

The Irrelevance of Corporate Governance Structure

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Abstract

We develop a model analyzing the conditions under which the allocation of control rights between a shareholder and a manager is irrelevant to the firm value. In our model managers differ in their competence and integrity and shareholders only differ in their competence. Given their type, managers can either create value or destroy value and consume private benefits. Given a shareholder's competence, she then needs to deduct from the decision made by the manager whether he should be retained or fired. The allocation of control rights allowing a shareholder to fire a manager can scale from easy to impossible. We show that as long as shareholders do not have perfect competence, and managers with meaningful career concerns are likely to do as much harm as good, the allocation of control rights is irrelevant to firm value. Our result has two important implications. First, to the study of corporate governance structures: it encourages specifying the conditions explaining why one will assume a certain allocation of control rights is consistently better than others (beyond the mere risk of agency cost). Second, to the absence of valuation models for control rights: it explains why developing such a model is impossible; a valuation model requires abstracting away from firm specific elements, but doing so will result in control rights having no value at all.

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Introduction

Starting with Jensen and Meckling’s seminal 1976 article, agency costs have been the central element in the theory of the firm and the study of corporate law and governance. Jensen and Meckling showed that the division of cash flow-rights between a principal and an agent creates conflict that results in what they called “agency costs.” Although Jensen and Meckling’s model focused only on capital structure (the agent held all voting rights), it was applied to governance structure, i.e., to the division of control rights. Indeed, the central theme in the theory of corporate governance is that control rights are necessary to minimize agency costs, and thus empowering shareholders, i.e. allocating more control rights to shareholders, will reduce management agency cost. The empirical prediction that follows is that a “weak” governance structure—i.e., allocation of more control rights to management—will be associated with weak firm performance.

But a review of the empirical studies reveals that every aspect of corporate governance that was studied yielded conflicting empirical findings. Conflicting studies regarding the effects of different allocation of control rights on firm value and performance include, for instance: the level of cash flow rights held by management; dual-class shares; anti-takeover defenses, such as poison pill, staggered boards, and protective state legislation; hedge-fund activism; and the strength of corporate governance as measured by several indices.

What can explain the conflicting findings in the studies of corporate governance? We start with a Principal Costs Theory, asserting that absent firm specific elements—such as the types of agents and principals, the nature of the firm’s business and its competitive environment—corporate governance is irrelevant. There is no governance structure that is inherently good or bad. We then develop a model in which we explore the conditions under which corporate governance is irrelevant. The goal is to identify what are the conditions that make corporate governance relevant.

Principal Costs Theory

In a business firm, a principal (an investor) and an agent (a manager) enter an incomplete contract (a firm), dividing between them *cash-flow rights* (reflected in the firm’s capital structure) and *control rights* (reflected in the firm’s governance structure). The exercise of control

rights in business firms generates both benefits and costs. The main benefit of control rights, exercised through the efficient use of effort, expertise, and talent, is the creation of firm value (selecting and executing a business strategy). At the same time, the exercise of control rights also generates costs that reduce firm value. Following Goshen and Squire (2017), control costs can be categorized based on whose actions are the source of the cost (principals or agents), and based on the problem that explains the cost (incompetence or conflict). With respect to the first distinction, *principal costs* are costs attributable to the exercise of control by investors, and *agent costs* are costs attributable to the exercise of control by managers. With respect to the second distinction, *competence costs* are the costs of honest mistakes and of efforts to avoid such mistakes, and *conflict costs* are the costs of self-seeking conduct and of efficient efforts to prevent such conduct (Jensen and Meckling, 1976). Combining these two distinctions yields four categories of control costs: principal competence costs, principal conflict costs, agent competence costs, and agent conflict costs.

A governance structure that maximizes firm value allocates control in the way that minimizes the sum of control costs across the four categories. Although control rights can be divided along many dimensions—e.g., time, topics, structures, contingencies—control rights represent a given pie of rights and their division between the principal and the agent is a zero-sum proposition (i.e., sharing the 100% of control rights). Thus, any shift of control rights between principals and agents entails tradeoffs between *principal costs* and *agent costs*, with the net effect of the shift—and thus the optimal control structure—depending on firm-specific characteristics. Because principal costs and agent costs are substitutes for each other, any reallocation of control rights between investors and managers decreases one type of cost but increases the other. The rate of substitution is firm-specific, based on factors such as the firm’s business strategy, its industry, and the personal characteristics of its investors and managers. Therefore, each firm has a distinct division of control rights that minimizes total control costs. Because the cost-minimizing division varies by firm, the optimal governance structure does as well.

TABLE I: CONTROL COSTS

	Competence Costs	Conflict Costs
Principal	<ul style="list-style-type: none"> - Lack of expertise - Inadequate information - Lack of intelligence - Poor emotional control - Duplicative efforts - Coordination problems - Cognitive myopia 	<ul style="list-style-type: none"> - Collective-action problems - Reneging on promises - Rational apathy - Rational reticence - Holdouts - Empty voting - Different horizons
Agent	<ul style="list-style-type: none"> - Lack of expertise - Inadequate information - Lack of intelligence - Poor emotional control - Overconfidence bias - Optimism bias 	<ul style="list-style-type: none"> - Shirking (reduced effort) - Diverting (self-dealing) - Option backdating - Entrenchment - Merging for size - Merging for diversification - Excessive or inefficient pay

The table lists specific sources of each of the four types of control costs. When a sole proprietor delegates no control to managers, the only potential control costs are principal competence costs (at top left in the table). When investors form a group, such as in a partnership, principal conflict costs (at top right in the table) are also possible. If those investors instead delegate all control rights to a manager, such as in a foundation or trust, principal costs are avoided, but agent competence costs and agent conflict costs (the two bottom cells in the table) become possible. Finally, when investors share control with managers, as in most business corporations, the exercise of control can generate all four types of control costs.

Principal Costs Theory thus suggests two conclusions: First, a firm will suffer control costs regardless of who exercises control—investors or managers. Second, because the impact of a given governance structure on control costs is firm-specific, there is no particular governance structure that can be described as intrinsically good, bad, welfare enhancing, or inefficient. Stated inversely, the second conclusion implies that absent firm specific elements, corporate governance structure is irrelevant to firm value.

