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AGENCY CONFLICTS, OWNERSHIP CONCENTRATION AND LEGAL SHAREHOLDER PROTECTION

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ABSTRACT

Agency Conflicts, Ownership Concentration and Legal Shareholder Protection*

This Paper analyses the interaction between legal shareholder protection, managerial incentives, and ownership concentration. In our framework, blockholder and manager are distinct parties and the presence of a blockholder can both protect and hurt minority shareholders. Legal shareholder protection affects both the expropriation of shareholders and the blockholder's incentives to monitor. Because of this latter effect and its repercussion on managerial incentives outside ownership concentration and legal shareholder protection can be both substitutes and complements. When legal protection and outside ownership concentration are substitutes, better legal protection may exacerbate rather than alleviate the conflict of interest between large and small shareholders. Moreover, strengthening legal minority shareholder protection may have adverse effects on the behaviour of the manager and of the large shareholder who both enhance share value. Hence, rules aimed at protecting minority shareholders, e.g. equal treatment rules, can be detrimental.

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NON-TECHNICAL SUMMARY

The literature on corporate governance has traditionally concentrated on the conflict of interests between self-interested managers and dispersed small shareholders. In contrast to this image of the modern corporation, empirical research demonstrates that relatively few firms are widely held. The presence of a large shareholder changes the nature of the governance problem relative to widely dispersed ownership. Unlike small shareholders, large blockholders have an incentive to monitor managers. Thus, ownership concentration can mitigate the agency problem between managers and shareholders. Large shareholders, however, can also use their influence to pursue their own goals, possibly at the expense of the minority shareholders.

Following the pioneering work by la Porta et al. (1997), the recent law and finance literature documents an inverse relationship between ownership concentration and quality of legal investor protection. The common argument is that investors are willing to take minority positions and finance companies in countries where legal rules are extensive and well enforced by regulators and courts. By contrast, where the legal framework fails to provide sufficient protection, investors compensate for this deficiency by taking large positions in firms.

This theoretical Paper examines the relationship between legal shareholder protection, managerial incentives and ownership concentration. Our starting point is the observation that several parties in a firm, such as managers and active large investors, contribute to the creation of shareholder value. When contracts are incomplete, empowering one party may discourage investments by others, thereby reducing total surplus. Accordingly, by reducing the scope for private benefits extraction, better legal shareholder protection lowers the manager's incentives to exert effort as well as the large shareholder's incentives to monitor. Because of this latter effect and its repercussion on managerial incentives, outside ownership concentration and legal shareholder protection can be both substitutes or complements. For the same reason, better legal protection may exacerbate rather than alleviate the conflict of interest between large and small shareholders, and rules aimed at protecting minority shareholders, e.g. equal treatment rules, can be detrimental. Thus, the evaluation of governance systems needs to consider the direct and indirect effects of governance mechanisms. In particular, ignoring the effect that legal shareholder protection has on the behaviour of managers and of active large shareholders who both contribute to the creation of share value, may lead to incongruous policy recommendations.

More specifically, we consider a firm with a large shareholder and otherwise dispersed ownership. The large shareholder is not part of the firm's management and can both protect and act against the interests of the minority shareholders. The firm has the prospect of a valuable project which realizes

with some probability only if the manager exerts effort. Given that the project is undertaken, the resulting proceeds can either be paid out to all shareholders on a *pro rata* basis or transformed into private benefits at a dead-weight loss. This decision is taken by the manager if the large shareholder remains uninformed. By contrast, when monitoring is successful, the large shareholder decides whether to pay out the proceeds or whether to divert resources and share the private benefits with the manager. In addition, we formalize better legal shareholder protection as making the expropriation technology less efficient.

When large shareholder and manager can by assumption not share the private benefits, the governance problem is reduced to the traditional conflict of interest between manager and (all) shareholders. In accordance with the widely held view that legal shareholder protection and ownership concentration are substitutes, we find that legal rules and the optimal amount of monitoring are inversely related. Weaker rules enable the manager to extract more private benefits. Therefore, the manager's incentive to exert effort can be preserved even if he is monitored more closely. This does, however, not imply that the optimal ownership concentration also increases. The reason is that weaker legal protection also has a direct impact on the large shareholder's incentives to monitor. The larger expropriation threat induces the large shareholder to monitor more, which in turn discourages effort by the manager. Accordingly, weaker shareholder protection goes together with a decrease (increase) in ownership concentration when its effect on monitoring incentives dominates (is dominated by) its effect on managerial incentives.

Next we relax the assumption of perfectly congruent shareholder interests and allow the informed large shareholder to collude with the manager and to split the private benefits. While collusion promotes both managerial initiative and monitoring, it does not alter the result that legal shareholder protection and ownership concentration may be complements or substitutes. In addition, legal rules also shape the nature of monitoring by determining how much importance the large shareholder attaches to enhancing security benefits relative to extracting private benefits. We find that better legal protection may exacerbate rather than alleviate the conflict of interest between large and small shareholders. When legal protection and outside ownership concentration are substitutes, better legal protection entails a lower ownership concentration. Owning a smaller stake, the large shareholder may choose to divert more corporate resources, even though extraction leads to a larger dead-weight loss.

Finally, we show that rules aimed at preventing collusion between large shareholder and manager can in fact be detrimental to minority shareholders. Strict equal treatment rules among shareholders may result in the underprovision either of effort or of monitoring, because it entitles minority shareholders to claim a large fraction of the surplus. In contrast, collusion

allows the manager and the large shareholder to appropriate a larger fraction of the corporate resources, thereby providing sufficient incentives for both managerial initiative and monitoring.

1 Introduction

The literature on corporate governance has traditionally concentrated on the conflict of interests between self-interested managers and dispersed small shareholders. Within this paradigm, the lack of monitoring due to free-rider problems is the fundamental problem that a good governance structure must overcome.[1] In contrast to this image of the modern corporation, empirical research demonstrates that firms are generally not widely held (Barca and Becht (1999) La Porta, Lopez-de-Silanes and Shleifer (1999)). Outside the United States and the United Kingdom, most firms, even the largest corporations, tend to have a dominant shareholder, while large share stakes and dominant shareholders are a common phenomenon even in the United States (Holderness and Sheehan ((1988), Zwiebel (1995)).

Relative to widely dispersed ownership, the nature of the governance problem changes through the presence of a large shareholder. Unlike small shareholders, large blockholders have an incentive to monitor managers. Thus, ownership concentration can mitigate the agency problem between managers and shareholders. However, large shareholders can use their influence also to pursue their own goals, possibly at the expense of the minority shareholders. Since most firms have in fact a large shareholder, the conflict between large and small shareholders is likely to be at least as relevant as the conflict between managers and shareholders (La Porta, Lopez-de-Silanes and Shleifer (1999)). Hence, the view that ownership concentration necessarily protects minority shareholders is too simplistic. While large shareholders mitigate the traditional corporate agency problem, they are also the source of another agency problem.[2]

The role of ownership concentration as a governance mechanism exemplifies how differences in institutions have implications for the nature of the governance problem. Currently, the relevance of law for corporate governance attracts much attention. Following the pioneering work by La Porta *et al.* (1997), a growing literature argues that cross-country differences in corporate governance, and more broadly in financial systems, are shaped by the quality of legal rules protecting outside investors. One prominent finding of this new law and finance literature, which is summarized by La Porta *et al.* (2000b), is the inverse relationship between ownership concentration and quality of legal investor protection. The common argument is that investors are willing to take minority positions and finance companies in countries where legal rules are extensive and well enforced by regulators and courts. By contrast, where the legal framework fails to provide sufficient protection, investors compensate for this deficiency by taking large positions in firms.

This paper analyzes the interaction between legal shareholder protection, managerial incen-

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[1] The market for corporate control (takeovers) and corporate financial structure (leverage) are typically regarded as important external control mechanisms to discipline managers when firms are widely owned.

[2] Berglöf and von Thadden (1999) propose a broader view of corporate governance which includes stakeholders as well as the vertical linkages of a firm and the product market competition it faces.

tives, and ownership structure in a setting where the large shareholder is not part of the firm's management and can both protect and act against the interests of the minority shareholders. Our starting point is the observation that several parties in a firm, such as managers and active large investors, contribute to the creation of shareholder value. The distribution of corporate surplus affects the parties' incentives to make firm-specific investments and thus determines the size of the surplus (Grossman and Hart (1986)). When contracts are incomplete, empowering one party may discourage investments by others. Consequently, the allocation of power among the different constituencies in a firm is an important determinant of shareholder value.[3]

As the law and finance literature emphasizes, legal shareholder protection affects the ease with which the manager, possibly in collusion with the large shareholders, can divert corporate resources. We argue that there is another effect which the literature has overlooked: the quality of legal rules also shapes the large shareholders' incentives to monitor. That is, the law affects the mapping from ownership concentration to monitoring. This has implications for the relationship between legal shareholder protection and outside ownership concentration, because shareholder control through monitoring weakens the manager's incentives to undertake valuable investments. Due to this effect, ownership concentration and legal shareholder protection can be both substitutes or complements. For the same reason, better legal protection may exacerbate rather than alleviate the conflict of interest between large and small shareholders, and rules aimed at protecting minority shareholders, e.g., equal treatment rules, can be detrimental.

More specifically, we consider a firm with a large shareholder and otherwise dispersed ownership. The firm has the prospect of a valuable project which realizes with some probability only if the manager exerts effort. Given that the project is undertaken, the resulting proceeds can either be paid out to all shareholders on a pro-rata basis or transformed into private benefits at a dead-weight loss. This decision is taken by the manager, if the large shareholder remains uninformed. By contrast, when monitoring is successful, the large shareholder decides whether to pay out the proceeds or whether to divert resources and share the private benefits with the manager. Within this framework, ownership concentration has benefits as well as costs (Burkart *et al.* (1997)). When the large shareholder monitors more due to a larger stake, he is more likely to control the resource allocation. This in turn reduces the manager's incentive to exert effort because he is less likely to extract (large) private benefits. Since managerial initiative is indispensable for the project to be undertaken, maximizing net shareholder return may require to constrain monitoring by limiting ownership concentration.

Our model obviously assumes that the large shareholder and the manager are distinct

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[3]Tirole (2000) distinguishes between two main approaches to corporate governance; the shareholder value perspective and the stakeholder society perspective. We do not argue here in favor of either perspective. Instead, we simply point out that several parties contribute to the creation of share value, even when one subscribes to the shareholder value perspective.

parties, irrespective of the block size. In our view, this definition of insider and outsider is not refuted by the observation that many controlling owners are Board Members and participate in management.[4] Being a Board Member or even its Chairman is quite different from being the CEO of the firm, and their interests are likely to differ.[5] This does, however, not preclude that they may on occasions collude at the expense of third parties.

