to use their control over the resources of public firms for their influence activities. Insiders have control over the campaign contributions and the charitable contributions that firms make, so insiders can use their control over firms' resources to provide benefits to individuals affiliated with politicians (or the politicians themselves after they retire). Insiders also determine whether their firms will support various policy measures that a politician seeks to advance. CEOs' command of large firm resources substantially contributes to their ability to attract prominent politicians to their dinner parties, to bring many high-wealth individuals to fund-raisers they throw for politicians, and so forth. Indeed, in the U.S., the Business Roundtable, a powerful interest group representing executives of the country's largest companies, is largely financed by the membership fees that the executives' firms pay to the organization.

One might wonder why corporate charters do not explicitly prohibit insiders from using company resources to influence politicians. While some of the expenditures are difficult to observe or verify, others such as campaign donations are not. A main reason for the absence of such prohibitions might be that some use of company resources to gain influence may be in the interest of shareholders. Insiders can use the influence they gain with a politician to lobby for rules that are good for firm profits (e.g., lax regulation on the industry in which the firm operates).⁶ While it might be possible to observe that insiders are lobbying politicians, it is hard to observe the particular purpose for which they are lobbying any given politician. For example, when an insider cultivates a relationship with a politician, shareholders can hardly observe what the former discusses with the latter at a dinner party.

The problems we highlight can also be viewed as an agency problem. The standard agency problem is that, given whatever legal rules (and corporate arrangements) are in place, insiders may use their discretion to make business decisions that serve their private interests (Jensen and Meckling, 1976). What we highlight is that the legal rules themselves are partly a product of an agency problem, as insiders might use direct corporate lobbying efforts in ways that serve

⁶ For empirical evidence on how political connections can improve firm value and stock returns, see Bongini, Claessens, and Ferri (2001), Faccio (2006), Faccio, Masulis, and McConnell (2005), and Leuz and Oberholzer-Gee (2006), Claessens, Feijen, and Laeven (2006).

their own interests. Similarly, institutional investors cannot be expected to act in ways that would best serve the interests of public investors.

We therefore assume that insiders can use their firms to finance their influence activities. Because insiders own a proportion α of each firm, insiders bear only a fraction α of their contribution to the politician. In contrast to insiders, the institutional investors and entrepreneurs cannot engage in influence activities at the expense of existing public firms. Indeed, under the standard contracts institutional investors have with their investors, institutional investors cannot even charge such expenses to their managed portfolios. Thus, the institutional investors and entrepreneurs have to bear such expenses themselves with their own private resources.

The game proceeds as follows. The three interest groups simultaneously offer the politician contribution schedules. Then, the politician chooses a level of private benefits of control that maximizes his objective function, and the politician, insiders, institutional investors and entrepreneurs all obtain their payoffs that are defined as follows.

The payoff to the politician is described above in (1). The direct payoffs to insiders, institutional investors, and entrepreneurs, when they pay the politician amounts p_I , p_F , and p_E , respectively, and the politician sets the level of private benefits of control at b are given by

$$u_I(b, p_I) = N(b - \alpha c(b)) - \alpha \kappa p_I, \quad (2)$$

$$u_F(b, p_F, p_I) = -N\mu\beta(1 - \alpha)c(b) - \kappa p_F, \quad (3)$$

and,

$$u_E(b, p_E) = M(b - c(b)) - \kappa p_E \quad (4)$$

respectively.⁷

3. The Equilibrium Level of Investor Protection

We analyze Nash equilibria of the political process described above as follows. A pure strategy Nash equilibrium is a quartet $\langle b^*, C_I(\cdot), C_F(\cdot), C_E(\cdot) \rangle$ that is such

⁷ Observe that because insiders use their firms to finance their contributions, a payment of p_I from insiders to the politician further reduces the payoff to institutional investors by an amount $\mu\beta(1 - \alpha)\kappa p_I$

that the politician chooses the level of private benefit of control to maximize its objective function, and each interest group does not want to change its own contribution schedule given the other interest group's contribution schedule and the politician's anticipated choice.

Optimization by the politician implies that

$$b^\circ \in \arg \max_{b \geq 0} \{w_1(b - c(b)) + w_2(C_I(b) + C_F(b) + C_E(b))\}$$

Optimization by interest group $k \in \{I, F, E\}$ implies that there does not exist an alternative contribution schedule $\hat{C}_k(\cdot)$ that would induce the politician to choose another level of benefits

$$\hat{b} \in \arg \max_{b \geq 0} \{w_1(b - c(b)) + w_2(\hat{C}_k(b) + C_i(b) + C_j(b))\}$$

where $i, j \in \{I, F, E\} \setminus \{k\}$, $i \neq j$, that would make the interest group k strictly better off, or such that

$$u_k(\hat{b}, \hat{C}_k(\hat{b})) > u_k(b^\circ, C_k(b^\circ)).$$

We follow the literature and further focus our attention on Nash equilibria that are supported by “truthful” contributions schedules. A contribution schedule is said to be truthful if starting from any positive contribution to the politician, the additional contribution that an interest group is willing make to the politician in return for a change in b is such that the direct payoff to the interest group remains unchanged. In other words, a contribution schedule $C_k(\cdot)$, $k \in \{I, F, E\}$, is said to be truthful if it is such that the direct payoff to the interest group is a constant that is independent of the politician's ultimate choice of b , provided that the interest group's contribution is positive, or more formally, if it is such that $u_k(b, C_k(b)) = K$ for some constant K for every b such that $C_k(b) > 0$.⁸

⁸ Confining attention to truthful Nash equilibria may not be as restrictive as it may seem. Bernheim and Whinston (1986) show that for any profile of strategies that are chosen by other special interest groups, each special interest has a best response contribution schedule that is truthful. And Bernheim et al. (1987) show that the set of truthful equilibria coincides with the set of coalition-proof pure strategy Nash equilibria. The literature has considered truthful equilibria to be the standard refinement of pure strategy Nash equilibria in common agency games.