Consequently, principal-cost theory makes different empirical predictions about the relationship between firm value and particular governance structures. Principal-cost theory suggests that shareholder-disempowering governance features will be efficient for some firms but not others, based on firm-specific characteristics. Therefore, an empirical study that properly controls for such characteristics will find no correlation between the structural feature and firm value.

We next present a model analyzing the conditions under which corporate governance is indeed irrelevant to firm value. Our model, however, does not capture all four cells of the control costs matrix. It only covers three cells (agents competence and conflict and principals competence), leaving for future work the inclusion of principals conflict costs.

1 The Model

We consider a firm run by a manager. The manager owns $\omega \in (0, 1)$ of the firm's cash flows rights. The rest, $1 - \omega$, is owned by a shareholder. The manager can either keep the status quo ($x = 0$) or change it ($x = 1$). For example, $x = 1$ can involve the acquisition of another company, whereas $x = 0$ represents doing more of the same (e.g., internal growth). If the manager keeps the status quo then firm value is $v > 0$. If the manager changes the status quo, he has to choose between two projects, denoted by $i \in \{A, B\}$. The shareholder observes a change in the status quo but they cannot directly distinguish between the two projects. Under project A, firm value is $v + R_A$ where $R_A > 0$. Under project B, firm value is $v - R_B$, where $R_B > 0$. Therefore, relative to the status quo, project A increases firm value and project B decreases firm value. However, under project B, the manager may obtain private benefits, as described below. For example, project A is the acquisition of a firm with which the company is likely to have operational synergies. Project B is the acquisition of a firm that is unlikely to yield any synergy, however, it may personally benefit the manager by satisfying his empire building aspirations or by reducing the idiosyncratic risk of the company (i.e., diversifying acquisition). Without additional information, the shareholder cannot tell whether the acquisition will increase firm value.

The manager's integrity can either be high ($\theta_1 = h$) or low ($\theta_1 = l$). We assume $\Pr[\theta_1 = h] = \eta \in (0, 1)$. If $\theta_1 = l$ then the manager obtains private benefits $b > 0$ from project B. If $\theta_1 = h$ then the manager does not obtain any private benefits. Note that high integrity does not equal no conflict. Indeed, if the manager perfectly maximizes shareholder value, control rights are irrelevant by definition. Integrity only means not taking private benefits. Subject to that constraint, the manager will still maximize his own value, taking into account all considerations, including career concerns which we describe below.

The manager's competence can also be high ($\theta_2 = h$) or low ($\theta_2 = l$). We assume $\Pr[\theta_2 = h] =$

$\lambda \in (0, 1)$ and θ_2 is independent of θ_1 . If $\theta_2 = h$ then the manager can freely choose between project A and project B. If $\theta_2 = l$ then the manager has insufficient competence to choose project A, and he must choose project B if he changes the status quo. Intuitively, an incompetent manager does not have the required skills to execute project A.¹ We denote the manager's type by $\theta = (\theta_1, \theta_2)$.

We assume that managers with low integrity prefer project B over project A, that is, $\omega(v + R_A) < b + \omega(v - R_B)$, or equivalently,

$$\omega < \frac{b}{R_B + R_A}. \quad (\text{A1})$$

Assumption (A1) requires the private benefits from project B to be sufficiently large or the cash flow right of the manager to be sufficiently low. Intuitively, without this assumption, integrity does not affect the manager's preferences over projects, and therefore, his choices are solely determined by his competence and his desire to keep his job. Under assumption (A1), the shareholder values managers with high integrity since they generate a higher shareholder value. After we present our main result we discuss its robustness to cases in which assumption (A1) is violated.

Finally, we assume that on average, a manager is as likely to do harm as he is likely to do good. Specifically,

$$\underbrace{\eta\lambda(v + R_A)}_{\substack{\text{high integrity} \\ \text{high competence}}} + \underbrace{\eta(1 - \lambda)v}_{\substack{\text{high integrity} \\ \text{low competence}}} + \underbrace{(1 - \eta)(b + v - R_B)}_{\text{low integrity}} = v. \quad (\text{A2})$$

This assumption plays a key role in our analysis. Intuitively, the expected total welfare (the shareholder and the manager value plus private benefits) that is created by changing the status quo, assuming that a manager with high integrity takes the action that maximizes shareholder value given his competence and a manager with low integrity takes the action that destroys shareholder value, is on average the same as under the status quo. Note that (A2) implies

¹As an alternative interpretation, a competent manager can tell which of the two projects will create value and which will destroy value. By contrast, an incompetent manager cannot tell the difference between the two projects, and hence, on average, this manager obtains a lower payoff.

$R_A > 0 > b - R_B$. That is, the socially efficient outcome is implementing project A. In this respect, the consumption of private benefits is potentially inefficient. Also note that (A2) implies $b = R_B - \frac{\eta\lambda}{1-\eta}R_A > 0$.

Sequence of events:

1. Initial managerial decision making: At the outset, the manager privately observes his type θ , while the shareholder remains uninformed. Given θ , the manager decides on $x \in \{0, 1\}$, a choice which is observed by the shareholder. If $x = 1$ then the manager also has to choose between project A and project B, as was described above (i.e., if $\theta_2 = l$ then the manager does not have the skills to choose project A, and he must choose project B). The choice between these two projects is not directly observed by the shareholder.

2. Realization of an interim signal: If the manager changes the status quo then firm value is uncertain and the shareholder receives additional information about the value of the firm. Specifically, if $x = 1$ then the shareholder obtains signal $s \in \{A, B\}$ where

$$\Pr [s = A|i] = \begin{cases} \tau & \text{if } i = A \\ 1 - \tau & \text{if } i = B \end{cases} \quad (1)$$

and $\tau \in (\frac{1}{2}, 1)$ is the precision of the signal. Notice that the shareholder does not learn directly about the manager's type θ . Signal s provides information about managerial integrity and competence only if the manager's choice between projects A and B is correlated with his type. Signal s can be interpreted as the ability of the shareholder to understand in real time, once the status quo is changed, whether the actions that are taken by the manager create shareholder value (if project A is chosen) or destroy it (if project B is chosen).² By contrast, if the manager keeps the status quo, that is $x = 0$, then shareholder does not receive additional information. Intuitively, maintaining firm value under the status quo does not require extraordinary actions, and as such, it does not produce new information on the manager's actions.