The resource allocation decision, or more appropriately, the extent of private benefit extraction is subject to legal constraints. We assume that better legal rules make the expropriation technology less efficient, as in e.g., Shleifer and Wolfenzon (2000). In addition to constraining the diversion of corporate resources, legal rules, in particular equal treatment provisions, also affect the transferability of private benefits, and thereby the extent to which the large shareholder's interests conflict with those of the manager and with those of the small shareholders. In fact, congruent shareholder interests may be viewed as the outcome of legal rules that make unequal treatment prohibitively costly. Besides legal constraints, there are other reasons which may prevent the manager and the large shareholder from splitting private benefits. For instance, private benefits may require consumption on the job, such as perks or labor hoarding, or may be indivisible, and the manager has insufficient wealth to compensate the large shareholder. The transferability of private benefits may also depend on the identity of a large shareholders. Typically, institutional investors (or their representatives) are viewed as being interested in security benefits, while a supplier or customer of the firm can benefit from preferential transaction terms. In our analysis, we assume that private benefits are either transferable or non-transferable for non-regulatory reasons and examine both cases separately.

When private benefits are not transferable, the governance problem is reduced to the traditional conflict of interest between manager and (all) shareholders. Within our framework, the link between ownership concentration and legal shareholder protection proves to be more complex than an inverse relationship. In accordance with the widely-held view that legal shareholder protection and ownership concentration are substitutes, we find that legal rules and the optimal amount of monitoring are inversely related. Weaker rules enable the manager to extract more private benefits. Therefore the manager's incentive to exert effort can be preserved even if he is monitored more closely. This does, however, not imply that the optimal ownership

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[4]Examining the ownership structure of the 20 largest firms in 27 countries, La Porta, Lopez-de-Silanes, and Shleifer (1999) document that 75 percent of the firms with a controlling shareholder typically do not have another large shareholder. Concerning the separation between ownership and management, they find that 69 percent of controlling families also participate in management, i.e., a family member is listed as CEO, Chairman, Honorary Chairman, or Vice-Chairman. Strangely enough, this proportion is larger in countries with good legal shareholder protection (75 percent) than in countries with poor protection (64 percent).

[5]The Agnelli family is generally considered to firmly control Fiat, the Italian car manufacturer. In 1976, when Giovanni Agnelli was the Chairman of the Board, the CEO of Fiat, De Benedetti, tried to gain control of Fiat at the expense of the Agnelli. Although this attempt was successfully stopped by Giovanni Agnelli, it illustrates that controlling shareholder and manager are not a team but distinct parties, each with its own interests.

concentration also increases. The reason is that weaker legal protection also has a direct impact on the large shareholder's incentives to monitor. The larger expropriation threat induces the large shareholder to monitor more which in turn discourages effort by the manager. Accordingly, weaker shareholder protection goes together with a decrease (increase) in ownership concentration when its effect on monitoring incentives dominates (is dominated by) its effect on managerial incentives.

Next we relax the assumption of perfectly congruent shareholder interests and allow the informed large shareholder to collude with the manager and to split the private benefits. Collusion promotes both managerial initiative and monitoring since it allows manager and large shareholder to receive private benefits without making payments to the small shareholders. The optimal ownership concentration may entail collusion because aligning shareholder interests and managerial initiative are conflicting objectives. As in the case with perfectly congruent shareholder interests, legal protection and changes thereof affect the behavior of both the manager and the large shareholder. Hence, collusion does not alter the result that legal shareholder protection and ownership concentration may be complements or substitutes. When there is collusion, legal rules also shape the nature of monitoring by determining how much importance the large shareholder attaches to enhancing security benefits relative to extracting private benefits. We find that better legal protection may exacerbate rather than alleviate the conflict of interest between large and small shareholders. When legal protection and outside ownership concentration are substitutes, better legal protection entails a lower ownership concentration. Owning a smaller stake, the large shareholder may choose to divert more corporate resources, even though extraction leads to a larger dead-weight loss.

Our analysis indicates that the overall impact of legal rules on minority shareholder wealth is difficult to assess. Strengthening legal minority shareholder protection may have adverse effects on the incentives of other parties that are essential for the creation of shareholder value. Hence, rules aimed at protecting shareholders against expropriation can be counterproductive due to the indirect effects on the behavior of manager and large shareholder. As an example, we show that when there are restrictions on the precise amount of monitoring that can be implemented, say due to a fixed cost, collusion need not be detrimental for small shareholder. Absent the possibility of collusion, there are two options. Either the large shareholder owns a sufficiently large block that allows him to recoup the fixed cost, provided that the project is undertaken. This may, however, reduce private benefits to a level which fails to induce managerial effort. Alternatively, managerial initiative can be implemented by relinquishing monitoring and leaving control entirely in the hands of the manager. In contrast, collusion allows manager and large shareholder to appropriate a larger fraction of the corporate resources, thereby providing sufficient incentives for both managerial initiative and monitoring. Small

shareholder benefits from collusion because the project is undertaken and because a manager of a widely dispersed firm diverts more resources than the coalition of manager and larger shareholder.

Our paper is closely related to Burkart *et al.* (1997) who show that ownership dispersion is a commitment device to delegate some effective control to the manager. In their model, the optimal ownership concentration solves a trade-off between initiative and control. The present paper applies this basic trade-off to examine the relationship between legal shareholder protection and optimal outside ownership concentration, allowing for both congruent and conflicting shareholder interests. Boot and Macey (1999) argue that effective supervision of managers is best performed if the monitor, say a large shareholder, is both well informed and objective. However, while proximity improves the quality of information, it implies a loss of objectivity, as the monitor becomes an insider. The trade-off between proximity and objectivity has a bang-bang solution. Our analysis shows that proximity and objectivity are not necessarily conflicting objectives. When the large shareholder owns a larger stake, he monitors more and his interests are more likely to coincide with those of the small shareholders.

The relationship between ownership structures and levels of private benefits has been addressed among others by Grossman and Hart (1988), Zingales (1995), Zwiebel (1995). Some of this theoretical literature explicitly examines the role of legal shareholder protection. Bebchuk (1999) proposes a rent protection theory of corporate ownership. In his model, large private benefits which typically accompany poor legal shareholder protection make a dispersed ownership structure instable, despite its inherent inertia caused by the free-rider behavior of small shareholders. Anticipating the instability, the initial owners choose to retain control by maintaining a large block. La Porta *et al.* (1999) show how better legal protection enables an entrepreneur to raise more outside finance, and Shleifer and Wolfenzon (2000) examine the impact of legal shareholder protection in a market equilibrium model. Wolfenzon (1999) and Bebchuk *et al.* (1999) argue that pyramids, cross shareholding structures, and dual class shares are conducive to the extraction of private benefits and more common in environments with poor investor protection. In all these papers, ownership concentration is beneficial irrespective of the quality of the law because it aligns the insiders' interests with those of the investors. Outside finance arises either because the entrepreneur is wealth-constrained or the founders want to sell (part of) the firm. In our model, the hired manager and the large shareholder are two different parties and outside ownership concentration comes with benefits but also with costs.

Finally, the result that equal treatment provisions may harm minority shareholders has been shown before in different settings. For instance, efficient transfers of control may be feasible only if the bidder can discriminate against minority shareholders by diluting their return rights (Grossman and Hart (1980)) or by paying the incumbent blockholder a premium (Bebchuk

(1994)). Beetsma *et al.* (2000) show that collusion between manager and board of directors can be in the interest of shareholders.

The paper is organized as follows. Section 2 outlines the model. Section 3 examines the relationship between optimal outside ownership concentration and the quality of legal shareholder protection when all shareholders have perfectly congruent objectives. Section 4 extends the analysis to the case of conflicting interests among shareholders. Section 5 illustrates how small shareholders may benefit from the collusion between manager and large shareholder. Section 6 concludes. Mathematical proofs are provided in the appendix.

2   Model

Consider a firm run by a risk-neutral manager (M) who, for simplicity, owns no shares. A fraction α of shares is held by a single investor, the large shareholder (L), while the remaining fraction $1 - \alpha$ is dispersed among small shareholders. All shareholders are risk-neutral. At date 1, the manager chooses to exert a non-verifiable effort $e \in \{0, 1\}$ at a cost ce.[6] If the manager does not exert effort, the date 3 value of the resources created by the firm remains unchanged and is normalized to zero. If $e = 1$, the manager finds with probability p a project that generates additional certain resources Π at date 3. More generally, the manager's effort could be thought of as any non-contractible value-enhancing investment. For simplicity, we abstract from monetary incentives. Accordingly, the prospect of private benefits induces the manager to exert effort. We discuss the robustness of our results with respect to monetary incentives at the end of section 3.

After having observed the manager's effort choice, shareholders can at date 2 exert a non-verifiable monitoring effort $E \in [0, 1]$ at a cost $\dfrac{E^2}{2}$. Due to the free-riding by small shareholders (say due to a small opportunity cost), only the large shareholder has an incentive to monitor. If the manager finds the new project, the large shareholder also identifies it with probability E, but remains uninformed with probability $(1 - E)$. If the manager fails to find the project, so does the large shareholder, irrespective of the monitoring level.

At date 3, the proceeds from the project can either be paid out to all shareholders proportionally to their shareholdings or they can be diverted to generate private benefits. The non-contractible resource allocation decision is modelled by the choice of $\phi \in [0, 1]$ such that security benefits are $(1 - \phi)\Pi$ and private benefits are $[\phi - \rho(\phi, \lambda)]\Pi$, where the parameter λ is a measure of legal shareholder protection.

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[6] Our results carry over to a continuous effort choice model, provided that the response of managerial effort to monitoring is on the margin, i.e., de/dE, sufficiently large.

Assumption 1 *The function $\rho(\phi, \lambda)$ is strictly increasing and convex in $\phi \in [0, 1]$ with $\rho_\phi(0, \lambda) = 0$ and $\rho_\phi(1, \lambda) \geq 1$.*

Assumption 1 stipulates that the marginal private benefits decrease when diversion of corporate resources increases for a given level of legal protection λ. The conditions $\rho_\phi(0, \lambda) = 0$ and $\rho_\phi(1, \lambda) \geq 1$ ensure an interior solution of ϕ. Equivalent assumptions for the expropriation technology can be found in Burkart *et al.* (1998).

Which fraction of Π is diverted for private benefits depends on the identity of the decision-maker and the legal environment. If the large shareholder remains uninformed, the manager decides the resource allocation. If monitoring is successful, the large shareholder and the manager take this decision jointly. This is modelled by the following bargaining game. With probability $1 - \psi$, the large shareholder chooses ϕ and makes a take-it-or-leave-it offer how to share the resulting private benefits $[\phi - \rho(\phi, \lambda)]\Pi$ with the manager. The manager either accepts the offer or rejects it in which case ϕ is equal to zero. With the complementary probability ψ, the manager sets ϕ and offers part of the private benefits to the large shareholder who either accepts it or rejects it in which case ϕ is again equal to zero.[7]

Both the unilateral choice of ϕ by the manager and the joint decision by the manager and the large shareholder are subject to legal constraints. Following the suggestion of La Porta *et al.* (2000b), better legal shareholder protection renders the expropriation technology less efficient. More precisely, we assume that the marginal dead-weight loss associated with the extraction of private benefits increases with the quality of legal protection.[8] Formally, we impose the following conditions on the dead-weight loss function.