3.1. The Special Case in Which No New Capital is Raised

In order to better understand our results, it is best to start with the analysis of the special (no growth) case in which no new capital is raised from public investors by new firms (or existing firms). Note that in this case, entrepreneurs are not participating in the lobbying game so that only two interest groups are present, insiders and institutional investors.

Observe that algebraic manipulation of equation (2) reveals that if insiders employ truthful strategies, then their contribution schedule $C_I(b)$ is equal to

$$N(b - \alpha c(b)) / \alpha \kappa \quad (5)$$

up to a constant if (5) is positive. Similarly, algebraic manipulation of equation (3) reveals that if institutional investors employ truthful strategies, then their contribution schedule $C_F(b)$ is equal to

$$-N\mu\beta(1 - \alpha)c(b) / \kappa \quad (6)$$

up to a constant if (6) is positive.

Having made this observation, we can state the following result.

Proposition 1: *In an economy with public firms and institutional investors, in the absence of lobbying by entrepreneurs planning to take new companies public, the lobbying game has a unique truthful Nash equilibrium with an inefficiently low level of investor protection and an excessively high level of private benefits to insiders if at least one of the following three conditions is satisfied:*

- *Insiders can use the resources of existing firms to finance their influence activities,*
- *Some individual investors hold shares directly in public firms, and*
- *institutional investors have to pass on to their investors some of the benefits of improved investor protection.*

Proof: The proof consists of three steps, the first of which is given here, and the other two are relegated to the appendix. We first show that if $\langle b^\circ, C_I(\cdot), C_F(\cdot) \rangle$ is a truthful Nash equilibrium in which both interest groups contribute positive amounts to the politician (that is both $C_I(b^\circ), C_F(b^\circ) > 0$), then b° is characterized by the following equation

$$c'(b^\circ) = \frac{w_1 + \frac{w_2 N}{\alpha \kappa}}{w_1 + \frac{w_2 N}{\kappa} (1 + \mu\beta(1 - \alpha))} \geq 1. \quad (7)$$

Suppose that $\langle b^\circ, C_I(\cdot), C_F(\cdot) \rangle$ is a truthful Nash equilibrium in which $C_I(b^\circ), C_F(b^\circ) > 0$. Let T_I denote the level of benefits where $C_I(b)$ starts to increase above zero, and let T_F denote the level of benefits where $C_F(b)$ becomes equal to zero. The fact that $C_I(b^\circ)$ and $C_F(b^\circ)$ are both positive implies that $T_I < b^\circ < T_F$. The fact that b° is optimal for the politician implies that it is a global maximum of the politician's objective function. In particular, it must be that b° is an interior local maximum of the politician's objective function on the interval $[T_I, T_F]$. It therefore follows that

$$\frac{d}{db} [w_1 \cdot (b - c(b)) + w_2 \cdot (C_I(b) + C_F(b))] \Big|_{b=b^\circ} = 0. \quad (8)$$

Plugging (5) and (6) into (8) implies that b° has to satisfy the following equation:

$$w_1(1 - c'(b^\circ)) + w_2 \left(\frac{N(1 - \alpha c'(b^\circ))}{\alpha \kappa} - \frac{N\mu\beta(1 - \alpha)c'(b^\circ)}{\kappa} \right) = 0 \quad (9)$$

Rearranging equation (9) produces equation (7).

Note that the right-hand-side of (7) is larger than or equal to 1 for any values of $\alpha, \beta, \mu \in [0, 1]$. If $\alpha = 1$, then the right-hand-side of (7) is equal to 1 which implies that $b^\circ = b^*$. But if $\alpha < 1$ and even more so if in addition also $\beta < 1$ or $\mu < 1$ then the right-hand-side of (7) is strictly larger than 1 which implies that $b^\circ > b^*$. Note also that right-hand-side of (7) is decreasing in κ . That is, the more expensive it is to pay the politician, the less it is paid, and the closer is the outcome to the efficient one.

To complete the proof we have to show that in any truthful Nash equilibrium, both interests groups make positive contributions to the politician and that these contributions are uniquely determined, which implies that there exists a unique truthful Nash equilibrium. This follows from Lemmas 1 and 2 in the appendix. Lemma 1 shows that the special interests equilibrium contributions $C_I(b^\circ)$ and $C_F(b^\circ)$ are positive, and Lemma 2 shows they are uniquely determined. ■

Remarks: (i) The intuition for the result is as follows. The optimal level of private benefits is defined at the level in which the marginal benefit to insiders is equal to the marginal cost to all shareholders. However, in the economy assumed

in the proposition, investor protection will be set at a level at which the marginal benefit of additional private benefits to insiders is lower than their marginal cost to outsider shareholders.

If insiders can finance influence activities using their firms' resources, then, for any given increase in private benefits b , insiders will be willing to spend more on influence activities than the value to them of this marginal benefit. Specifically, for each increase in private benefits of control Δb , while from (5) the value of the increase to insiders is $N(\Delta b - \alpha(c(b + \Delta b) - c(b)))$, insiders are willing to spend up to $N(\Delta b - \alpha(c(b + \Delta b) - c(b)))/\alpha\kappa$ to obtain this increase, because they bear only a fraction α of this spending, and taking into account the cost κ of influencing the politician. In contrast, from (6) the cost of such an increase to institutional investors is $N\mu\beta(1 - \alpha)\Delta b$, but institutional investors are only willing to spend up to $N\mu\beta(1 - \alpha)\Delta b/\kappa$ to prevent this increase, taking into account the cost κ of influencing the politician, because they finance their lobbying expenses out of their own pocket.

If institutional investors do not hold all of the shares not in the hands of insiders ($\beta < 1$), or if institutional investors have to pass on to their own investors some of the increase in the value of portfolios of public company shares held by them ($\mu < 1$), then for any given increase in private benefits, institutional investors are willing to spend less on influence activities to prevent this increase than the marginal costs of this increase to outside shareholders. Thus, under the conditions specified in the proposition, insiders are willing to spend more than institutional investors to get increases in private benefits at any level below the optimal level as well as in some levels above it.