²Note that at the end of the game, the shareholder can perfectly infer the choice of the manager between projects A and B. The analysis, however, would not change if the payoffs from the projects are stochastic. In particular, we can interpret $v - R_B$ and $v + R_A$ as the *expected payoffs* from project B and A, respectively. The realized payoff of each project could be high or low, and in this case, the shareholder will not be able to perfectly infer from the final outcomes the actual choice of the manager.

3. Replacing the incumbent manager: After the manager makes his decision and the shareholder obtains his signal (if $x = 1$), the shareholder decides whether to fire the manager.³ We denote by $e = 1$ the event in which the incumbent manager is fired and by $e = 0$ the event in which he is retained. Firing the manager is costly. We let $c \in [0, \infty)$ be the cost the shareholder must privately incur in order to replace the manager.⁴ Variable c can capture legal rights and challenges, search costs, additional compensation a new manager might demand, the cost of overcoming managerial entrenchment (e.g., offering the incumbent manager a severance package), the cost of overcoming coordination problem among shareholders, or how quickly can shareholders fire the manager once they reached the conclusion that it is in their best interests to do so. Overall, larger c implies that the shareholder has fewer control rights. If the manager is replaced, the type of the new manager, which is denoted by θ' , is drawn independently from the same distribution as the incumbent and it is the new manager's private information. We assume that the incumbent manager loses his compensation in the terminal period if he is fired (but the manager keeps his compensation from the initial period – no clawbacks). If the manager is fired at this stage then he receives an outside option which we normalize to zero. Therefore, the manager always prefers keeping the status quo at the initial period, if changing it will result with him being fired. For this reason the manager has no incentives to voluntarily resign his job, irrespective of his type. Finally, we assume that the new manager receives as compensation a fraction ω of the cash flows at the terminal period, so shareholders cannot “save” on executive compensation simply by replacing a manager.

4. Terminal period: At the terminal period the consequences of the initial decisions (x and i) to firm value cannot be changed. However, the manager in office (the incumbent or the replacement) can make a new decision with new consequences to firm value. After the terminal decision is made, the firm is liquidated, and so the manager in office has no career concerns at this period. For simplicity, we assume that the manager faces the same set of choices as at the initial period. Specifically, he can choose between keeping and changing the status quo, and if he chooses the latter, he must choose between project A and project B with the same properties

³In practice, shareholders do not vote directly on the replacement of CEO, it is the responsibility of the board of directors. Here we assume that the board will maximize the value of the shareholders, subject to the constraints given by the governance rule of the firm. Alternatively, one can relabel the manager with the board, and interpret the problem as shareholders' decision to oust directors.

⁴The cost cannot be negative, that is, shareholders cannot commit to inefficiently replace the manager.

as at the initial period.⁵ The ability and incentives of the manager in office to choose between projects, as a function of his type, are also the same as at the initial period. We denote by $x_t \in \{0, 1\}$ and $i_t \in \{A, B\}$ the manager's choices at period $t \in \{1, 2\}$, where $t = 1$ corresponds to the initial period and $t = 2$ corresponds to the terminal period.

5. Distribution of payoffs: The shareholder and the manager are risk neutral, and the discount rate between periods is zero. Define the periodic total shareholder value as

$$r(x, i) = \begin{cases} v + xR_A & \text{if } i = A \\ v - xR_B & \text{if } i = B. \end{cases} \quad (2)$$

Then, the shareholder's total payoff across the two periods is,⁶

$$u_{SH} = (1 - \omega) [r_1(x_1, i_1) + r_2(x_2, i_2)] - \mathbf{1}_{e=1} \cdot c.$$

The incumbent manager's payoff is,

$$\begin{aligned} u_M &= \omega r(x, i_1) + \mathbf{1}_{x_1=1 \text{ and } i_1=B} \cdot \mathbf{1}_{\theta_1=l} \cdot b \\ &\quad + \mathbf{1}_{e=0} \times [\omega r_2(x_2, i_2) + \mathbf{1}_{x_2=1 \text{ and } i_2=B} \cdot \mathbf{1}_{\theta_1=l} \cdot b]. \end{aligned} \quad (3)$$

The replacement manager's payoff is,

$$u_R = \mathbf{1}_{e=1} \times [\omega r_2(1, i_2) + \mathbf{1}_{x_2=1 \text{ and } i_2=B} \cdot \mathbf{1}_{\theta_1=l} \cdot b], \quad (4)$$

where by "replacement" we refer to any manager that was hired at the beginning of the terminal period.

2 Analysis

We solve for Perfect Sequential Equilibria in pure strategies. That is, we focus on Perfect Bayesian Equilibria that satisfy the Grossman and Perry (1986) criterion. All proofs not in the

⁵In general, the payoffs at the terminal period can be different from the payoffs at the initial period.

⁶We use notation of $\mathbf{1}$ for an indicator function.

main text are given in the Appendix.

The goal of the analysis is to find the conditions under which total expected welfare (total shareholder value plus manager value and private benefits) in equilibrium is invariant to the allocation of control rights, i.e., the cost of firing the incumbent manager, c . If total expected welfare is invariant to c , then regardless of how c affects the division of surplus between the manager and the shareholder, they can negotiate an arrangement (e.g., side payments) that keeps each of the negotiating parties as well off. In this respect, when welfare is invariant to c , corporate governance structure is irrelevant.⁷

We solve the game backward. At the terminal period the manager has no risk of being fired. Since $v > 0$, the manager never resigns voluntarily, he can always get a higher payoff by keeping the status quo. Therefore, an incompetent manager with a high integrity keeps the status quo, and a competent manager with a high integrity changes the status quo and chooses project A. Given assumption (A1), a low integrity manager also changes the status quo, but unlike the high integrity manager, he chooses project B irrespective of his competence. The next lemma summarizes this observation.

Lemma 1 *In any equilibrium the following holds at the terminal period: The manager changes the status quo if and only if he has a high competence or a low integrity. If the manager changes the status quo, he chooses project B if and only if he has a low integrity.*

The next result provides initial characterization of the manager's decision at the initial period.