Assumption 2 *The function $\rho(\phi, \lambda)$ satisfies $\rho_\lambda(\phi, \lambda) > 0$ and $\rho_{\phi\lambda}(\phi, \lambda) > 0$.*

Weak legal protection may be either due to poor quality of the law or to ineffective enforcement (Pistor *et al.* 2000). We abstract from such differences and let λ represent the actual level of legal protection, with higher values of λ corresponding to better protection.

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[7]Our bargaining game implies that the manager receives in expectation part of the private benefits if the large shareholder consents to divert corporate resources. This is tantamount to assuming that the manager is indispensable for the extraction of private benefits, say due to his knowledge and expertise. Otherwise, the informed large shareholder would have no reason to share the private benefits with the manager.

[8]Alternatively, one may model legal shareholder protection as limiting the extent to which corporate resources can be diverted. Our results also hold when legal protection imposes an upper bound $\bar{\phi}$ on the choice of ϕ, with lower levels of $\bar{\phi}$ corresponding to better shareholder protection. An example of legal measures aiming at directly restricting the ability to expropriate minority shareholders are mandatory dividend rules, common in French-civil-law countries (La Porta *et al.* (1988)). Accounting standards and disclosure rules are examples of legal protection measures that directly affect the expropriation technology. In our view, there is no obvious ranking between the two ways of modelling legal shareholder protection, despite these fitting examples. Moreover, many rules cannot be clearly classified as either imposing an upper bound on ϕ or affecting the inefficiency of private benefit extraction. For instance, the shareholders' right to challenge the directors' decision in court may be either viewed as the former or the latter, depending upon the kind of decision that one has in mind.

The recent empirical law and finance research documents that the quality of legal protection affects patterns of corporate ownership and finance. We capture this notion in a pronounced manner and assume that the law is mandatory and puts effective constraints on the resource allocation decision. Thus, private parties cannot opt out of the legal provisions and the law effectively prescribes the expropriation technology $\rho(\phi, \lambda)$ available to the manager and the large shareholder. This can be motivated by the argument that the law completes private contracts, i.e., fills their gaps: A corporate charter cannot possible specify all contingencies such as to exclude or limit the uncountable ways in which managers (and large shareholders) may extract private benefits. The law through its general principles (e.g., fiduciary duty, business judgement rule) provides guidelines applicable to a wide range of contingencies, thereby limiting shareholder expropriation (much more) effectively.

3   Non-transferable Private Benefits

This section derives the optimal ownership structure when private benefits of control are non-transferable and shows that a reduction in the quality of legal protection may go together with an increase or a decrease in the block held by the large shareholder.

Solving the game by backward induction, we first derive the resource allocation decision. Given that the firm undertakes the new project, the manager and the large shareholder decide at date 3 how to allocate the proceeds Π between private benefits and security benefits. If the large shareholder is informed (with probability E), he and the manager bargain over the resource allocation. As the large shareholder, by assumption, cannot reap any private benefits, he imposes a zero level of extraction. More specifically, he either proposes $\phi = 0$ or rejects any offer $\phi > 0$ by the manager. Hence, when monitoring is successful, shareholders receive all the proceeds Π and the manager obtains zero.

If monitoring fails, the manager unilaterally decides what fraction of resources to divert as private benefits. The manager chooses the allocation ϕ, maximizing his payoff $\phi - \rho(\phi, \lambda)$. Denote by ϕ^0 the allocation satisfying the manager's first-order condition $\rho_\phi(\phi, \lambda) = 1$. Assumption 1 ($\rho_\phi(1, \lambda) \geq 1$) implies $\phi^0 \leq 1$. Moreover, better legal shareholder protection reduces the expropriation of shareholders by the manager ($d\phi^0/d\lambda = -1/\rho_{\phi\phi} < 0$).[9] Thus, when the large shareholder remains uninformed, the manager extracts private benefits $[\phi^0 - \rho(\phi^0)]\Pi$, whereas the shareholders realize a payoff $(1 - \phi^0)\Pi$. The discrepancy between the manager's choice of ϕ and that of the large shareholder also illustrates the difference between control rights and effective control (Aghion and Tirole (1997)). Exercising control rights requires successful

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[9]Rather than assuming $\rho(1, \lambda) \geq 1$, we could postulate that the manager holds a small fraction ω of shares. In the absence of shareholder interference, the manager would set $\phi = \phi^\omega < 1$, where ϕ^ω satisfies $\rho_\phi(\phi, \lambda) = 1 - \omega$. Better legal shareholder protection would still reduce mitigate the agency problem as $d\phi^\omega/d\lambda < 0$.

monitoring, otherwise the manager retains effective control.

Next we analyse the large shareholder's monitoring incentives and the manager's effort decision. To simplify the exposition, we concentrate on the interesting parameter configuration where the large shareholder never becomes informed with probability 1 ($E < 1$), and where the manager is willing to exert effort $e = 1$ in the absence of monitoring.

Assumption 3 $1 > p\Pi \geq \dfrac{c}{[\phi^0 - \rho(\phi^0, \lambda)]}$

At date 2, the large shareholder decides to monitor after having observed the manager's effort choice. If the manager does not exert effort, the project is never undertaken and monitoring is redundant. If the manager exerts effort $e = 1$, the large shareholder maximizes his total return

$$V_L^{NC} = \alpha \left[E + (1 - E)(1 - \phi^0) \right] p\Pi - \frac{E^2}{2}.$$

He receives a fraction α of the security benefits which are equal to Π when he is informed and equal to $(1 - \phi^0)\Pi$ when is not informed. By Assumption 3, the FOC gives

$$E = \alpha\phi^0 p\Pi.$$

with $\partial E/\partial \alpha = \phi^0 p\Pi > 0$ and $\partial E/\partial \lambda = \alpha p\Pi(d\phi^0/d\lambda) < 0$. Given $e = 1$, a larger stake and a lower quality of legal protection induce the large shareholder to monitor more. In the former case, the large shareholder reaps a larger part of the improvement in security benefits, and in the latter case, monitoring becomes more valuable because it prevents larger expropriation by the manager.

Given E and the choices of ϕ, the manager chooses $e = 1$ only if

$$(1 - E)[\phi^0 - \rho(\phi^0, \lambda)]p\Pi - c \geq 0$$

or equivalently if

$$E \leq E^{NC} \equiv 1 - \frac{c}{[\phi^0 - \rho(\phi^0, \lambda)]p\Pi}$$

The manager's effort choice depends on the likelihood of having effective control. Obviously, successful monitoring with probability 1 annihilates all prospects of extracting private benefits, thereby frustrating managerial initiative. Thus, the maximum level of monitoring preserving managerial initiative (E^{NC}) is smaller than 1. Similarly, if private benefits are relatively small, say due to a strict legal shareholder protection, the manager cannot be induce to exert effort even in the absence of monitoring ($E = 0$). Assumption 3 excludes this possibility, and managerial initiative ($e = 1$) depends on how likely it is that the manager has effective control, i.e., that monitoring fails.[10] The maximum level of monitoring that preserves managerial

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[10] We impose as a tie-breaking rule that the manager chooses $e = 1$ when he is indifferent between effort and no effort , i.e., when $E = E^{NC}$.

incentives decreases with the quality of legal shareholder protection ($dE^{NC}/d\lambda < 0$). Better legal protection reduces the amount of private benefits that the manager can extract. As a result of the reduced rents, the manager is willing to exert effort only if he is more likely to have effective control over the resource allocation.

Legal investor protection affects both managerial initiative and the large shareholder's incentive to monitor, albeit in a different manner. Unlike the manager, the large shareholder's behavior is not directly affected by the extent of the dead-weight loss $\rho(\phi, \lambda)$ associated with the extraction of private benefit. Being excluded from the consumption of private benefits, his only concern is what fraction ϕ the manager can divert if monitoring fails.

Lemma 1 *i) For $\phi^0 p\Pi < 1 - \dfrac{c}{[\phi^0 - \rho(\phi^0, \lambda)]p\Pi}$, the manager exerts $e = 1$ for any level of α, and the large shareholder chooses $E = \alpha\phi^0 p\Pi$.*

ii) For $\phi^0 p\Pi \geq 1 - \dfrac{c}{[\phi^0 - \rho(\phi^0, \lambda)]p\Pi}$, the manager exerts effort $e = 1$ and the large shareholder chooses $E = \alpha\phi^0 p\Pi$ only if $\alpha \leq \alpha^{NC} \equiv \dfrac{1}{p\Pi\phi^0}\left[1 - \dfrac{c}{[\phi^0 - \rho(\phi^0, \lambda)]p\Pi}\right]$.

When legal shareholder protection is effective (ϕ^0 low), the large shareholder faces a low risk of expropriation and consequently exerts relatively little monitoring for any block size α. Since the manager is then sufficiently likely to have effective control, he is willing to exert the high effort level by virtue of Assumption 3 ($[\phi^0 - \rho(\phi^0)]p\Pi \geq c$). By contrast, when legal shareholder protection is not very effective (ϕ^0 high), the large shareholder has an incentive to monitor the manager closely. Consequently, managerial initiative is frustrated unless the monitoring incentives are curtailed by a relatively small block.[11]

The optimal ownership concentration maximizes the shareholder return net of monitoring cost. If the manger chooses $e = 0$, the project is never undertaken and shareholder return is 0 for any ownership structure. If the manager exerts effort $e = 1$, net shareholder return is equal to

$$V^{NC} = p\Pi\left[E + (1 - E)(1 - \phi^0)\right] - \frac{E^2}{2}.$$

Differentiating V^{NC} with respect to α and substituting the large shareholder's best response ($E = \alpha\phi^0 p\Pi$) yields $dV^{NC}/d\alpha = (dE/d\alpha)(1 - \alpha)\phi^0 p\Pi > 0$. Net shareholder return increases in ownership concentration, provided that it does not frustrate managerial initiative, i.e., that $E \leq E^{NC}$ holds. Thus, the equilibrium ownership structure is as concentrated as possible subject to the manager's incentive constraint.

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[11]In a simultaneous move game, or equivalently if the large shareholder were to monitor without having observed the manager's effort choice, there is a mixed-strategy equilibrium for $\alpha > \alpha^{NC}$, where the manager randomizes between $e = 0$ and $e = 1$ and the shareholder chooses $E = E^{NC}$. Assuming simultaneous moves would not affect the analysis in this section because the mixed-strategy equilibria are Pareto-dominated. When private benefits are transferable (section 4), pure and mixed-strategy equilibria are difficult to Pareto-ranked without assuming a specific dead-weight loss function $\rho(\phi, \lambda)$.

Lemma 2 *i) For* $\phi^0 p\Pi \geq 1 - \dfrac{c}{[\phi^0 - \rho(\phi^0, \lambda)]p\Pi}$, $\alpha^* = \dfrac{1}{p\Pi\phi^0}\left[1 - \dfrac{c}{[\phi^0 - \rho(\phi^0, \lambda)]p\Pi}\right] < 1$.
ii) For $\phi^0 p\Pi < 1 - \dfrac{c}{[\phi^0 - \rho(\phi^0, \lambda)]p\Pi}$, $\alpha^* = 1$.