(ii) Another way of understanding the intuition for the result is the following. In models using the Grossman-Helpman framework, the outcome is efficient for the lobbying interest groups and the politician in the sense that there is no outcome that can make all of them better off compared to the equilibrium outcome (Dixit et al., 1997). Similarly, in our model the truthful equilibrium outcome identified in the proposition is jointly efficient for insiders, institutional investors, and the politician, in the sense that there is no other outcome that generates the same payment to the politician that all would weakly prefer to it and at least some strictly prefer to it. That is, the outcome is efficient with respect to all the parties that are at the bargaining table, as it were.

However, in our model, the outcome has an effect not only on the interests of the parties at the table but also on the interests of individual investors who directly or indirectly own stock in public companies. Spending by insiders to influence politicians to increase private benefits, and increases in private benefits, both impose a negative externality on these individual investors, which the lobbying groups do not take into account. The politician is influenced by this externality

but also by the influence activities of the lobbying groups, which do not take the externality into account. As a result, the outcome is one in which private benefits are excessive.

3.2. The General Case with Raising of New Capital

Thus far we have identified the equilibrium level of investor protection in the special case in which there are no entrepreneurs, and no new firms are created after the setting of the investor protection. We now relax this assumption and allow for the possibility that, as assumed in the general model described in Section 2, entrepreneurs create M new firms.

A strongly held view among financial economists implies that agents who seek to raise capital from the public by selling part of their firms to new shareholders have an interest in their firms being governed by efficient governance arrangements, because inefficiencies would depress the price they can obtain for shares of their firms (Jensen and Meckling, 1976). This view might lead some to believe that in an economy in which capital is being raised, the interest of entrepreneurs in an efficient level of investor protection for new firms will provide a powerful force pushing towards an efficient level of investor protection.

In our model, if entrepreneurs could unilaterally dictate the level of investor protection, they would set it at an optimal level. However, entrepreneurs cannot dictate the investor protection level but can only expend resources to compete for influence over the politician setting this level. Accordingly, the level of investor protection will be set optimally only if the entrepreneur is willing to pay the politician for setting investor protection optimally more than insiders are willing to pay the politician for not doing so. As we will see below, the entrepreneurs' interest in limiting the inefficiency of investor protection rules will reduce the distortion in favor of excessive private benefits but will not eliminate it.

Algebraic manipulation of equation (4) reveals that if entrepreneurs employ truthful strategies, then their contribution schedule $C_E(b)$ is equal to

$$M(b - c(b))/\kappa \tag{10}$$

up to a constant if (10) is positive. Having made this observation, we can state the following result.

Proposition 2: *In an economy with public firms, insiders, institutional investors, and entrepreneurs, the lobbying game has a unique truthful Nash equilibrium with an inefficiently low level of investor protection and an excessively high level of private benefits of control if at least one of the following three conditions is satisfied:*

- *Insiders can use the resources of existing firms to finance their influence activities,*
- *Some individual investors hold shares directly in public firms, or*
- *institutional investors have to pass on to their investors some of the benefits of improved investor protection.*

However, the level of investor protection is less sub-optimal, and the level of private benefits is less excessive, than the corresponding levels in the case where no new capital is raised from public investors as specified in Proposition 1.

Proof: The proof of Proposition 2 is similar to that of Proposition 1. Suppose that $\langle b^\circ, C_I(\cdot), C_F(\cdot), C_E(\cdot) \rangle$ is a truthful Nash equilibrium in which $C_I(b^\circ), C_F(b^\circ), C_E(b^\circ) > 0$.

Let T_I denote the level of benefits where $C_I(b)$ starts to increase above zero, and let T_F denote the level of benefits where $C_F(b)$ becomes equal to zero. The fact that $C_I(b^\circ)$ and $C_F(b^\circ)$ are both positive implies that $T_I < b^\circ < T_F$. The fact that b° is optimal for the politician implies that it is a global maximum of the politician's objective function. In particular, it must be that b° is an interior local maximum of the politician's objective function on the interval $[T_I, T_F]$ (Observe that because the entrepreneurs are interested in a level of private benefits b that is between the one that insiders and institutional investors want, if it is positive, then their contribution is positive on the interval $[T_I, T_F]$). It therefore follows that

$$\frac{d}{db} [w_1 \cdot (b - c(b)) + w_2 \cdot (C_I(b) + C_F(b) + C_E(b))]_{b=b^\circ} = 0. \quad (11)$$

Plugging (5), (7), and (11) into (12) implies that b° has to satisfy the following equation:

$$w_1(1 - c'(b^\circ)) + w_2 \left(\frac{N(1 - \alpha c'(b^\circ))}{\alpha \kappa} - \frac{N\mu\beta(1 - \alpha)c'(b^\circ)}{\kappa} + \frac{M(1 - c'(b^\circ))}{\kappa} \right) = 0. \quad (12)$$

Rearranging (13) gives

$$c'(b^\circ) = \frac{w_1 + \frac{w_2}{\kappa} \left(\frac{N}{\alpha} + M \right)}{w_1 + \frac{w_2 N}{\kappa} \left(1 + \mu\beta(1 - \alpha) + \frac{M}{N} \right)} \geq 1 \quad (13)$$

As in the proof of Proposition 1, note that the right-hand-side of (13) is larger than or equal to 1 for any values of $\alpha, \beta, \mu \in [0, 1]$. If $\alpha = 1$, then the right-hand-

side of (13) is equal to 1 which implies that $b^{\circ\circ} = b^*$. But if $\alpha < 1$ and even more so if in addition either $\beta < 1$ or $\mu < 1$ then the right-hand-side of (13) is strictly larger than 1 which implies that $b^{\circ\circ} > b^*$.