Lemma 2 *In any equilibrium, a manager with a high integrity and a low competence always keeps the status quo at the initial period. If the manager keeps the status quo at the initial period, he is never fired. Moreover, the equilibrium exhibits exactly one of the following two properties at the initial period:*

(i) *Type I equilibrium - the manager keeps the status quo irrespective of his type.*

⁷Alternatively, one could define corporate governance irrelevance as a situation in which the total expected shareholder value, excluding insiders' private benefits, is invariant to c . If negotiations of side-payments are not feasible, this may be a preferred definition. A similar analysis would follow under this definition, with a slight modification to Assumption (A2).

(ii) *Type II equilibrium - the manager changes the status quo if and only if he has high competence or low integrity.*

According to Lemma 2, in any equilibrium an incompetent manager with a high integrity keeps the status quo at the initial period. Intuitively, the lack of competence implies that the manager cannot execute project A, and the high integrity implies that the manager has no incentives to choose project B. Therefore, the manager keeps the status quo, even at the risk of being fired by the shareholder. Lemma 2 also implies that the shareholder cannot distinguish between the other three types of managers solely based on x_1 . That is, managers with either high competence or low integrity always choose in equilibrium the same observable action at the initial period, i.e., either they all keep the status quo (under Type I equilibrium), or they all change it (under Type II equilibrium). Intuitively, if the manager does not face the risk of being fired (e.g., c is large), he has incentives to change the status quo as long as he has a high competence or a low integrity. Alternatively, if the manager faces the risk of losing his job (e.g., c is small) and his decision to change the status quo was revealing of his low integrity, the manager would have had incentives to deviate and choose the action that signals high integrity, thereby avoiding the firing decision.⁸ In this case, managers with high competence or low integrity will also choose the same observable actions.

In general, the shareholder fires the incumbent manager if two conditions are met: (i) the replacement manager is expected to generate a higher shareholder value than the incumbent's, and (ii) the cost of firing the incumbent manager justifies the benefit from doing so. According to Lemma 1, the shareholder's expected value if he fires the incumbent manager and hires a replacement, net of the firing cost, is

$$(1 - \omega) [v + \eta \lambda R_A - (1 - \eta) R_B] - c. \quad (5)$$

The shareholder compares this term with the expected value under the incumbent manager. The shareholder expectation regarding the incumbent's manager future performance, however, depends on the information that is available to the shareholder. If the manager keeps the status

⁸Lemma 2 holds unless $v = \frac{1-\tau}{\tau} (b/\omega - R_B)$. Under this knife edge condition, there could be an equilibrium in which the decision of a low integrity manager to change the status quo at the initial period depends on his competence. However, even if $v = \frac{1-\tau}{\tau} (b/\omega - R_B)$, our main result, as given by Proposition 1, continues to hold.

quo at the initial period (Type I equilibrium), then according to Lemma 2, the shareholder does not learn additional information about the manager's integrity or competence, and therefore, the shareholder has no reason to fire him. However, if the equilibrium involves a change to the status quo (Type II equilibrium), then the shareholder learns that the manager either has high competence or low integrity, and he also potentially learns additional information about the manager's type through signal s .

Specifically, let μ be the probability that the shareholder believes that the manager has a high competence and a high integrity conditional on a change to the status quo, but unconditional on the realization of signal s . Then,

$$\mu = \frac{\lambda\eta}{\eta\lambda + 1 - \eta}. \quad (6)$$

Signal s is informative of the manager's choice between project A and B. It can be also informative of the manager's type if the manager's actions are correlated with his type. Indeed, if conditional on $x_1 = 1$ the manager chooses project A if and only if he has high integrity and high competence, then based on (1) and Bayes' rules, the shareholder's beliefs are

$$\mu_s \equiv \Pr[\theta = (h, h) | s, x_1 = 1] = \begin{cases} \frac{\mu\tau}{\mu\tau + (1-\mu)(1-\tau)} & \text{if } s = A \\ \frac{\mu(1-\tau)}{\mu(1-\tau) + (1-\mu)\tau} & \text{if } s = B. \end{cases} \quad (7)$$

Note that $\tau > \frac{1}{2}$ implies $\mu_A > \mu > \mu_B$. That is, the shareholder updates upward (downward) their beliefs about the manager's integrity and competence upon observing $s = A$ ($s = B$). Therefore, conditional on signal s , the shareholder's expected value if he retains the incumbent manager is

$$(1 - \omega) [v + \mu_s R_A - (1 - \mu_s) R_B]. \quad (8)$$

The shareholder fires the manager conditional on signal s if and only if the expression in (5) is higher than the expression in (8), which is equivalent to $c \leq c_s^*$ where

$$c_s^* \equiv (1 - \omega) [(\eta\lambda - \mu_s) R_A + (\eta - \mu_s) R_B]. \quad (9)$$

Notice that $\mu_A > \mu > \mu_B$ implies $c_B^* > c_A^*$, that is, the shareholder is more likely to fire the

manager after observing signal $s = B$.

The next result describes the conditions under which Type I and Type II equilibria exist.

Lemma 3 *An equilibrium always exists and is unique. Let*

$$v^* \equiv \min \left\{ \frac{\tau}{1-\tau} R_A, \frac{1-\tau}{\tau} (b/\omega - R_B) \right\}, \quad (10)$$

then:

- (i) *If $c > c_B^*$ then the equilibrium is of Type II and it has the following properties: The manager changes the status quo and chooses project B if he has low integrity, he changes the status quo and chooses project A if he has high integrity and high competence, and he keeps the status quo otherwise. In addition, the manager is never fired in this equilibrium.*
- (ii) *If $c \leq c_B^*$ and $v > v^*$ then the equilibrium is of Type I, and the manager is never fired in this equilibrium.*
- (iii) *If $c \leq c_B^*$ and $v \leq v^*$ then there is $c \in (0, c_B^*]$ such that the equilibrium is of Type II, and in this equilibrium the manager is fired if and only if he changes the status quo and $s = B$.*

To understand Lemma 3, note that if $c > c_B^*$ then the shareholder never fires the manager if the manager changes the status quo. Without the risk of being fired, the manager has incentives to change the status quo and an equilibrium in which the manager keeps the status quo cannot be sustained (i.e., Type I equilibrium).⁹ However, if $c \leq c_B^*$ and the manager changes the status quo, he is exposed to the risk of being fired by the shareholder. Therefore, when considering whether to change the status quo, the manager trades off a lower compensation at the initial period with a higher probability of keeping his job at the terminal period. When v is sufficiently high, i.e., $v > v^*$, the manager prefers keeping his job for another period, and therefore, he chooses to maintain the status quo. Under this condition, a Type I equilibrium exists. If $v \leq v^*$ then the manager is willing to take the risk of being fired and he changes the status quo in equilibrium. Since $c \leq c_B^*$, the shareholder fires the manager whenever he observes signal $s = B$.