Sizeable private benefits $[\phi^0 - \rho(\phi^0)]p\Pi > c$ (Assumption 3) are only a necessary condition for managerial initiative, because monitoring gives rise to two opposing effects. On the one hand, more monitoring reduces the risk of expropriation by the manager. This control effect is beneficial. On the other hand, more shareholder control deprives the manager of his private benefits, thereby reducing managerial initiative. This initiative effect constitutes the cost of ownership concentration (Burkart *et al.* (1997)). Since managerial initiative boosts shareholder return, it may be optimal to restrict monitoring by partly dispersing share ownership. Full ownership concentration ($\alpha^* = 1$) is optimal only if monitoring that receives 100% of the gains does not deter managerial effort. This holds when monitoring is very costly, the manager's disutility of effort is low, and potential private benefits are large, in particular ϕ^0 is large. Otherwise, net shareholder return is maximized by limiting ownership concentration because it leaves sufficient control and hence private benefits to induce managerial initiative.[12]

Having derived the optimal ownership concentration, we can now analyze the relationship between ownership concentration and legal shareholder protection. We restrict our attention to the case where there is an internal solution for α.

Proposition 1 *When private benefits are non-transferable, weaker legal shareholder protection (a decrease in λ) may imply a lower or a higher optimal outside ownership concentration α^*.*

A reduction in the quality of legal protection has two conflicting effects. On the one hand, it entails large private benefits and hence an increase in the maximum level of monitoring that is compatible with managerial initiative (E^{NC}). Ceteris paribus, the increase in E^{NC} translates into a higher optimal ownership concentration. On the other hand, it also increases the returns from monitoring for a given stake α. As closer monitoring stifles managerial initiative, the increased monitoring incentives have to be countered with a reduction in ownership concentration.

The intuition for the ambiguous net effect is perhaps best understood by examining the condition for the optimal ownership concentration. The optimal block size satisfies the condition $E = \alpha p\phi^0(\lambda)\Pi = E^{NC}(\phi^0(\lambda))$. An increase in λ reduces both sides of the condition. If the response of the initiative effect ($\frac{dE^{NC}}{d\lambda}$) exceeds the one of the monitoring incentives ($\frac{dE}{d\lambda}$),

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[12]Once the manager has exerted effort $e = 1$, increasing monitoring reduces the risk of expropriation by the manager, and net shareholder return increases in the block size. This gain does, however, not materialize when trading is not anonymous. When investors are fully informed, the large shareholder cannot make a profit on traded shares and has no incentive to alter his stake. Thus, the optimal ownership structure is robust if markets are fully transparent (Pagano and Röell (1998)).

the optimal outside ownership concentration has to increase in order to restore the equality. Conversely, when the impact of a weakened legal protection is stronger on the monitoring incentives, the large blockholder's stake needs to be reduced.

Our result that weaker shareholder protection may also go together with lower ownership concentration conflicts the widely-held view in the law and finance literature, that ownership concentration and legal protection are substitutes. We like to emphasize that our result concurs with the view that weaker legal rules require more monitoring. As discussed above, the maximum level of monitoring that preserves managerial initiative E^{NC} is inversely related to the quality of investor protection. Thus, our model concurs with the argument that more monitoring improves return on equity when legal protection is weak. In addition, it suggests an alternative interpretation: Only regimes of weak legal shareholder protection allow for close monitoring. In regimes with good shareholder protection, frequent shareholder interference would frustrate managerial initiative.

Proposition 1 differs from the common view in that it explicitly accounts for the impact of legal rules on the incentives to monitor. As weaker shareholder protection increases both shareholder expropriation and monitoring, implementing a higher optimal level of monitoring, i.e., E^{NC}, may require a higher or lower outside ownership concentration. That is, shareholder protection and outside ownership concentration may vary in the same direction or in opposite directions.

The identity of the blockholder is another important reason why our result differs, predicting that changes in the quality of shareholder protection may go together with an increase or a decrease in ownership concentration. Other Law and Finance papers, e.g., La Porta *et al.* (1999) and Shleifer and Wolfenzon (2000) consider inside ownership concentration, i.e., owner-managers. In these models, legal shareholder protection and ownership concentration are substitutes; the former reduces private benefit extraction because better rules make the expropriation technology less efficient, the latter because an owner-manager with a larger stake internalizes more of the dead-weight loss associated with private benefit extraction. In fact, irrespective of the quality of legal investor protection, more inside ownership concentration is always beneficial, as it reduces inefficient private benefit extraction. Outside finance arises because owner-managers are wealth-constrained, and the inverse relationship between ownership concentration and legal shareholder protection follows from a multiplier effect. Better legal protection increases the amount of pledgeable funds. This enables an entrepreneur with some given wealth to raise more outside funds, thereby lowering the fraction that his wealth contributes to the overall funding, i.e., his equity stake. If our framework is modified into an inside equity model (by removing the initiative effect and by allowing managerial equity), it would also deliver these results. Thus, our analysis supports the view that legal shareholder

protection and inside ownership concentration are substitutes, but also establishes that the relationship is more intricate in case of outside ownership concentration.

Introducing monetary incentives for the manager does not qualitatively alter the above results. Within our model, wages can both induce the manager to exert effort and align his interests with those of the shareholders. Since project proceeds are observable (although not verifiable) and private benefit extraction is inefficient, manager and shareholders renegotiate to avoid diversion of corporate resources. This is achieved by a bonus which is equal to zero unless the manager pays out the entire project proceeds Π. In the latter case, the bonus is equal to the private benefits that the manager could extract given the legal constraints. Obviously, the optimal bonus is decreasing with the quality of the legal shareholder protection. The bonus does, however, not generally make monitoring redundant because successful monitoring enables shareholders to control the resource allocation without paying the manager a bonus. When the (expected) private benefits exceed the manager's effort cost, ownership is (partially) concentrated, and the manager receives a bonus only if monitoring fails. Otherwise, ownership is fully dispersed, and when the manager finds the project he receives a wage and a bonus such that the (expected) sum of wage and bonus cover the effort cost. Thus, the qualitative properties of the optimal ownership structure are the same as in the absence of monetary incentives. When the quality of the legal shareholder protection is very high, ownership is dispersed, and the manager is not monitored. In regimes with weaker legal protection, ownership is concentrated to induce monitoring. The relationship between ownership concentration and legal protection is once again not monotonic.

Finally, we like to point out that the ambiguous relationship between legal shareholder protection and outside ownership concentration could emerge in other frameworks than our model. In fact, the result is more general, as it does not hinge on the adverse initiative effect. Models based on other costs of ownership concentration could also deliver this result, provided that changes in the legal protection affect these costs directly. Consider for instance a framework with risk-averse (large) investors. Provided that the variance of the security benefits increases following a reduction in shareholder protection, the overall impact on the optimal ownership concentration may also be ambiguous. We base our model on the initiative effect because it captures one important difference between inside and outside equity ownership (concentration). In a firm with a manager-owner and otherwise dispersed small shareholders, neither lacking initiative nor excessive shareholder interference are essential issues.

4 Transferable Private Benefits

When the large shareholder can tap (part of the) private benefits, his interests may not be congruent with those of the small shareholder. Such a conflict of interests among shareholders

is another reason why legal shareholder protection and outside ownership concentration differ. The law protects all shareholders from managerial expropriation, while the large shareholder stands up for his own interests. That is, the large shareholder can use his power and information to protect himself against expropriation by the manager, without simultaneously fending off minority shareholder expropriation.

In this section, we allow for the possibility that the (informed) large shareholder colludes with the manager at the expense of the small shareholder. More precisely, private benefits can now be shared between the manager and the large shareholder at no costs other than the dead-weight loss of extraction. As a result, the large shareholders' interests are partially aligned with those of the manager and with those of the small shareholders.

As in the previous section, we start solving the game by deriving the resource allocation, given that the project is undertaken. When monitoring fails (with probability $1 - E$), the resource allocation remains unchanged. Having effective control, the manager chooses ϕ as in section 3. Thus, he appropriates private benefits $[\phi^0 - \rho(\phi^0, \lambda)]\Pi$, and the shareholders receive security benefits $(1 - \phi^0)\Pi$.

When the large shareholder is informed, he can agree to divert resources and share the private benefits with the manager, who is by assumption indispensable for the private benefit extraction. Alternatively, the informed large shareholder can also impose the zero diversion. Accordingly, the outside options of the large shareholder and the manager in the bargaining are $\alpha\Pi$ and 0 respectively. When the manager proposes a resource allocation (with probability ψ), he has to fully compensate the large shareholder for the value reduction of the block. Unless the manager offers $\alpha\phi\Pi$, the large shareholder reject the proposal. Thus, the manager chooses ϕ to maximizes $[\phi - \rho(\phi, \lambda) - \alpha\phi]\Pi$. When the large shareholder sets ϕ (with probability $1 - \psi$), he simply maximizes his payoff $[\alpha(1 - \phi) + \phi - \rho(\phi, \lambda)]\Pi$, as the manager's outside option is zero. As both parties' objective functions (with respect to ϕ) coincide, the analysis of the bargaining game simplifies to maximizing the joint coalition payoff $[\alpha + \phi(1 - \alpha) - \rho(\phi, \lambda)]\Pi$. Denote by ϕ^α the solution to the first-order condition $(1 - \alpha) = \rho_\phi(\phi, \lambda)$. As the joint coalition payoff $[\alpha + \phi^\alpha(1 - \alpha) - \rho(\phi^\alpha, \lambda)]\Pi$ exceeds the sum of the outside options $\alpha\Pi$, the large shareholder and the manager always agree to collude. Given that the manager (large shareholder) makes a take-it-or-leave-it offer how to share the private benefits with probability ψ $(1 - \psi)$, the expected collusion payoffs are

$$U_M = \psi \left[(1 - \alpha)\phi^\alpha - \rho(\phi^\alpha, \lambda)\right]\Pi$$

and

$$U_L = \left[\alpha + (1 - \psi)[(1 - \alpha)\phi^\alpha - \rho(\phi^\alpha, \lambda)]\right]\Pi.$$

Although our formalization of the resource allocation decision with the help of Nash bar-

gaining is rather stylized, it has some appealing properties. In particular, the share of private benefits that the manager can secure for himself is inversely related to the size of the large shareholder's block ($\partial U_M / \partial \alpha = -\phi^\alpha < 0$). Thus, when outside ownership concentration is relatively low, the manager extracts ceteris paribus a larger fraction of the private benefits, reflecting his increased discretion. While the large shareholder colludes with the manager at the expense of the small shareholders, the extent of diversion is inversely related to the size of the block. As the stake α increases, the large shareholder's interests become more aligned with those of the dispersed shareholders. He internalizes more of the inefficiency and extracts less private benefits.