To complete the proof we have to show that in any truthful Nash equilibrium, both interests groups make positive, uniquely determined, contributions to the politician. This follows from Lemmas 3 and 4 in the appendix. Lemma 3 shows that the special interests equilibrium contributions $C_I(b^{\circ\circ})$, $C_F(b^{\circ\circ})$, and $C_E(b^{\circ\circ})$, are positive, and Lemma 4 shows they are uniquely determined. ■

Remarks: The intuition for the results in Proposition 2 is as follows. Recall that the reason for the inefficiency of the outcome in Proposition 1 resulted from the fact that the lobbying groups at the table did not fully take into account the negative effects of private benefits on individual investors. Because entrepreneurs expect the IPO price to reflect the costs of weak investor protection for outside shareholders buying shares at the IPO from their firms, the entrepreneurs internalize the effects of such protection on the outside investors in the firms they plan to take public.

However, the entrepreneurs do not internalize the effects of weak investor protection on outside investors in firms that are already public. Thus, even with the addition of the entrepreneurs lobby to the bargaining table, there still remains a group that is adversely affected by weak investor protection – outside investors in exiting public companies – whose interests will not be represented at the table. As a result, the outcome is still distorted in the direction of excessively large private benefits of control.

The extent of the moderating effect that lobbying by entrepreneurs has on the outcome depends on the ratio of M to N -- that is the ratio of firms that will have to go public in the future on the basis of the chosen investor protection level and the stock of existing firms that have already obtained their capital. The higher this ratio, the more moderated the outcome will be. This is the case because the interests of the future outside investors in the M firms are represented at the bargaining table whereas the interests of the outside investors in the already existing N firms are not. Thus, the larger the former group relative to the latter group, the smaller the relative significance of the fact that the interests of the latter group are not internalized and consequently the smaller the distortion in favor of sub-optimal level of protection.

3.3. Raising of New Capital by Existing Public Firms

We have thus far assumed that the new capital is going to be raised by new firms taken public by entrepreneurs. We now turn to explore the possibility that the

existing public firms will raise new capital. Specifically, we assume that the new M firms will be established as publicly traded subsidiaries of the existing N companies, with the existing companies holding α of the shares and the public holding the rest.

Proposition 3: *In the case in which the new M firms are expected to be established as subsidiaries of the existing public firms rather than as new firms taken public by entrepreneurs:*

1. *If the private benefits of the new firms will be captured by the parent and shared by all shareholders of the parent, then the equilibrium will be the same as the one of the case of entrepreneurs specified in Proposition 2.*

2. *If the private benefits flow directly to the insider and are not shared by the parent's outside shareholders, then investor protection will be more lax, and private benefits will be larger, than in the case in which the M new firms are established by entrepreneurs.*

Remark: The proof of Proposition 3 is relegated to the appendix. The intuition for it is as follows:

(i) Recall that with the introduction of entrepreneurs, there were lobbyists who beyond b^* were willing to pay $M(c'(b)-1)/\kappa$ to prevent a marginal increase in private benefits of control. In the case under consideration, the payoff of public companies is similarly lower by $M(c'(b)-1)$. And insiders only lose a fraction α of that. However, because insiders are generally willing to pay $1/\alpha\kappa$ for benefits, this reduction reduces their willingness to spend by $M(c'(b)-1)/\kappa$.

(ii) In the second case, the outcome is more distorted because insiders fully capture the private benefits in the new firms but share with investors in the existing firms the costs of the reduced willingness of the public to pay for shares in the new firms. Thus, for any increase in private benefits by 1, they will gain M but pay only $M\alpha c'(b)$ at the margin.

4. Extensions and Generalizations

4.1. Publicly Traded Institutional Investors

Until now we have assumed that the person who is making the decisions for the institutional investors seeks to maximize the institutional investors' profits. But this might not be the case if the institutional investors are themselves become public companies. Let us assume that the institutional investors become themselves public companies and that insiders in the institutional investment

firms hold a share α of their firms, like insiders in the N public firms that are not engaged in such financial intermediation.

Proposition 4: *If the institutional investors are themselves publicly traded companies, then investor protection will be more lax and private benefits will be larger, than in the equilibria described in Propositions 1-3.*

As before, the proof of Proposition 4 is relegated to the appendix. The intuition is as follows. The change in assumptions reduces the willingness of the insiders controlling the decisions of institutional investors to spend the resources of their public companies to lobby for an increased level of investor protection. While improved investor protection would increase the profits of the institutional investors, which would provide a benefit to these insiders because of their holdings in the institutional investor, improved investor protection would now also reduce the private benefit they derive from their public company. Indeed, when the latter effect is stronger than the former, the change might even lead those running the institutional investors to even be willing to spend resources of their public company to lobby for weakening investor protection levels.

Another way of understanding this result is by considering the effect of institutional investors being themselves being publicly traded on the negative externality that weakening investor protection would impose on parties not at the table. When the institutional investors are not closely held but rather publicly traded, weakening investor protection would impose a negative externality on the public investors in these institutional investors in two ways: first, by reducing the profits the institutional investors obtains when their managed portfolios appreciate in value; and, second, by increasing the private benefits extracted from the institutional investors by their insiders.

4.2. The Duration of Selected Investor Protection Levels

A country's legal/political/institutional structure determines how often decisions are made by the politician, at least implicitly, about investor protection levels. Consider, for example, a situation in which significant decisions concerning investor protections are made by judges or bureaucrats who cannot be removed easily for a given period of time once appointed by the politician. Similarly, the competing claims on the agenda of the legislature imply that reconsideration of the corporate code is likely to take a long time in many countries.

To consider how the "durability" of investor protection decisions affects the equilibrium level of investor protection, let us assume that the politician chooses the investor protection level not in the beginning of each period but in the beginning of every other period. That is, two periods, rather than one period,

passes between any two nearby points in time in which the investor protection level is set.

Suppose that the M entrepreneurs who plan to sell their firms in the first period of the any such two periods all participate in the lobbying game, and so does a certain, possibly small but positive, fraction $\phi > 0$ of the M entrepreneurs who plan to sell their firms in the second of those two periods.