⁹Formally, if $x_1 = 0$ was an equilibrium then as long as $c > c_B^*$, all types with either low integrity or high competence would have had a profitable deviation to $x_1 = 1$ in the spirit of Grossman and Perry (1986).

The explicit form of cutoff v^* , which is given by (10), can be understood as follows. In the aforementioned trade-off, a manager with a high integrity and a high competence faces a lower risk of being fired upon a change to the status quo when the signal of the shareholder is precise (high τ). Indeed, a competent shareholder will not confuse project A with project B, and so, the manager is less likely to be fired because the shareholder misinterpreted firm performances. At the same time, the manager's payoff from changing the status quo is increasing in R_A . Therefore, a manager with a high integrity and a high competence is willing to take the risk of being fired as long as τ or R_A are sufficiently high, that is, $v < \tau(v + R_A) \Leftrightarrow v \leq \frac{\tau}{1-\tau}R_A$. By contrast, a manager with a low integrity faces a higher risk of being fired upon a change to the status quo when the signal of the shareholder is precise (high τ). At the same time, the payoff from changing the status quo is increasing in $\frac{b}{\omega} - R_B$, the private benefit net of the decrease in the shareholder value from project B. Therefore, a manager with a low integrity is willing to take the risk of being fired as long as τ or R_B are sufficiently small, or $\frac{b}{\omega}$ is sufficiently high, that is, $v < (1 - \tau) \left(\frac{b}{\omega} + v - R_B \right) \Leftrightarrow v \leq \frac{1-\tau}{\tau} \left(\frac{b}{\omega} - R_B \right)$. Therefore, if v is smaller than v^* , which is the minimum of the above two expressions, the manager is willing to take the risk of being fired and change the status quo as long as his competence is high (when $v \leq \frac{\tau}{1-\tau}R_A$) or his integrity is low (when $v \leq \frac{1-\tau}{\tau} \left(\frac{b}{\omega} - R_B \right)$).

We are now ready to state our main result.

Proposition 1 *Corporate governance structure is irrelevant if and only if $v > v^*$.*

Recall that corporate governance structure is irrelevant if the expected total welfare in equilibrium is invariant to c . Proposition 1 follows directly from Lemma 3. Indeed, parts (i) and (ii) of Lemma 3 show that if $v > v^*$ the manager is never fired in equilibrium, irrespective of c . Therefore, the expected total welfare that is created at the terminal period, which can be calculated from Lemma 1, is invariant to c . The expected total welfare that is created at the initial period is also invariant to c when $v > v^*$. To see why, note that if $c \leq c_B^*$ then part (ii) of Lemma 3 shows that the equilibrium is of Type I. Therefore, the manager keeps the status quo with probability one and the expected total welfare that is created at the initial period in this equilibrium is v . At the same time, part (i) of Lemma 3 shows that if $c > c_B^*$ then the equilibrium is of Type II. In this equilibrium the manager keeps the status quo if he has high integrity and low competence, changes the status quo and chooses project A if

he has high integrity and high competence, and changes the status quo and chooses project B if he has low integrity. The expected total welfare is

$$\eta\lambda(v + R_A) + \eta(1 - \lambda)v + (1 - \eta)(b + v - R_B),$$

which according to Assumption (A2) is exactly v . Therefore, if $v > v^*$ then the corporate governance structure is irrelevant.

By contrast, if $v \leq v^*$ then part (iii) of Lemma 3 shows that for small values of c , the manager is fired with a strictly positive probability in equilibrium. At the same time, for sufficiently large values of c the manager is never fired in equilibrium. As a result, the total expected value that is created in equilibrium will generally depend on c , the cost of firing the manager. In this case, the corporate governance structure is relevant.

What is the intuition behind Proposition 1? The result implies that when the manager's career concerns are sufficiently important ($v > v^*$), the allocation of control rights to the shareholder does not change the welfare that is created in any equilibrium. If c is low, the shareholder will exercise his right to fire the manager if he gets an indication that the manager has low integrity (i.e., the realized signal is $s = B$). To avoid this risk, the manager will keep the status quo. Doing so is safe from the manager's perspective since it does not provide the shareholder with additional information about his low integrity, and hence, does not give the shareholder a reason to fire him. If c is high, the shareholder is unlikely to fire the manager, and as a consequence, the manager does not fear taking actions that could signal his low integrity. Irrelevance is obtained from assumption (A2), which is key to our result. Assumption (A2) implies that the expected total welfare that is created by changing the status quo, assuming that a manager with high integrity takes the action that maximizes shareholder value given his competence and a manager with low integrity takes the action that destroys shareholder value, is on average the same as under the status quo. This assumption reflects our view that without additional firm or manager specific information, managerial actions on average do not do more harm than good.