At date 2, the large shareholder monitors only if the manager exerts effort at date 1. Having observed $e = 1$, the large shareholder maximizes his total return

$$V_L^C = E\left[\alpha + (1 - \psi)[(1 - \alpha)\phi^\alpha - \rho(\phi^\alpha, \lambda)]\right]p\Pi + (1 - E)\alpha(1 - \phi^0)\Pi - \frac{E^2}{2}$$

By Assumption 3, the FOC gives

$$E = \left[\alpha\phi^0 + (1 - \psi)[(1 - \alpha)\phi^\alpha - \rho(\phi^\alpha, \lambda)]\right]p\Pi$$

The large shareholder monitors to avoid expropriation of his stake and to extract private benefits. Reflecting these motives, tighter shareholder protection, more managerial bargaining power, and a smaller block all reduce the level of monitoring, because either private benefits, the large shareholder's share thereof, or the expropriation threat (of his stake) are diminished ($\partial E / \partial \lambda < 0$, $\partial E / \partial \psi < 0$, and $\partial E / \partial \alpha > 0$). In contrast to section 3, a fully dispersed ownership structure does not prevent monitoring. The mere prospect of reaping private benefits induces the large shareholder to monitor, and $E(\alpha = 0) > 0$.

At date 1, the manager chooses $e = 1$ only if

$$\left[(1 - E)(\phi^0 - \rho(\phi^0, \lambda)) + E\psi\left[(1 - \alpha)\phi^\alpha - \rho(\phi^\alpha, \lambda)\right]\right]p\Pi \geq c$$

or equivalently if

$$E \leq E^C \equiv \min\left[1, \frac{\left[(\phi^0 - \rho(\phi^0, \lambda))p\Pi - c\right]}{\left[(\phi^0 - \rho(\phi^0, \lambda)) - \psi\left((1 - \alpha)\phi^\alpha - \rho(\phi^\alpha, \lambda)\right)\right]p\Pi}\right]$$

It follows from $(1 - \alpha)\phi^\alpha - \rho(\phi^\alpha, \lambda) > 0$ that $E^{NC} \leq E^C$. Collusion promotes managerial initiative (unless $\psi = 0$) because the manager also receives private benefits when the large shareholder is informed, albeit less than when monitoring fails. Hence, collusion lowers the cost of ownership concentration. If $E^C < 1$, tighter shareholder protection, less managerial bargaining power, and higher outside ownership concentration all reduce the maximum level of monitoring preserving managerial initiative, (see Lemma 7 in the Appendix). As before, Assumption 3 ensures that $E^C > 0$.

Lemma 3 *i) For* $\phi^0 p\Pi < 1 - \dfrac{c}{[\phi^0 - \rho(\phi^0, \lambda)]p\Pi}$, *the manager exerts* $e = 1$ *for any level of* α, *and the large shareholder chooses* $E(\alpha) = \left[\alpha \phi^0 + (1 - \psi)[(1 - \alpha)\phi^\alpha - \rho(\phi^\alpha, \lambda)] \right] p\Pi$.

ii) For $(1 - \psi)[\phi^0 - \rho(\phi^0, \lambda)]p\Pi > \dfrac{[\phi^0 - \rho(\phi^0, \lambda)]p\Pi - c}{(1 - \psi)[\phi^0 - \rho(\phi^0, \lambda)]p\Pi}$, *neither the manager nor the large shareholder exert effort for any level of* α.

iii) Otherwise, the manager exerts effort $e = 1$ *and the large shareholder chooses* $E(\alpha)$ *only if* $\alpha \leq \alpha^C$ *where* α^C *satisfies* $E(\alpha) = E^C(\alpha)$.

The equilibrium outcome for a given ownership structure has the same qualitative features as in Lemma 1. The manager exerts effort $e = 1$ if subsequent monitoring by the large shareholder does not exceed the threshold level E^C. The difference to Lemma 1 is that a small stake need not ensure managerial initiative. In constellation *ii)*, the manager never exerts effort because the level of monitoring induced by the prospect of appropriating part of the private benefits already exceeds the threshold level E^C.

The optimal ownership concentration obtains again from maximizing total net shareholder return. In contrast to the previous section, net shareholder return does not coincide with net equity value, as it includes the private benefits accruing to the large shareholder. Provided that $e = 1$, total shareholder return net of monitoring costs is

$$
\begin{aligned}
V^C \;=\;\; & E[(1 - \alpha)(1 - \phi^\alpha) + \alpha + (1 - \psi)\left((1 - \alpha)\phi^\alpha - \rho(\phi^\alpha, \lambda)\right)]p\Pi \\
& + [(1 - E)(1 - \phi^0)]p\Pi - \frac{E^2}{2}
\end{aligned}
$$

Differentiating V^C with respect to α yields

$$
\frac{dV^C|_{e=1}}{d\alpha} = p\Pi \left\{ \frac{dE}{d\alpha} \left[(1 - \alpha)(\phi^0 - \phi^\alpha) \right] + E \left[\psi \phi^\alpha - (1 - \alpha)\frac{d\phi^\alpha}{d\alpha} \right] \right\} > 0
$$

Net shareholder return increases with the ownership structure for three reasons. First, higher outside ownership concentration reduces the likelihood that the manager has effective control and expropriates shareholders. Second, it increases the share of private benefits that the large shareholder can appropriate at the expense of the manager. Third, it lowers the extent of inefficient extraction chosen jointly by the manager and the large shareholder because the latter's interests are more aligned with those of the small shareholders.

Lemma 4 *A) For* $\left[(1 - \psi)(\phi^0 - \rho(\phi^0, \lambda))p\Pi \right]^2 > (\phi^0 - \rho(\phi^0, \lambda))p\Pi - c$, *the optimal ownership structure is indeterminate.*

B) For $\left[(1 - \psi)(\phi^0 - \rho(\phi^0, \lambda))p\Pi \right]^2 < (\phi^0 - \rho(\phi^0, \lambda))p\Pi - c$, *there is a unique optimal ownership structure.*

i) If $\phi^0 p\Pi \leq \dfrac{(\phi^0 - \rho(\phi^0, \lambda))p\Pi - c}{(\phi^0 - \rho(\phi^0, \lambda))p\Pi}$, $\alpha^* = 1$.

ii) Otherwise, $\alpha^* = \alpha^C$.

The optimal ownership structure with transferable as with non-transferable private benefits implements the maximum level of monitoring that is compatible with managerial initiative. It does, however, not only depend on the size of the private benefits, but also on the distribution of the bargaining power. A manager with little bargaining power is not willing to tolerate much interference by the large shareholder. In fact, if the manager has very little bargaining power, even a completely dispersed ownership structure fails to induce managerial effort (case A).[13] This outcome can arise because the monitoring level is strictly positive for any ownership concentration, including a fully dispersed structure ($\alpha = 0$), when the large shareholder receives part of the private benefits.[14]

Conversely, a manager with much bargaining power extracts substantial private benefits even when ownership concentration and monitoring levels are high (case B). A higher outside ownership concentration improves shareholder control but discourages managerial initiative. As with non-transferable private benefits, it may thus be optimal to limit monitoring by restricting the stake of the large shareholder (case Bii). In this case, the (informed) large shareholder and the manager collude at the expense of the minority shareholders. Aligning the large shareholder's interest by increasing his stake is prohibitively costly because it would deter managerial initiative. Despite colluding with the large shareholder, the manager does not extract more rents. Irrespective of whether private benefits are transferable or not, the manager's incentive constraint binds, and his expected payoff is equal to the effort cost c. From the minority shareholders' perspective, collusion between the manager and the large shareholder is not purely detrimental. Although it reduces security benefits following successful monitoring by $\phi^{\alpha}\Pi$, it also allows for a higher level of monitoring which in turn reduces expected diversion by $(E^C - E^{NC})(\phi^0 - \phi^{\alpha})$.

Having characterized the optimal ownership structure, we can now address the relationship between legal shareholder protection and ownership concentration when private benefits are transferable. We focus again on the parameter configuration which gives rise to an interior solution for α^*.

Proposition 2 *When the manager and the large shareholder collude at the expense of the small shareholders, weaker legal shareholder protection may imply a lower or higher optimal outside ownership concentration α^*.*

Legal shareholder protection and outside ownership concentration may be substitutes or

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[13]Rearranging the condition for case A) yields $\psi < 1 - \dfrac{\sqrt{(\phi^0 - \rho(\phi^0, \lambda))p\Pi - c}}{(\phi^0 - \rho(\phi^0, \lambda))p\Pi}$.

[14]In our view, this is a rather mechanical result. The existence of a large shareholder who does not own a block ($\alpha = 0$) but is in a strong position relative to the manager seems rather implausible. If, in the spirit of this argument, the allocation of bargaining power were restricted to $\psi = 1$ for $\alpha = 0$, managerial initiative could always be implemented by setting $\alpha = 0$ and the resulting net shareholder return would be $V = (1 - \phi^0)p\Pi$.

complements in Proposition 2 for the same underlying reasons as in Proposition 1. First, changes in the legal shareholder protection directly affect both the manager's incentive to exert effort and the large shareholder's incentive to monitor. Second, managerial initiative and (large) shareholder control are conflicting objectives. Hence, the ownership structure that implements the optimal level of monitoring may increase or decrease following a change in the quality of the legal shareholder protection. This result does not depend on the large shareholder's motive to monitor which distinguishes Proposition 1 and Proposition 2. In the former the large shareholder monitors exclusively to reduce expropriation by the manager, in the latter securing part of the private benefits provides an additional motive for monitoring.

Overall, our analysis suggests that the widely held view of an inverse relationship between legal shareholder protection and ownership concentration does not hold for outside ownership concentration. In fact, an inverse relationship only obtains if the two following restrictive conditions are satisfied. First, legal shareholder protection must have no direct impact on the security benefits. That is, a change in the quality of the law affects the dead-weight loss $\rho(.)$ but not the fraction of diverted corporate resources ϕ.[15] Second, there is only one agency problem, namely the traditional conflict between manager and homogeneous (small) shareholders. If either of these restrictions is relaxed, legal shareholder protection and outside ownership concentration need not be substitutes. In particular, if there are multiple agency problems, i.e., conflict of interests among small and large shareholders and among shareholders and managers, the relationship ceases to be monotone, irrespective of whether legal protection directly affects both security and private benefits or only private benefits.

As shown above, the quality of the legal shareholder protection affects both the ease with which corporate resources can be diverted and the large shareholder's incentive to engage in monitoring. In addition, legal rules shape the nature of monitoring by determining how much importance the large shareholder attaches to enhancing security benefits relative to extracting private benefits. Or putting it differently, the law influences the extent to which the interests of the large shareholder conflict with those of the small shareholders.

Proposition 3 *Better legal shareholder protection need not alleviate the conflict of interest between the large and the small shareholders.*

The resource allocation ϕ^α chosen by the informed large shareholder is a decreasing function of both his block α and of the quality of legal shareholder protection λ. An improvement in the quality of legal protection increases the dead-weight loss associated with the extraction of

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[15]Such rules do not really protect shareholders, i.e., do not increase security benefits, but merely convert managerial rents into dead-weight loss. In fact, an improvement in the quality of such rules may be detrimental to shareholders. An increase in the dead-weight loss $\rho(.)$ lowers net shareholder return if managerial initiative is no longer incentive compatible due to the reduction in private benefits.