Observe that the fact that the politician would set the level of benefits for two rather than for one period implies that the weight that the politician puts on social welfare in his objective function (1) should be multiplied by two, and so should the contributions of insiders and institutional investors in (5) and (6) respectively, provided they are positive. The contribution in (10) of the first M entrepreneurs who intend to sell their firms in the first of the two periods should also be multiplied by two, because they internalize any change in the future value of their firms, and in addition, ϕM of the entrepreneurs who intend to sell their firms in the second of the two periods should also attempt to lobby the politician and offer him a contribution that is given by (10) up to a constant if it is positive in equilibrium.

Having made these observations, we can state the following result.

Proposition 5: *In the economies described in Propositions 2 and 3, if the politician sets the investor protection level not in the beginning of each period but in the beginning of every other period, then in the unique truthful Nash equilibrium of the lobbying game, the level of investor protection would be higher and private benefits of control would be lower, in comparison to the equilibria described in Propositions 2 and 3.*

The intuition behind this result, whose proofs is again relegated to the appendix, is as follows. When a decision over investor protection will affect investor protection levels in a given future period that is relatively distant in the future, a great fraction of the capital in the hands of public companies in that future period will be raised after the decision is made rather than one already in place at the time of the decision. As a result, the lobbying efforts of those (entrepreneurs as well as existing insiders) interested in raising capital in the future relative to the lobbying efforts of those insiders seeking to capture rents from the capital already in the hands of public companies will be strengthened. And this effect reduces (even though it does not eliminate) the distortion in favor of excessive private benefits. Furthermore, the larger is the number of periods that pass between each successive change in private benefits of control, the stronger is this effect and the closer is the level of private benefits of control that is set in equilibrium to the socially efficient level.

4.3. Voting and the Role of the Media

Suppose that the politician's choice of investor protection level affects not only the contributions of organized interest groups but also has a meaningful *direct* effect on voting decisions. Although the number of corporate insiders in the population is small, the number of individual investors might be significant. Suppose that a non-negligible fraction of the electorate consists of investors that follow the choice of the investor protection level and who might be led to vote against the politician if they perceive his choice of the investor protection level as lax. Specifically, suppose that the politician's objective is to maximize the following function

$$\hat{u}_p(b, p) = \omega_1(b - c(b)) + \omega_2 p - \omega_3 v(\theta, b, s) \quad (14)$$

where p denotes the total sum of campaign contributions to the politician as before, $v(\theta, b, s)$ denotes the number of votes that the politician is expected to lose as a function of the private benefits of control it sets, the fraction of the population that invests in public companies directly or indirectly θ , and the salience of corporate governance issues s , and $\omega_1, \omega_2, \omega_3 > 0$ describe the weights given to social welfare, campaign contributions, and lost votes, respectively, in the politician's objective function. Suppose also that number of votes that the politician stands to lose $v(\theta, b, s)$ is increasing in the level of private benefits of control it sets, b , the salience of the issue of favorite treatment of corporate insiders, s and in the fraction of voters who are shareholders.

An argument similar to the one used to prove Proposition 1 implies that in the unique truthful Nash equilibrium of the lobbying game in this case, the outcome would be less biased in favor of corporate insider compared to the case analyzed in Section 3 where the politician ignored the voters' response.

Proposition 6: *If investor protection decisions have a direct effect on voting decisions, then the lobbying game will have a unique truthful Nash equilibrium in which investor protection is stronger and private benefits of control are smaller than in the equilibria identified in Propositions 1 and 2.*

The proof of Proposition 6 is relegated to the appendix. To see the intuition behind this result, observe that $c'(\hat{b})$ decreases with s . Proposition 6 thus implies that if the salience of the issue of the favorite treatment of corporate insiders is strong, as it is expected to be either as a result of more extensive media coverage, or after corporate scandals and market crashes, then the politician might even set

the level of the private benefits of control b to be lower than the efficient level b^* . This case may be interpreted as reflecting a surrender of the politician to populist sentiment. Proposition 6 also indicates that, over time, as public rage subsides and the salience of corporate discipline decreases, the level of private benefits of control is expected to increase again.

5. Predictions and Implications

5.1. Investor Protection and the Structure of Political/Legal Decision-Making

We begin with observations about the link between the equilibrium level of investor protection and two variables that are relevant to determining the extent to which interest group lobbying efforts in the aggregate would affect the politician's decision making. In particular, the equilibrium level of investor protection in our model increases with the weight given to interest group contributions in the politician's objective function, and decreases with the influence technology cost of contributing to the politician, which provides us with the following predictions:

Prediction 1: Investor protection will be lower when public officials setting the level of investor protection assign a relative high weight to contributions from interest groups in their objective function.

Prediction 2: Investor protection will be lower when interest groups seeking to influence politicians face weaker constraints on their influence activities and thus have a less expensive "influence technology."

Essentially, interest group lobbying pushes the politician away from setting private benefits at the optimal level, which social welfare considerations would suggest. Thus, anything that increase the role that interest group lobbying plays in the politician's final decision will also increase the sub-optimality of investor protection. Both predictions suggest a link between the general quality of choices made by public officials and the quality of their choices in the investor protection area.

The first prediction also indicates the significance of the extent to which decisions concerning investor protection are relegated to judges and civil servants that are less susceptible to lobbying by interest groups. This prediction is consistent with the evidence that common law systems in which judges play a more significant role are associated with higher levels of investor protection (LaPorta et al. (1998), Djankov et al. (2005)). To the extent that systems in which

judges play a greater role in determining investor protection levels offer higher levels of such protection, such a pattern might be partly due to the relative insulation of judges from interest group lobbying.

The second prediction provides a testable prediction for future empirical work. It suggests that investor protection levels should be expected to be correlated with the existence and tightness of limits on the freedom of politicians to receive benefits (either in terms of campaign contributions or otherwise) from interest groups.

Prediction 3: Investor protection will be higher when the legal and institutional structures make the consequences of political choices with respect to investor protection longer lasting and more difficult to reverse.