According to Proposition 1, condition $v > v^*$ is both necessary and sufficient for the irrelevance of the corporate governance structure. Indeed, a low v^* guarantees that whenever the risk of being fired is significant (i.e., c is small), the manager will resort to the status quo which

on average creates the same value, but avoid the costs and benefits that firing a manager might create. Notice that v^* depends on τ , the precision of the signal that the shareholder obtains if the status quo changes. Parameter τ can also be interpreted as the shareholder's competence. According to (10), it appears that v^* has an inverted U-shape as a function of τ . To understand this pattern, notice that when τ is small, a manager with a high integrity and a high competence is most concerned that the (incompetent) shareholder will not be able to recognize that his decision to change the status quo (and choose project A) increases the shareholder value, and fire him as a consequence. As a result, when τ is small, managers with high integrity and high competence have the strongest incentives to avoid the risk of being fired, but this concern is mitigated for larger values of τ . In this range, v^* increases in τ . By contrast, if τ is large, it is now the manager with a low integrity that fears that the (competent) shareholder will correctly notice that he destroys shareholder value by changing the status quo, and fire him. Therefore, when τ is large, managers with low integrity have the strongest incentives to avoid the risk of being fired, and this concern is amplified by larger values of τ . In this range, v^* decreases in τ , which explains the inverted U-shape of v^* as a function of τ .

Remark I - irrelevance when $\tau = 1$ (perfect shareholder competence): Proposition 1 never holds when $\tau = 1$. That is, the shareholder must be incompetent to some degree, even if it is arbitrarily small, to ensure our irrelevance result. If $\tau = 1$ then a manager with a high integrity and a high competence always changes the status quo and chooses project A in equilibrium. Indeed, this manager faces no risk of being confused with a low-integrity manager, and therefore, he can be certain that the shareholder will never fire him. By contrast, a manager with a low integrity is always fired by the shareholder when c is sufficiently small if he chooses project B. Indeed, a competent shareholder will never ascribe bad firm performances (i.e., $s = B$) to the error in his signal; he is too confident of his ability to correctly read firm performances. Instead, the shareholder will ascribe it to the low integrity of the manager, and will fire him as a result. Therefore, a low integrity manager must either choose project A (if he can) or risk the possibility of being fired when c is sufficiently small. Either way, the expected shareholder value that is created in equilibrium will depend on c .

Remark II - irrelevance when assumption (A1) is violated: Proposition 1 requires $\omega < \frac{b}{R_B + R_A}$. This assumption guarantees that a low integrity manager prefers project B over

project A. If instead $\omega \geq \frac{b}{R_B+R_A}$, then all managers prefer project A irrespective of their integrity, that is, there is no real conflict between managers and shareholders as their pay is sensitive to firm performances (ω is large) and they have no private benefits (b is small). In the Appendix we show that if all managers could choose project A (i.e., all managers have high competence, $\lambda = 1$) then irrelevance of corporate governance holds even when assumption (A1) is violated. Intuitively, since managers always take the action that maximizes shareholder value, the shareholder has no reason to fire them. However, if $\omega \geq \frac{b}{R_B+R_A}$ and some managers have low-competence, then irrelevance of corporate governance structure will generally not hold under assumption (A2). Indeed, if $\omega \geq \frac{b}{R_B+R_A}$ then the only difference from the analysis above is that managers with low-integrity and high-competence choose project A (instead of project B) whenever they change the status quo. Therefore, if assumption (A2) holds then a Type II equilibrium would create more value than a Type I equilibrium. Since Type II equilibrium is more likely when c is large, the expected total welfare will *increase* with c . Intuitively, the fear of being fired would incentivize managers to keep the status quo, which is inefficient under these assumptions.

3 Concluding remarks

[...]

References

- [1] Grossman, S. D. and M. Perry (1986): “Perfect Sequential Equilibria.” *Journal of Economic Theory* 39, 97–119.

A Appendix

A.1 Proof of Lemma 2

We prove Lemma 2 by proving the following three ancillary results.

Lemma 4 *In any equilibrium, type (h, l) chooses $x_1 = 0$.*

Proof. Suppose on the contrary type (h, l) chooses $x_1 = 1$ in equilibrium. Note that the payoff of type (h, l) from $x_1 = 1$ is strictly smaller than $\omega(v + v - R_B)$. Then, it must be that the shareholder fires the manager if $x_1 = 0$. Otherwise, type (h, l) has strict incentives to choose $x_1 = 0$, and secure a payoff of $\omega(v + v)$ across the two periods. There are three cases to consider:

1. First, suppose the shareholder fires the manager with probability one upon $x_1 = 1$. Since the manager is fired irrespective of his choice of x_1 , type (h, l) strictly prefers $x_1 = 0$, thereby getting a payoff of ωv which is higher than $\omega(v - R_B)$, a contradiction.
2. Second, suppose the shareholder fires the manager with probability zero upon $x_1 = 1$. Then, all other types (i.e., all types with low integrity or high competence) will be choosing $x_1 = 1$ as well, since this way they secure the highest payoff each type can obtain. Therefore, $x_1 = 0$ is an off-equilibrium event. However, note that this equilibrium does not survive the Grossman and Perry (1986) criterion. In particular, type (h, l) has strict incentives to deviate to $x_0 = 0$ if upon such a deviation, the shareholder does not fire him. All other types never want to deviate no matter what the shareholder does. Thus, it is left to check that the shareholder has no incentives to fire the manager if the shareholder knows for sure that the manager is of type (h, l) . Indeed, if the shareholder retains this manager he gets next period $(1 - \omega)v$, and if he fires the manager he gets the expression in (5) in the main text. It can be verified that Assumption (A2) guarantees that the latter is strictly smaller than the former for any $c \geq 0$. Therefore, this cannot be an equilibrium.
3. Third, suppose that upon $x_1 = 1$ the shareholder fires the manager if and only if $s = s^* \in \{A, B\}$. Note that any type of manager who chooses $x_1 = 0$ is fired for sure, and hence,

obtains a payoff of ωv from $x_0 = 0$. By revealed preferences of type (h, l) who prefers $x_1 = 1$ over $x_1 = 0$, it must be

$$\omega v \leq \omega(v - R_B) + (1 - \Pr[s = s^* | i_1 = B]) \omega v.$$

Therefore, types (l, h) and (l, l) also strictly prefer $x_1 = 1$ and $i_1 = B$ over $x_1 = 0$. Indeed, since $b > 0$ and $b + \omega(v - R_B) > v$ (recall assumption (A1)) if the above inequality holds, then so must the one below

$$\omega v \leq b + \omega(v - R_B) + (1 - \Pr[s = s^* | i_1 = B]) (b + \omega(v - R_B)).$$

Therefore, either only type (h, h) chooses $x_1 = 0$ in this equilibrium, or $x_1 = 0$ is an off-equilibrium event. In the former case it cannot be that the shareholder fires the manager, the replacement manager will always under-perform the incumbent. In the latter case, the equilibrium does not survive the Grossman and Perry (1986) criterion, as in step #2 above. We get a contradiction.