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private benefits. Ceteris paribus, this induces the informed large shareholder (and the manager) to divert less corporate resources. In addition, an improved quality of legal protection leads to change in the optimal ownership concentration α^*. Suppose better legal protection goes together with a higher ownership concentration ($d\alpha^*/d\lambda > 0$). Owning a larger stake, the large shareholder internalizes a larger fraction of the dead-weight loss and further reduces the extent of private benefit extraction. Thus, better legal protection unambiguously increases the extent to which the interests of the large shareholder are aligned with those of the small shareholders, when legal shareholder protection and ownership concentration are complements.

By contrast, when legal shareholder protection and ownership concentration are substitutes, the indirect effect is running counter to the direct effect. To preserve managerial initiative, an improvement in the legal protection has to be matched by a reduction in the ownership concentration. Owning a smaller stake, the large shareholder attaches more importance to private benefit extraction when choosing ϕ. When the indirect effect dominates, better legal protection exacerbates the conflict of interests among shareholders.

5   Productive Conflict of Interests

The previous sections show that legal shareholder protection has an impact on the optimal ownership structure. As a result, legal shareholder protection affects both the large shareholder's incentives to monitor and the nature of monitoring. How (minority) shareholder wealth reacts to better legal protection is difficult to assess, because of the effects on the behavior of the manager and of the large shareholder. In this section, we present an example that further illustrates the importance of such indirect effects for the evaluation of rules aimed at protecting minority shareholders. At first sight, it seems plausible that rules prohibiting preferential treatment of the large shareholder benefit minority shareholder. By preventing collusion with the manager, such rules align the interests of the large shareholder with those of the minority shareholders. We show, however, that collusion between the manager and the large shareholder may actually benefit minority shareholders, and thus that equal treatment rules may be detrimental to the minority shareholders' interests.[16]

The example introduces a fixed cost of monitoring into our model of section 2 such that only overmonitoring or no monitoring is feasible in the absence of collusion. That is, all feasible levels of monitoring frustrate managerial effort, or equivalently managerial initiative requires no monitoring. Thus, the outcome in the absence of collusion is that either the project is not undertaken, or that the manager has full discretion over the resource allocation. While this

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[16]Examples of equal treatment rules are the preemptive right to buy new issues of shares on a pro-rata basis, the prohibition of greenmail, and the Equal Opportunity Rule that effectively bans premia in controlling block trades.

case is clearly an extreme example of overmonitoring, it highlights a more general point. Given that both managerial initiative and monitoring are valuable, minority shareholders ought to be willing to pay for these services. Permitting collusion through weak equal treatment rules is one way to compensate the manager and the large shareholder.

We consider the model of section 2 with the following modifications. Prior to date 1, the large shareholder must invest a fixed cost $K > 0$ in order to become an effective monitor. If the large shareholder invests K, he has at date 2 access to the same monitoring technology as before. (Provided that the manager finds the project, the large shareholder can also identify it with probability E at a cost $E^2/2$.) If K is not spent, the large shareholder is unable to monitor and always remains uninformed.[17] This investment decision is observed by the manager before he makes his effort choice. For simplicity, we allocate all the bargaining power to the manager. Setting $\psi = 1$ is an innocuous assumption. In addition, we concentrate on the parameter configuration where the optimal block size is strictly smaller than 1.

Assumption 4 $\phi^0 p\Pi \geq 1 - \dfrac{c}{\left[\phi^0 - \rho(\phi^0, \lambda)\right] p\Pi}$

All other features of the framework remain unchanged relative to section 2. In order to show that minority shareholders can benefit from collusion, we compare the outcome when collusion is not possible with the outcome when collusion is possible. We defer the formal analysis of this comparison to the Appendix and present here only the intuition and the main results. When the large shareholder abstains from investing K, the outcomes coincide. Due to the absence of monitoring, the manager has full control over the resource allocation, sets $\phi = \phi^0$, and exerts effort $e = 1$. The shareholders' expected payoff is $(1 - \phi^0)p\Pi$, and the manager reaps expected private benefits $\left[\phi^0 - \rho(\phi^0, \lambda)\right] p\Pi$.

Suppose that the large shareholder has acquired the monitoring technology at a cost K and consider the case where private benefits are non-transferable. Managerial effort and monitoring by the large shareholder enhance share value. They may, however, be mutually exclusive. On the one hand, the manager's incentive constraint puts an upper bound α^{NC} on the ownership concentration, because monitoring reduces managerial rents. By Assumption 4, $\alpha^{NC} < 1$. On the other hand, the large shareholder has to own a sufficiently large block in order to recoup the fixed cost K. Thus, the acquisition of the monitoring technology puts a lower bound on ownership concentration which is equal to $\frac{\sqrt{2K}}{\phi^0 p\Pi}$. When the fixed monitoring cost K are sufficiently large, these two constraints cannot be satisfied simultaneously. Since managerial effort is indispensable for value creation, the shareholders then prefer to abstain from monitoring, leaving full control to the manager.

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[17] The fixed cost reflects the idea that the large shareholder needs to put a structure in place that allows him to gather and evaluate relevant information.

Lemma 5 *When private benefits are non-transferable and $\alpha^{NC} < \frac{\sqrt{2K}}{\phi^0 p\Pi}$, the optimal ownership structure induces no monitoring, and $V^{NC} = (1 - \phi^0)p\Pi$.*

Consider now the case of transferable private benefits. Given that the manager has all the bargaining power, the informed large shareholder gets his outside option $\alpha\Pi$ which is identical to the payoff that he receives in the case of non-transferable private benefits. Accordingly, his incentive to monitor remain unchanged, and so does the lower bound on the ownership concentration that ensures the acquisition of the monitoring technology. In contrast, collusion strengthens the manager's incentives, because it enables the coalition of manager and large shareholder to appropriate resource without making a proportional payment to the small shareholders. Compared to the case of non-transferable private benefits, the manager's rent and hence the upper bound α^C on ownership concentration imposed by his incentive constraint increase ($\alpha^C > \alpha^{NC}$).

Lemma 6 *When private benefits are transferable and $\alpha^C \geq \frac{\sqrt{2K}}{\phi^0 p\Pi}$, the optimal ownership structure $\alpha^* = \alpha^C$ induces managerial effort and monitoring, and $V^C = p\Pi(1 - \phi^0) + (p\Pi)^2\alpha^C(1 - \alpha^C)(\phi^0 - \phi^\alpha) + \frac{(\alpha^C \phi^0 p\Pi)^2}{2} - K$.*

Obviously, the interval $\alpha^{NC} < \frac{\sqrt{2K}}{\phi^0 p\Pi} \leq \alpha^C$ is the interesting range for the comparison of the two regimes. In this range, the fixed cost K make it impossible to simultaneously implement effort and monitoring in the absence of collusion. If the large shareholder is restricted to receive security benefits, say due to strict equal treatment rules, there is either (over)monitoring and no initiative or vice versa. Collusion allows to satisfy both constraints because it excludes the small shareholders from part of the returns. This enables the large shareholder to recoup the cost of acquiring the monitoring technology without destroying managerial initiative. The small shareholders also benefit from monitoring because the informed large shareholder and the manager jointly choose to extract less private benefits than the manager does if he has effective control.

Proposition 4 *Collusion between the manager and the large shareholder can increase total net shareholder return and security benefits.*

This example shows that imposing equal treatment is not always in the best interests of minority shareholders. The result is by no means specific to either the problem of monitoring or our modelling framework. In Grossman and Hart (1980) and in Bebchuk (1994), preventing a successful bidder from discriminating against the minority shareholders discourages value-increasing takeovers. Common to their and our example is the insight that equal treatment rules also entail costs, because they have repercussions on the incentives of parties who create

value. Our example shows that if active monitoring by the large shareholder enhances share value,[18] it must also be compensated. Imposing equal treatment among shareholders can lead to the underprovision of active monitoring and may thus be detrimental to minority shareholders. Strict equal treatment rules impose no costs only when speculative monitoring is sufficient to discipline management.

6 Conclusions

The recent law and finance literature emphasizes the role that the law and its enforcement plays in creating shareholder value. As pointed out in this paper, strengthening legal shareholder protection has adverse effects on the incentives of other parties to contribute to shareholder value. Reduced possibilities to expropriate shareholders lowers the manager's incentives to exert effort and the large shareholder's incentives to monitor. To restore the balance of incentives, the stake of the large shareholder must adjust. Contrary to the widely held view in the law and finance literature, we do not find an inverse relationship between the quality of legal shareholder protection and outside ownership concentration. Better legal shareholder protection may have a larger impact on the behavior of the manager or on that of the large shareholder. Depending on which effect prevails, outside ownership concentration and legal shareholder protection are substitutes or complements. This result holds irrespective of whether shareholder interests are perfectly congruent or whether the large shareholder colludes with the manager and extracts private benefits at the expense of the minority shareholders.

We also show that there is a link between the quality of the law and the nature of monitoring. Better legal shareholder protection reduces private benefits and thus the interest of the large shareholder to extract private benefits. In addition, a more effective legal protection affects the optimal ownership structure. Reduced private benefits, or equivalently better shareholder protection, may imply a less concentrated ownership structure to preserve managerial initiative. This in turn induces the large shareholder to attach more importance to private benefit extraction. As a consequence, better shareholder protection need not alleviate the conflict of interests among shareholders.

Our analysis indicates that the overall impact of legal rules on minority shareholder wealth is difficult to assess. We show that rules aimed at preventing collusion between large shareholder and manager can in fact be detrimental to minority shareholders. Within our example, strict equal treatment rules among shareholders may result in the underprovision either of effort or of monitoring, because it entitles minority shareholders to claim a large fraction of the surplus. In contrast, collusion allows the manager and the large shareholder to appropriate a larger share

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[18]Tirole (2000) distinguishes between active monitoring aimed at changing managerial behavior and speculative monitoring, which is only backward looking.

of the corporate resources, thereby providing sufficient incentives for both managerial initiative and monitoring.

In conclusion, we like to emphasize that our model does not dispute the importance of legal shareholder protection. It merely highlights that the evaluation of governance systems needs to consider the direct and indirect effects of governance mechanisms. In particular, ignoring the effect that legal shareholder protection has on the behavior of managers and of active large shareholders, who both contribute to the creation of share value, may lead to incongruous policy recommendations. Obviously, the design of a good governance structure becomes even more complex if one is ready to abandon the shareholder value perspective in favor of the stakeholder society paradigm.