When the choices made at any point in time will govern far into the future, the group of entrepreneurs who will be affected by current choices, and who therefore may be more inclined to lobby for efficient rules, expands. Therefore, when institutional structures slow down the pace of changes, investor protection can be expected to improve. To the extent that judge-made law is expected to change more slowly and gradually over time, this prediction provides another reason to expect an association between systems in which courts play a more significant role in determining investor protection and higher investor protection levels.

5.2. Investor protection and the stage of the economy

Prediction 4: Investor protection will be higher in growing economies in which the value of the new capital that needs to be raised from outside investors is large relative to the value of the capital already in the hands of existing public firms.

In our model, when an economy is growing at a faster pace, there will be more lobbying in favor of efficient rules by entrepreneurs and existing public companies whose plans to raise capital from public investors make them interested in such rules. This result is consistent with the evidence that investor protection is correlated with GDP growth (Castro et al. (2004)) and that investor protection is correlated with the ratio of capital raised in IPOs to GDP (Djankov et al. (2005)). The result indicates that the documented correlations might be at least partly due to causality going from growth to higher investor protection than one going from higher investor protection to growth.⁹

⁹ Allen et al. (2005) describe how in the absence of significant investor protection, much of the growth of China's economy has taken place in private companies obtaining

Prediction 5: Investor protection will be higher when the fraction of the electorate that directly or indirectly owns shares in public companies is large.

When a large fraction of the electorate holds shares directly or indirectly, episodes that make the inadequacy of investor protection visible are more likely to lead public officials to improve investor protection levels out of fear that failing to do so would result in direct adverse effect on citizens' voting decisions. This result is consistent with the evidence that investor protection levels are correlated with the size of a country's stock market relative to GDP (see, e.g., Djankov et al. (2005)). This result suggests yet another reason for why stock market development might bring about, rather than be caused by, high level of investor protection. The existence of such a causal link from increased participation in the stock market to higher investor protection is consistent with the evidence in Franks et al. (2006) that formal legal protection of investors in the U.K. to a substantial extent followed rather than preceded the dispersion of ownership.

5.3. Investor Protection and corporate structures and activities

Prediction 6: Among economies with controlling shareholders, investor protection will be lower in those in which controllers hold a low fraction of cash flows rights due to the separation of cash flow rights and voting rights.

Separation between cash flow rights and voting rights is common in many countries around the world, and its presence is associated with low levels of investor protection (La Poerta et al. (1999), Claessens et al. (2000)). One set of explanations for such an association suggests that poor investor protection leads to an increased use of the separation between cash flow rights and voting rights (Bebchuk (1999), Almeida and Wolfenzon (2006)).¹⁰ Our analysis indicates that this correlation might also be at least partly explained by causality going in the opposite direction, namely, that the common use of such structures might lead to greater tendency of insiders to use corporate resources to lobby for low levels of investor protection.

financing through means other than raising public equity. Our analysis suggests that the increasing use of public equity markets by companies in China might lead to future improvements in the levels of investor protection.

¹⁰ Relatedly, Morck and Yeung (2004), and Morck et al. (2005) argue that unaccountable/corrupt systems, which are correlated with low investor protection, provide incentives to create control pyramids, because such entities are more effective than freestanding firms in lobbying politicians.

Prediction 7: Investor protection will be lower when the economy is dominated by conglomerates, with new publicly traded companies tending to be created as subsidiaries or affiliates of existing public companies rather than as stand-alone entities.

This prediction follows from our Proposition 3. In many developing countries with low levels of investor protection, the economy and the creation of new public entities are dominated by conglomerates/business groups (see Fogel (2006) and the evidence surveyed by Morck, Wolfenzon, and Yeung (2005)). And reasons have been given to explain why low level of investor protection could provide large business groups with a great role in the creation of new business entities (Almeida and Wolfenzon (2006), Khanna and Palepu (2000)). Our analysis suggests a complementary explanation: the association between conglomerates/business groups and low levels of investor protection could also be explained by conglomeration bringing about, and not merely being caused by, low investor protection.

5.4. Investor Protection and Public Perceptions

As our analysis in section 5 suggests, whether public officials will be concerned about how decisions concerning investor protection will directly affect voting decisions will depend on various factors, which leads to the following predictions.

Prediction 8: Investor protection will be higher when individuals investing (directly or indirectly) in public companies are more financially educated and when the media is more active.

This prediction is consistent with the evidence of Dyck and Zingales (2004) that that investor protection levels (as proxied by premia on control blocks) are correlated with high per capital level of newspaper circulation. One explanation for this association is that, for any level of legal investor protection, an active media operates to reduce insider opportunism (see Dyck et al. (2006)). Our analysis suggests another, complementary explanation for this pattern: media exposure of insider opportunism might increase the pressure on politicians concerned about citizens' voting decisions to improve investor protection regulation. Furthermore, to the extent that individuals' financial and general education is higher in richer countries, this result can help explain why investor protection is higher in countries with higher GDP per capita.

Prediction 9: Investor protection will be higher following scandals or crashes that make the problems of insider opportunism more salient.

This prediction is consistent with a pattern that is observed in many countries where major reforms that boost the level of investor protection take place after major financial scandals. In the US, for example, most of the major legislative overhauls strengthening investor protection, such as the 1933 and 1934 securities legislation and the 2002 adoption of Sarbanes-Oxley, followed major waves of financial scandals. One explanation for this pattern is that the waves of scandals played an informational role, making public officials recognize the desirability of certain investor protection measures. The alternative, possibly complementary explanation offered by our analysis, is that the scandals served an important educational role for the public, highlighting for many voters the flaws of existing arrangements.¹¹ By doing so, the scandals made it in the interest of public officials to adopt measures whose efficiency might not have been recognized earlier. The scandals added another factor – the fear that failure to adopt investor protection reforms might produce a direct adverse effect on voting decisions – that outweighed the lobbying efforts of insiders.¹²

6. Conclusion

This paper has developed a framework for analyzing how lobbying by interest groups affects the level of investor protection. Our analysis has identified several factors that may lead the equilibrium level of investor protection to be sub-optimal. These factors include the ability of corporate insiders to use the corporate assets they control to influence politicians, as well as the inability of institutional investors to capture the full value of efficient investor protection for outside investors. The interest that entrepreneurs have in raising equity capital in the future reduces but does not eliminate the distortions that arise from insiders' interest in extracting rents from the capital that public firms already have. Our analysis is consistent with existing empirical evidence, and provides testable predictions for further empirical work regarding the way in which investor protection varies over time and around the world.