We conclude, type (h, l) chooses $x_1 = 0$ in any equilibrium. ■

Lemma 5 *Any equilibrium is either of Type I or Type II, as described by Lemma 2.*

Proof. Let $\bar{c} \equiv (1 - \omega) \eta (\lambda R_A + R_B)$. We first prove the statement for $c > \bar{c}$. If $c > \bar{c}$ then the shareholder will not fire the manager even if he learns that he has low integrity with probability one. Indeed, the shareholder value at the terminal period from retaining a low integrity manager is $(1 - \omega)(v - R_B)$, and the shareholder value if the incumbent is fired, net of the firing cost, is given by expression in (5) in the main text. Simple algebra shows that the former is greater than the latter if and only if $c \leq \bar{c}$. Therefore, if $c > \bar{c}$ then the manager never faces the threat of being fired (given Lemma 1, a low integrity manager generates the lowest shareholder value at the terminal period). Without the risk of being fired, the initial decision to change the status quo only affects the manager's payoff at the initial period. However, by keeping the status quo the manager gets ωv at the initial period, and by changing it the manager gets $\omega(v + R_A) > \omega v$ if he chooses project A and $b + \omega(v - R_B) > \omega v$ if he chooses project B. Therefore, keeping the status quo is suboptimal in any equilibrium if $\theta_1 = l$ or $\theta_2 = h$, and in these cases the manager will prefer changing the status quo.

Next, we prove the statement for $c \leq \bar{c}$. There are three sub-cases to consider:

1. We first prove that it cannot be in equilibrium that the manager changes the status quo if and only if $\theta = (h, h)$. Suppose on the contrary that this behavior is an equilibrium. If the manager chooses $x_1 = 1$, the shareholder infers $\theta = (h, h)$, and the manager is never fired regardless of his choice between project A and B, and the signal that is obtained by the shareholder. Indeed, since $\tau < 1$, regardless of the shareholder's beliefs about which project type (h, h) chooses in equilibrium, he will ascribe a signal that is inconsistent with his beliefs to the possibility of an error. Therefore, by choosing $x_1 = 1$ and $i_1 = B$ a manager with low integrity can secure a payoff of $b + \omega(v - R_B)$ in each period. This payoff is strictly higher than the payoff this type of manager would obtain by keeping the status quo at the initial period, even if by doing so he never gets fired. Since a profitable deviation exists, this cannot be an equilibrium.
2. Next, we prove that it cannot be in equilibrium that the manager changes the status quo if and only if he has low integrity. Since $c \leq \bar{c}$, in this equilibrium the shareholder fires the manager if $x_1 = 1$, irrespective of his choice between project A and B. If $x_1 = 0$ then the shareholder does not fire the manager. Otherwise, it implies that the shareholder fires the manager irrespective of his beliefs about his type. However, since the replacement manager has the same ex-ante properties as the incumbent, firing with probability one is never optimal. Therefore, the shareholder fires the manager if and only if $x_1 = 1$. However, the low integrity manager's payoff if $x_1 = 1$ and $i_1 = B$ is $b + \omega(v - R_B)$, which is strictly smaller than $\omega v + b + \omega(v - R_B)$, his payoff when $x_1 = 0$. So this cannot be an equilibrium either.
3. Finally, we prove that it cannot be in equilibrium that the decision of a manager with a low integrity to change the status quo depends on his competence. There are three sub-cases to consider.
 - (a) First, suppose the shareholder fires the manager in equilibrium if $x_1 = 0$. Then, as in case #2 above, he does not fire the manager with probability one if $x_1 = 1$. Therefore, irrespective of his competence, a manager with a low integrity has strict

incentives to choose $x_1 = 1$ and $i_1 = B$: he faces a lower probability of being fired and a higher payoff at the initial period.

- (b) Second, suppose the shareholder does not fire the manager in equilibrium if $x_1 = 0$, and type (h, h) chooses $x_1 = 0$. In this case, upon $x_1 = 1$ the shareholder must infer that the manager has low integrity, and since $c \leq \bar{c}$, he would fire the manager. Therefore, as in case #2 above, a manager with a low integrity has strict incentives to choose $x_1 = 0$, irrespective of his competence.
- (c) Third, suppose the shareholder does not fire the manager in equilibrium if $x_1 = 0$, but type (h, h) chooses $x_1 = 1$. In this case, it cannot be that the shareholder fires the manager with probability one upon $x_1 = 1$, since then, as in case #2 above, a low integrity manager has strict incentives to choose $x_1 = 0$, irrespective of his competence. Also, it cannot be that the shareholder does not fire the manager with a positive probability upon $x_1 = 1$, since then, as in case #1 above, a low integrity has strict incentives to choose $x_1 = 1$, irrespective of his competence. Therefore, it must be that the shareholder's firing decision depends on the realization of signal s , which in turn, implies that the manager's choice between project A and B must depend on his type (otherwise, the shareholder cannot make additional inference from signal s , and hence, has no reason to condition his firing decision on signal s). Note that type (h, h) never chooses project B. Indeed, he is better off choosing $x_1 = 0$, thereby getting a higher payoff at the initial period and completely avoiding the risk of being fired. Therefore, it must be that type (h, h) chooses $i_1 = A$. If so, a low integrity manager who chooses $x_1 = 1$ must also choose $i_1 = B$ (otherwise, the firing decision cannot depend on signal s). Since a manager with a low integrity and a low competence can always chooses project B, the assumption that the decision of a manager with low integrity to change the status quo depends on his competence implies that the low integrity must be indifferent between choosing $x_1 = 0$, and choosing $x_1 = 1$ with $i_1 = B$. That is,

$$b + \omega(v - R_B) + (1 - \tau)(b + \omega(v - R_B)) = b + \omega(v - R_B) + \omega v \Leftrightarrow \frac{1 - \tau}{\tau} \left(\frac{b}{\omega} - R_B \right) = v$$

Therefore, unless this knife edge case holds, this cannot be an equilibrium. Also note

that type (h, h) prefers $x_1 = 1$ and $i_1 = A$ over $x_1 = 0$ if and only if

$$\omega(v + R_A) + \tau\omega(v + R_A) \geq \omega(v + R_A) + \omega v \Leftrightarrow \frac{\tau}{1 - \tau}R_A \geq v.$$

Therefore, if $\frac{\tau}{1 - \tau}R_A < v$ then this cannot be an equilibrium either. This completes the proof.