A   Proof of Lemma 1

Effort $e = 1$ requires that $E(\alpha) \leq E^{NC}$. The threshold $E^{NC} \equiv 1 - \dfrac{c}{[\phi^0 - \rho(\phi^0, \lambda)]p\Pi}$ is independent of α and by Assumption 3 strictly positive. Given $e = 1$, $E = \alpha\phi^0 p\Pi$ and is strictly increasing in α with $E(\alpha = 0) = 0$ and $E(\alpha = 1) = \phi^0 p\Pi$. Hence, there are two possible cases. If $\phi^0 p\Pi < 1 - \dfrac{c}{[\phi^0 - \rho(\phi^0, \lambda)]p\Pi}$, $E(\alpha) < E^{NC}$ for any α, and $e = 1$ (case i). If $\phi^0 p\Pi \geq 1 - \dfrac{c}{[\phi^0 - \rho(\phi^0, \lambda)]p\Pi} E^{NC}$, there exists a unique α, denoted by α^{NC}, such that $E(\alpha) = E^{NC}$ (case ii).

B   Proof of Lemma 2

Since V^{NC} is increasing in α, provided that $E(\alpha) \leq E^{NC}$, this constraint determines α^*. From Lemma 1, it follows that there are two possible cases. For $\phi^0 p\Pi \geq 1 - \dfrac{c}{[\phi^0 - \rho(\phi^0)]p\Pi}$, the constraint binds and $\alpha^* = \dfrac{1}{p\Pi\phi^0}\left[1 - \dfrac{c}{[\phi^0 - \rho(\phi^0, \lambda)]p\Pi}\right] < 1$. The resulting net shareholder return is

$$
\begin{aligned}
V^{NC} &= (1 - \phi^0)p\Pi + E\left[\phi^0 p\Pi\right] - \frac{E^2}{2} \\
&= \left[1 - \frac{c}{[\phi^0 - \rho(\phi^0, \lambda)]p\Pi}\right]\phi^0 p\Pi + (1 - \phi^0)p\Pi - \frac{1}{2}\left[1 - \frac{c}{[\phi^0 - \rho(\phi^0, \lambda)]p\Pi}\right]^2 \\
&= p\Pi - \frac{c\bar{\phi}}{[\phi^0 - \rho(\phi^0, \lambda)]} - \frac{1}{2}\left[1 - \frac{c}{[\phi^0 - \rho(\phi^0, \lambda)]p\Pi}\right]^2
\end{aligned}
$$

For $\phi^0 p\Pi < 1 - \dfrac{c}{[\phi^0 - \rho(\phi^0)]p\Pi}$, the constraint $E(\alpha) \leq E^{NC}$ does not bind, $\alpha^* = 1$, and

$$
\begin{aligned}
V^{NC} &= (1 - \phi^0)p\Pi + E\left[\phi^0 p\Pi\right] - \frac{E^2}{2} \\
&= (1 - \phi^0)p\Pi + \frac{\left[\phi^0 p\Pi\right]^2}{2}
\end{aligned}
$$

C   Proof of Proposition 1

Differentiating the equilibrium condition $E(\alpha) = E^{NC}$ for $0 < \alpha^* < 1$, with respect to λ, we obtain

$$
\frac{d\alpha^*}{d\lambda} = \frac{\frac{dE^{NC}}{d\lambda} - \frac{dE}{d\lambda}}{\frac{dE}{d\alpha}}
$$

Since both $\frac{dE^{NC}}{d\lambda}$ and $\frac{dE}{d\lambda}$ are negative, the numerator has an ambiguous sign.

D Comparative-Static Properties of E^C

Lemma 7 *Provided $E^C < 1$, $\partial E^C / \partial \lambda < 0$, $\partial E^C / \partial \psi > 0$, and $\partial E^C / \partial \alpha < 0$.*

Proof.

$$\frac{dE^C}{d\alpha}\Big|_{E^C < 1} = \frac{\left[(\phi^0 - \rho(\phi^0, \lambda))p\Pi - c\right]\psi p\Pi\left[\frac{\partial \phi^\alpha}{\partial \alpha}[(1-\alpha) - \rho_\phi(\phi^\alpha, \lambda)] - \phi^\alpha\right]}{\left[(\phi^0 - \rho(\phi^0, \lambda)) - \psi\left((1-\alpha)\phi^\alpha - \rho(\phi^\alpha, \lambda)\right)\right]^2 [p\Pi]^2}$$

$$= -\frac{\phi^\alpha \psi p\Pi\left[(\phi^0 - \rho(\phi^0, \lambda))p\Pi - c\right]}{\left[(\phi^0 - \rho(\phi^0, \lambda)) - \psi\left((1-\alpha)\phi^\alpha - \rho(\phi^\alpha, \lambda)\right)\right]^2 [p\Pi]^2} < 0$$

$$\frac{dE^C}{d\psi}\Big|_{E^C < 1} = \frac{\left[(\phi^0 - \rho(\phi^0, \lambda))p\Pi - c\right]\left((1-\alpha)\phi^\alpha - \rho(\phi^\alpha, \lambda)\right)p\Pi}{\left[(\phi^0 - \rho(\phi^0, \lambda)) - \psi\left((1-\alpha)\phi^\alpha - \rho(\phi^\alpha, \lambda)\right)\right]^2 [p\Pi]^2} > 0$$

$$\frac{dE^C}{d\lambda}\Big|_{E^C < 1} = \frac{\left[\frac{\partial \phi^0}{\partial \lambda}[1 - \rho_\phi(\phi^0, \lambda)] - \rho_\lambda(\phi^0, \lambda)\right]p\Pi\left[(\phi^0 - \rho(\phi^0, \lambda)) - \psi(1-\alpha)\phi^\alpha - \rho(\phi^\alpha, \lambda)\right]p\Pi}{\left[(\phi^0 - \rho(\phi^0, \lambda)) - \psi\left((1-\alpha)\phi^\alpha - \rho(\phi^\alpha, \lambda)\right)\right]^2 [p\Pi]^2}$$

$$- \frac{\left[(\phi^0 - \rho(\phi^0, \lambda))p\Pi - c\right]}{\left[(\phi^0 - \rho(\phi^0, \lambda)) - \psi\left((1-\alpha)\phi^\alpha - \rho(\phi^\alpha, \lambda)\right)\right]^2 [p\Pi]^2}$$

$$\times \left[\frac{\partial \phi^0}{\partial \lambda}[1 - \rho_\phi(\phi^0, \lambda)] - \rho_\lambda(\phi^0, \lambda) - \psi\frac{\partial \phi^\alpha}{\partial \lambda}[(1-\alpha) - \psi\rho_\phi(\phi^\alpha, \lambda)] + \psi\rho_\lambda(\phi^\alpha, \lambda)\right]p\Pi$$

$$= -\frac{\rho_\lambda(\phi^0, \lambda)\left[(\phi^0 - \rho(\phi^0, \lambda)) - \psi(1-\alpha)\phi^\alpha - \rho(\phi^\alpha, \lambda)\right]p\Pi}{\left[(\phi^0 - \rho(\phi^0, \lambda)) - \psi\left((1-\alpha)\phi^\alpha - \rho(\phi^\alpha, \lambda)\right)\right]^2 [p\Pi]^2}$$

$$+ \frac{\left[(\phi^0 - \rho(\phi^0, \lambda))p\Pi - c\right]\left[\rho_\lambda(\phi^0, \lambda) - \psi\rho_\lambda(\phi^\alpha, \lambda)\right]p\Pi}{\left[(\phi^0 - \rho(\phi^0, \lambda)) - \psi\left((1-\alpha)\phi^\alpha - \rho(\phi^\alpha, \lambda)\right)\right]^2 [p\Pi]^2}$$

$$= -\frac{\rho_\lambda(\phi^0, \lambda)\left[\frac{c}{p\Pi} - \psi(1-\alpha)\phi^\alpha - \rho(\phi^\alpha, \lambda)\right]p\Pi}{\left[(\phi^0 - \rho(\phi^0, \lambda)) - \psi\left((1-\alpha)\phi^\alpha - \rho(\phi^\alpha, \lambda)\right)\right]^2 [p\Pi]^2}$$

$$- \frac{\psi\rho_\lambda(\phi^\alpha, \lambda)\left[(\phi^0 - \rho(\phi^0, \lambda))p\Pi - c\right]p\Pi}{\left[(\phi^0 - \rho(\phi^0, \lambda)) - \psi\left((1-\alpha)\phi^\alpha - \rho(\phi^\alpha, \lambda)\right)\right]^2 [p\Pi]^2}$$

As $E^C(\alpha = 1) < 1$ implies $\psi\left((1-\alpha)\phi^\alpha - \rho(\phi^\alpha, \lambda)\right) < \frac{c}{p\Pi}$, both terms are negative and hence $\partial E^C / \partial \lambda < 0$. ∎

E Proof of Lemma 3

Given $e = 1$, monitoring $E(\alpha)$ is strictly increasing in α with $E(\alpha = 0) = (1-\psi)[\phi^0 - \rho(\phi^0, \lambda)]p\Pi > 0$ and $E(\alpha = 1) = \phi^0 p\Pi < 1$. Effort $e = 1$ requires that $E(\alpha) \leq E^C$ where

$$E^C \equiv \min\left[1, \frac{\left[(\phi^0 - \rho(\phi^0, \lambda))p\Pi - c\right]}{\left[(\phi^0 - \rho(\phi^0, \lambda)) - \psi\left((1-\alpha)\phi^\alpha - \rho(\phi^\alpha, \lambda)\right)\right]p\Pi}\right],$$

$$\frac{\left[(\phi^0 - \rho(\phi^0, \lambda))p\Pi - c\right]}{\left[(\phi^0 - \rho(\phi^0, \lambda)) - \psi\left((1-\alpha)\phi^\alpha - \rho(\phi^\alpha, \lambda)\right)\right]p\Pi}$$ is strictly decreasing in α (Lemma 7), and $E^C(\alpha = 1) = 1 - \frac{c}{[\phi^0 - \rho(\phi^0, \lambda)]p\Pi} < 1$ by Assumption 3. Thus, we consider in turn the cases A) $E^C(\alpha = 0) < 1$ and B) $E(\alpha = 0) = 1$.