¹¹ Kane (1996) makes a similar argument with respect to the rules governing banking regulation, arguing that a main reason that crises lead to reform is not by changing the aggregate effect of interest group lobbying but rather by serving an important educational role for the public.

¹² This prediction can also help explain the finding in Benny (2002) that insider trading regulation tends to follow period with negative stock market returns.

Appendix

Lemma 1: *If $\langle b^\circ, C_I(\cdot), C_F(\cdot) \rangle$ is a truthful Nash equilibrium, then both $C_I(b^\circ)$ and $C_F(b^\circ)$ are positive.*

Proof: Suppose that $\langle b^\circ, C_I(\cdot), C_F(\cdot) \rangle$ is a truthful Nash equilibrium in which $C_I(b^\circ) = C_F(b^\circ) = 0$. Because $u_p(b^\circ, C_I(b^\circ) + C_F(b^\circ)) = u_p(b^\circ, 0)$ it must be the case that $b^\circ \in \arg \max_{b \geq 0} u_p(b, 0)$ from which it follows that $b^\circ = b^*$.

This cannot be an equilibrium because insiders would rather pay the politician for it to choose the level of benefits $\hat{b} > b^*$ that maximizes the function

$$w_1(b - c(b)) + w_2 \left(\frac{N(b - \alpha c(b))}{\alpha \kappa} \right) \quad (15)$$

on the interval $[b^*, \infty)$ (note that the politician receives a payment of zero throughout this range). To induce the politician to choose the level of benefits \hat{b} insiders would pay the politician an amount a little smaller than $(N(\hat{b} - \alpha c(\hat{b})) - (N(b^* - \alpha c(b^*)))) / \alpha \kappa$, which costs them a little less than $N(\hat{b} - \alpha c(\hat{b})) - N(b^* - \alpha c(b^*))$. The payoff to the politician would then increase to a little less than $w_1(\hat{b} - c(\hat{b})) + w_2(N(\hat{b} - \alpha c(\hat{b})) - N(b^* - \alpha c(b^*))) / \alpha \kappa$ which, by definition of \hat{b} , is larger than the politician's payoff in equilibrium $w_1(b^* - c(b^*))$, and the payoff to insiders would increase from $N(b^* - \alpha c(b^*))$ to a little more than $N(\hat{b} - \alpha c(\hat{b})) - (N(\hat{b} - \alpha c(\hat{b})) - N(b^* - \alpha c(b^*))) = N(b^* - \alpha c(b^*))$.

We have thus shown that it must be the case that if $\langle b^\circ, C_I(\cdot), C_F(\cdot) \rangle$ is a truthful Nash equilibrium where $C_F(b^\circ) = 0$, then $C_I(b^\circ) > 0$. We now show that it must be the case that $C_F(b^\circ) > 0$ as well.

Suppose that $\langle b^\circ, C_I(\cdot), C_F(\cdot) \rangle$ is a truthful Nash equilibrium in which $C_I(b^\circ) > 0$ and $C_F(b^\circ) = 0$. Because $u_p(b^\circ, C_I(b^\circ) + C_F(b^\circ)) = u_p(b^\circ, C_I(b^\circ))$ it must be the case that $b^\circ \in \arg \max_{b \geq 0} u_p(b, C_I(b))$ from which it follows that b° maximizes the

function (15, or $b^\circ = \hat{b}$).

This cannot be an equilibrium because institutional investors would rather pay the politician for it to choose the level of benefits $\hat{b} > b^*$ that maximizes the function

$$w_1(b-c(b)) + w_2 \left(\frac{N(b-\alpha c(b))}{\alpha\kappa} - \frac{N\mu\beta(1-\alpha)c(b)}{\kappa} - \frac{N^2\mu\beta(1-\alpha)(b-\alpha c(b))}{\alpha\kappa} \right) \quad (16)$$

on the interval $[0, \infty)$. The rest of the proof proceeds as before. To induce the politician to choose the level of benefits \hat{b} institutional investors would pay the politician an amount that is a little smaller than the difference in their payoff under \hat{b} and \hat{b} which costs them a little less than that amount multiplied by κ . The definition of \hat{b} implies that the payoff to the politician would increase if it would set the level of benefits equal to \hat{b} , and the payoff to institutional investors would increase by a little.

We have thus shown that if $\langle b^\circ, C_I(\cdot), C_F(\cdot) \rangle$ is a truthful Nash equilibrium then it must be that both $C_F(b^\circ) > 0$ and $C_I(b^\circ) > 0$. ■

Lemma 2: *The contribution schedules $C_I(\cdot)$ and $C_F(\cdot)$ of the special interests groups are uniquely determined in a truthful Nash equilibrium.*

Proof: Let $b_F < b^*$ denote the truthful Nash equilibrium level of private benefits of control to insiders if insiders do not lobby the politician, and let $b_I > b^*$ denote the truthful Nash equilibrium level of private benefits of control to insiders if institutional investors do not lobby the politician. We show that if $\langle b^\circ, C_I(\cdot), C_F(\cdot) \rangle$ is a truthful Nash equilibrium, then

$$u_p(b^\circ, C_I(b^\circ) + C_F(b^\circ)) = u_p(b_I, C_I(b_I)) = u_p(b_F, C_F(b_F)) \quad (17)$$

Recall that T_I denotes the level of benefits where $C_I(\cdot)$ starts to increase above zero, and T_F denotes the level of benefits where $C_F(\cdot)$ becomes equal to zero. The fact that $b_F \leq T_I$ and that $T_F \leq b_I$ implies that $C_I(b_F) = C_F(b_I) = 0$. Optimality of the politician's choice implies that $u_p(b^\circ, C_I(b^\circ) + C_F(b^\circ)) \geq u_p(b_I, C_I(b_I)), u_p(b_F, C_F(b_F))$. We show that the inequality must be binding. Suppose that $u_p(b^\circ, C_I(b^\circ) + C_F(b^\circ)) > u_p(b_I, C_I(b_I))$. It follows that institutional investors can reduce their contribution schedule by some small amount $\varepsilon > 0$ without affecting the politician's optimal choice b° . A contradiction. Similarly, it also follows that $u_p(b^\circ, C_I(b^\circ) + C_F(b^\circ)) = u_p(b_F, C_F(b_F))$.