Given $E^C(\alpha = 0) < 1$ (case A)), $\frac{\partial E^C}{\partial \alpha} < 0$, $\frac{\partial E(\alpha)}{\partial \alpha} > 0$, and $E(\alpha = 0) > 0$, three subcases can arise. Ai) For $\phi^0 p\Pi < 1 - \frac{c}{[\phi^0 - \rho(\phi^0, \lambda)]p\Pi}$, $E(\alpha = 1) = \phi^0 p\Pi < 1 - \frac{c}{[\phi^0 - \rho(\phi^0, \lambda)]p\Pi} = E^C(\alpha = 1)$, and $e = 1$ for any α. Aii) For $(1 - \psi)[\phi^0 - \rho(\phi^0, \lambda)]p\Pi > \frac{[\phi^0 - \rho(\phi^0, \lambda)]p\Pi - c}{(1 - \psi)[\phi^0 - \rho(\phi^0, \lambda)]p\Pi}$, $E(\alpha = 0) = (1-\psi)[\phi^0 - \rho(\phi^0, \lambda)]p\Pi > \frac{[\phi^0 - \rho(\phi^0, \lambda)]p\Pi - c}{(1 - \psi)[\phi^0 - \rho(\phi^0, \lambda)]p\Pi} = E^C(\alpha = 0)$, and $E(\alpha) \le E^C$ cannot be satisfied for any α. Aiii) Otherwise, $E(\alpha = 1) > E^C(\alpha = 1)$ and $E(\alpha = 0) < E^C(\alpha = 0)$. Given $\frac{\partial E^C}{\partial \alpha} < 0$ and $\frac{\partial E(\alpha)}{\partial \alpha} > 0$, there exists a unique α, denoted by α^C, such that

$$
\begin{aligned}
E(\alpha) &= \left[\alpha\phi^0 + (1-\psi)[(1-\alpha)\phi^\alpha - \rho(\phi^\alpha, \lambda)]\right]p\Pi \\
&= \frac{\left[(\phi^0 - \rho(\phi^0, \lambda))p\Pi - c\right]}{\left[(\phi^0 - \rho(\phi^0, \lambda)) - \psi\left((1-\alpha)\phi^\alpha - \rho(\phi^\alpha, \lambda)\right)\right]p\Pi} = E^{NC}
\end{aligned}
$$

When $E(\alpha = 0) = 1$ (case B)), $E(\alpha = 0) < E^C(\alpha = 0)$ always holds and only two subcases arise. Bi) For $\phi^0 p\Pi < 1 - \frac{c}{[\phi^0 - \rho(\phi^0, \lambda)]p\Pi}$, $E(\alpha = 1) = \phi^0 p\Pi < 1 - \frac{c}{[\phi^0 - \rho(\phi^0, \lambda)]p\Pi} = E^C(\alpha = 1)$, and $e = 1$ for any α. Bii) Otherwise, $E(\alpha = 1) > E^C(\alpha = 1)$ and $E(\alpha = 0) < E^C(\alpha = 0)$, and we obtain the same result as in subcase Aiii).

F   Proof of Lemma 4

From Lemma 3, it follows that $e = 1$ cannot be implemented for $(1-\psi)[\phi^0 - \rho(\phi^0, \lambda)]p\Pi > \frac{[\phi^0 - \rho(\phi^0, \lambda)]p\Pi - c}{(1 - \psi)[\phi^0 - \rho(\phi^0, \lambda)]p\Pi}$ (subcase Aii)). Otherwise, $e = 1$ can be implemented. Moreover, since V^C is increasing in α, provided that $E(\alpha) \le E^C$, this constraint determines α^*. From Lemma 3, it follows that the constraint does not bind for $\phi^0 p\Pi < 1 - \frac{c}{[\phi^0 - \rho(\phi^0, \lambda)]p\Pi}$ (subcases Ai) and Bi)), and that $\alpha^* = 1$, and

$$
\begin{aligned}
V^{NC} &= \left[\phi^0 p\Pi\right]^2 + (1 - \phi^0)p\Pi - \frac{\left[\phi^0 p\Pi\right]^2}{2} \\
&= \frac{\left[\phi^0 p\Pi\right]^2}{2} + (1 - \phi^0)p\Pi
\end{aligned}
$$

For $(1-\psi)[\phi^0 - \rho(\phi^0, \lambda)]p\Pi < \frac{[\phi^0 - \rho(\phi^0, \lambda)]p\Pi - c}{(1 - \psi)[\phi^0 - \rho(\phi^0, \lambda)]p\Pi}$ and $\phi^0 p\Pi > 1 - \frac{c}{[\phi^0 - \rho(\phi^0, \lambda)]p\Pi}$ (subcases Aiii) and Bii)), the constraint binds. Hence, $\alpha^* = \alpha^C$ and

$$
V^C = (1 - E)(1 - \phi^0)p\Pi + E\left[(1-\alpha)(1 - \phi^\alpha) + \alpha + (1-\psi)[(1-\alpha)\phi^\alpha - \rho(\phi^\alpha, \lambda)]\right]p\Pi - \frac{E^2}{2}
$$

$$
\begin{aligned}
&= (1-\phi^0)p\Pi + E\left[(1-\alpha)(\phi^0-\phi^\alpha)+\alpha\phi^0+(1-\psi)[(1-\alpha)\phi^\alpha-\rho(\phi^\alpha,\lambda)]\right]p\Pi - \frac{E^2}{2}\\
&= (1-\phi^0)p\Pi + E\left[(1-\alpha)(\phi^0-\phi^\alpha)\right]p\Pi + \frac{E^2}{2}\\
&= (1-\phi^0)p\Pi + \frac{\left[(1-\alpha)(\phi^0-\phi^\alpha)\right]\left[(\phi^0-\rho(\phi^0,\lambda))p\Pi - c\right]}{\left[(\phi^0-\rho(\phi^0,\lambda))-\psi\left((1-\alpha)\phi^\alpha-\rho(\phi^\alpha,\lambda)\right)\right]}\\
&\quad + \frac{1}{2}\left[\frac{\left[(\phi^0-\rho(\phi^0,\lambda))p\Pi - c\right]}{\left[(\phi^0-\rho(\phi^0,\lambda))-\psi\left((1-\alpha)\phi^\alpha-\rho(\phi^\alpha,\lambda)\right)\right]p\Pi}\right]^2
\end{aligned}
$$

G Proof of Proposition 2

Follows from proof of Proposition 1 and $\frac{dE^C}{d\lambda}<0$.

H Proof of Proposition 3

Differentiating the first-order condition $\rho_\phi(\phi^\alpha,\lambda)=1-\alpha$ with respect to λ yields

$$
\frac{d\phi^\alpha}{d\lambda} = -\frac{1}{\rho_{\phi\phi}}\left[\frac{d\alpha}{d\lambda}+\rho_{\phi\lambda}\right].
$$

For $\frac{d\alpha^*}{d\lambda}<0$, the net effect is ambiguous.

I Proof of Lemma 5

It follows from section 3 that the manager exerts effort $e=1$ only if

$$
E \leq E^{NC} \equiv 1 - \frac{c}{[\phi^0-\rho(\phi^0,\lambda)]p\Pi}
$$

Substituting the large shareholder' best response $E=\alpha\phi^0 p\Pi$ into the manager's incentive constraint yields

$$
\alpha p\Pi\phi^0 \leq 1 - \frac{c}{\left[\phi^0-\rho(\phi^0,\lambda)\right]p\Pi} = E^{NC}.
$$

Assumption 4 allows to rewrite the above condition as

$$
\alpha \leq \alpha^{NC} \equiv \frac{1}{\phi^0 p\Pi}\left[1 - \frac{c}{\left[\phi^0-\rho(\phi^0,\lambda)\right]p\Pi}\right] < 1.
$$

If the large shareholder pays the fixed cost K, the value of his block is

$$
V_L^{NC} = \alpha\left[(1-E)(1-\phi^0)+E\right]p\Pi - \frac{E^2}{2} - K
$$

Substituting $E=\alpha\phi^0 p\Pi$ into $V_L^{NC}\geq 0$ yields

$$
\alpha \geq \frac{\sqrt{2K}}{\phi^0 p\Pi}.
$$

Hence, whenever $\alpha^{NC}\leq\frac{\sqrt{2K}}{\phi^0 p\Pi}$, monitoring and managerial initiative are mutually exclusive.

J   Proof of Lemma 6

As explained in section 4, bargaining between the informed large shareholder and the manager leads to $\phi = \phi^\alpha$. Given $\psi = 1$, the large shareholder obtains $\alpha\Pi$ in the bargaining, whereas the manager obtains $[(1-\alpha)\phi^\alpha - \rho(\phi^\alpha, \lambda)]\Pi$. As the informed large shareholder receives the same payoff as in the case of non-transferable private benefits, the condition under which he incurs the fixed cost of monitoring remains unchanged, i.e.,

$$\alpha \geq \frac{\sqrt{2K}}{\phi^0 p\Pi}$$

The manager is willing to exert effort $e = 1$ if

$$E \leq E^C \equiv \frac{(\phi^0 - \rho(\phi^0, \lambda))p\Pi - c}{\left[\left(\phi^0 - \rho(\phi^0, \lambda)\right) - ((1-\alpha)\phi^\alpha - \rho(\phi^\alpha))\right]p\Pi}.$$

Using Assumption 4 and substituting the large shareholder' best response $E = \alpha\phi^0 p\Pi$ into the manager's incentive constraint yields

$$\alpha \leq \alpha^C \equiv \frac{1}{\phi^0 p\Pi}\left[\frac{(\phi^0 - \rho(\phi^0, \lambda))p\Pi - c}{\left[\left(\phi^0 - \rho(\phi^0, \lambda)\right) - ((1-\alpha)\phi^\alpha - \rho(\phi^\alpha))\right]p\Pi}\right] < 1$$

Since $E^C \geq E^{NC}$, it follows that $\alpha^C \geq \alpha^{NC}$.[19] Given that $e = 1$, V^C is increasing in α. Hence, $\alpha^* = \alpha^C$ if $\alpha^C \geq \frac{\sqrt{2K}}{\phi^0 p\Pi}$. In this case $V^C = p\Pi(1 - \phi^0) + E^C p\Pi[(1-\alpha^C)(\phi^{\alpha^C} - \phi^0) + \alpha^C\phi^0] - \frac{(E^C)^2}{2} - K$, and substitution of $E^C = \alpha^C\phi^0 p\Pi$ yields $V^C = p\Pi(1 - \phi^0) + (p\Pi)^2\alpha^C(1 - \alpha^C)(\phi^0 - \phi^\alpha) + \frac{(\alpha^C\phi^0 p\Pi)^2}{2} - K$.

K   Proof of Proposition 4

In the range $\alpha^{NC} \leq \frac{\sqrt{2K}}{p\Pi} \leq \alpha^C$, $V^{NC} = p\Pi(1-\phi^0)$ and $V^C = p\Pi(1-\phi^0) + (p\Pi)^2\alpha^C(1-\alpha^C)(\phi^0 - \phi^\alpha) + \frac{(\alpha^C p\Pi\phi^0)^2}{2} - K$. Since $(p\Pi)^2\alpha^C(1-\alpha^C)(\phi^0 - \phi^\alpha) + \frac{(\alpha^C p\Pi\phi^0)^2}{2} - K > 0$, $V^C > V^{NC}$. When private benefits are non-transferable, security benefits are equal to $p\Pi(1 - \phi^0)$. When private benefits are transferable, security benefits are equal to $p\Pi[E^C(1 - \phi^{\alpha_C}) + (1 - E^C)(1 - \phi^0)]$. Since $(1 - \phi^{\alpha_C}) > (1 - \phi^0)$, we have proved our claim.

---

[19] For $\alpha = 0$, $E(\alpha) = 0 < E^C$, and for $\alpha = 1$, $E(\alpha) > E^C$ by Assumption 4. While $E(\alpha)$ is increasing in α, E^C is decreasing in α. Hence, the threshold α^C is unique and strictly positive.

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