Equation (17) allows us to calculate the two interest groups contributions as follows: the differences $C_I(b_I) - C_I(b^\circ)$ and $C_F(b_F) - C_F(b^\circ)$ are determined by the fact that the equilibrium is truthful. Hence, the equation $u_p(b^\circ, C_I(b^\circ) + C_F(b^\circ)) = u_p(b_I, C_I(b_I))$ uniquely determines the value of $C_F(b^\circ)$, and the equation $u_p(b^\circ, C_I(b^\circ) + C_F(b^\circ)) = u_p(b_F, C_F(b_F))$ uniquely determines the value of $C_I(b^\circ)$. The fact that the equilibrium is truthful implies that it is sufficient to determine the value of an interest group's contribution at one point at which it is positive to determine its entire contribution schedule. ■

Lemma 3: *If $\langle b^\circ, C_I(\cdot), C_F(\cdot), C_E(\cdot) \rangle$ is a truthful Nash equilibrium, then $C_I(b^\circ), C_F(b^\circ)$, and $C_E(b^\circ)$ are positive.*

Proof: The proof is similar to the proof of Lemma 1. ■

Lemma 4: The special interest groups' contribution schedules $C_I(\cdot)$, $C_F(\cdot)$, and $C_E(\cdot)$, are uniquely determined in a truthful Nash equilibrium.

Proof: The proof is similar to the proof of Lemma 2. ■

Proof of Proposition 3: The proof is similar to the proof of Proposition 2. The only difference is due to the fact that both the cost term and the contribution itself that is made by the entrepreneurs are multiplied by α because entrepreneurs who are insiders bear only a fraction α of the cost c . As a consequence, the contribution of the entrepreneurs is given by $M(b - \alpha c(b))/\alpha\kappa$ up to a constant (instead of $M(b - c(b))/\kappa$). The analog to equation (13) is given by the following equation:

$$c'(b^{\circ\circ}) = \frac{w_1 + \frac{w_2 N}{\alpha\kappa}(N + M)}{w_1 + \frac{w_2 N}{\kappa} \left(1 + \mu\beta(1 - \alpha) + \frac{M}{N} \right)} \geq 1$$

The private benefits in this case are larger than in the case where M new firms are established by entrepreneurs because the numerator above is larger than the numerator in the right-hand-side of (13). ■

Proof of Proposition 4: The proof is similar to the proof of Proposition 2. Note that on top of the losses that are caused to institutional investors as a consequence of an increase in the private benefits of control b , which are multiplied by α because insiders in these institutional investment firms only hold a fraction α of

these firms, insiders in institutional investment firms also enjoy the private benefits of control b like other insiders while only losing a fraction α of the cost. Therefore, if insiders in institutional investment firms employ truthful strategies, then their contribution schedule $C_F(b)$ is equal to

$$N\mu\beta(1-\alpha)(b-\alpha c(b)-c(b))/\kappa \quad (18)$$

up to a constant if (19) is positive.

It therefore follows that if $b^{\circ\circ\circ}$ is part of a truthful Nash equilibrium $\langle b^{\circ\circ\circ}, C_I(\cdot), C_F(\cdot), C_E(\cdot) \rangle$ then it has to satisfy the following equation:

$$w_1(1-c'(b^{\circ\circ\circ})) + w_2 \left(\frac{N(1-\alpha c'(b^{\circ\circ\circ}))}{\alpha\kappa} + \frac{N\mu\beta(1-\alpha)(1-(1+\alpha)c'(b^{\circ\circ\circ}))}{\kappa} + \frac{M(1-c'(b^{\circ\circ\circ}))}{\kappa} \right) = 0.$$

Rearranging the last equation gives

$$c'(b^{\circ\circ\circ}) = \frac{w_1 + \frac{w_2 N}{\alpha\kappa} \left(1 + \mu\beta\alpha(1-\alpha) + \frac{\alpha M}{N} \right)}{w_1 + \frac{w_2 N}{\kappa} \left(1 + \mu\beta(1-\alpha^2) + \frac{M}{N} \right)} \geq 1 \quad (19)$$

■

Proof of Proposition 5: The proof is similar to the proof of Proposition 2. The difference is due to the fact that the benefit that the politician derives from social welfare and the payments from insiders and institutional investors to the politician are multiplied by two while the payment of the entrepreneurs to the politician are multiplied by $2 + \phi$.

The analog of equation (13) is therefore given by the following equation:

$$c'(b^{\circ\circ\circ\circ}) = \frac{w_1 + \frac{w_2}{\kappa} \left(\frac{N}{\alpha} + \frac{2+\phi}{2} \cdot M \right)}{w_1 + \frac{w_2 N}{\kappa} \left(1 + \mu\beta(1-\alpha) + \frac{2+\phi}{2} \cdot \frac{M}{N} \right)} \geq 1$$

■

Proof of Proposition 6: The proof is similar to the proof of Proposition 2. The only difference is due to the fact that the payoff function of the politician has changed.

The analog to equation (13) is given by the following equation:

$$c'(b^{\circ}) = \frac{w_1 + \frac{w_2}{\kappa} \left(\frac{N}{\alpha} + M \right) - w_3 \cdot \frac{\partial v(\theta, b, s)}{\partial b}}{w_1 + \frac{w_2 N}{\kappa} \left(1 + \mu\beta(1 - \alpha) + \frac{M}{N} \right)}$$

■

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