Overall, given Lemma 4, ruling out the three cases above shows that the equilibrium must either be of type I or type II, as described by the statement of Lemma 2. ■

Lemma 6 *In any equilibrium, if $x_1 = 0$ the manager is not fired.*

Proof. If it is a Type I equilibrium then the manager chooses $x_1 = 0$ irrespective of his type. Without additional information, the shareholder never fires the manager since the replacement manager has exactly the same expected performances. If it is a Type II equilibrium, then only type (h, l) chooses $x_1 = 0$. As in step #2 in proof of Lemma 4 above, the shareholder never fires the manager in this case. The proof is completed by noting that according to Lemma 5, no other equilibrium can exist. ■

A.2 Proof of Lemma 3

We prove the following four ancillary results, which are used in the proof of Lemma 3.

Lemma 7 *A Type II equilibrium survives the Grossman and Perry (1986) criterion.*

Proof. According to Lemma 2, in a Type II equilibrium type $\theta = (h, l)$ chooses $x_1 = 0$. Since there are no off-equilibrium events in a Type II equilibrium, it trivially survives the Grossman and Perry (1986) criterion. ■

Lemma 8 *If an equilibrium (that survives the Grossman and Perry (1986) criterion) exists, it is also unique.*

Proof. According to Lemma 2, the equilibrium can either be of Type I or Type II. Suppose on the contrary that a Type I and Type II equilibrium coexist. Based on Lemma 6, in both Type I and Type II equilibrium the manager is never fired upon $x_1 = 0$. Also note that

in a Type I equilibrium, $x_1 = 1$ is an off-equilibrium event. However, a deviation of types $\theta \in \{(h, h), (l, h), (l, l)\}$ to the strategies that are prescribed by the Type II equilibrium (which is assumed to exist) will show that any other off-equilibrium beliefs are in violation of the Grossman and Perry (1986) criterion. Therefore, a Type I equilibrium that survives the Grossman and Perry (1986) criterion does not exist, a contradiction. ■

Lemma 9 *Type (h, h) chooses project A in a Type II equilibrium.*

Proof. Suppose on the contrary type $\theta = (h, h)$ chooses project B. Then, it must be that in this equilibrium the shareholder is weakly more likely to fire the manager when $s = A$ than when $s = B$. Therefore, type $\theta \in \{(l, h), (l, l)\}$ must have strict incentives to choose project B: Not only is he getting $b + \omega(v - R_B)$ instead of $\omega(v + R_A)$, but he is also more likely to keep his job. Therefore, it must be that types $\theta \in \{(h, h), (l, h), (l, l)\}$ choose option B. If so, the choice of a project is uninformative about θ (beyond knowing that $\theta \neq (h, l)$) and the shareholder's decision to fire the manager does not depend on the realization of s . If the shareholder does not fire the manager, then type $\theta = (h, h)$ has strict incentives to choose $i_1 = A$, a contradiction. If the shareholder fires the manager upon $x_1 = 1$, then the payoff of type $\theta \neq (h, l)$ from the equilibrium play is

$$\begin{cases} \omega(v + R_A) & \text{if } \theta = (h, h) \\ b + \omega(v - R_B) & \text{if } \theta = (l, h) \text{ or } \theta = (l, l). \end{cases}$$

However, knowing that upon a deviation to $x_1 = 0$ the shareholder will not fire the manager (see Lemma 6), the payoff of type $\theta \neq (h, l)$ from such a deviation is

$$\omega v + \begin{cases} \omega(v + R_A) & \text{if } \theta = (h, h) \\ b + \omega(v - R_B) & \text{if } \theta = (l, h) \text{ or } \theta = (l, l), \end{cases}$$

which is strictly greater than the payoff from the equilibrium play, a contradiction. ■

Lemma 10 *If $c \leq c_B^*$ and a Type II equilibrium does not exist, then a Type I equilibrium exists.*

Proof. Suppose $c \leq c_B^*$ and a Type II equilibrium does not exist. We show by construction that a Type I equilibrium exists. Consider a Type I equilibrium in which the off-equilibrium

beliefs upon $x_1 = 1$ are such that $\theta_2 = l$ for sure (irrespective of signal s). Based on Lemma 1, the payoff of type θ from the equilibrium play ($x_1 = 0$) is

$$U_0(\theta) \equiv \omega v + \begin{cases} \omega(v + R_A) & \text{if } \theta = (h, h) \\ b + \omega(v - R_B) & \text{if } \theta = (l, h) \text{ or } \theta = (l, l) \\ \omega v & \text{if } \theta = (h, l). \end{cases} \quad (11)$$

Since $c \leq c_B^*$, if $x_1 = 1$ then the shareholder fires the manager regardless of the realization of signal s . The manager's payoff upon deviation to $x_1 = 1$ is

$$\begin{cases} \omega(v + R_A) & \text{if } \theta = (h, h) \\ b + \omega(v - R_B) & \text{if } \theta = (l, h) \text{ or } \theta = (l, l) \\ \omega v & \text{if } \theta = (h, l), \end{cases}$$

which is strictly smaller than $U_0(\theta)$ for all types. Moreover, since a Type II equilibrium does not exist, and an equilibrium can either be of Type I or Type II, then the off-equilibrium beliefs satisfy the Grossman and Perry (1986) criterion. Indeed, if on contrary there was a violation of the Grossman and Perry (1986) criterion, then the set of off-equilibrium beliefs and actions of types $\theta \in \{(h, h), (l, h), (l, l)\}$ that would create this violation, by definition, will constitute an equilibrium that is not a Type I equilibrium (recall that according to Lemma 4 type (h, l) chooses $x_1 = 0$ in any equilibrium). This argument contradicts the non-existence of other equilibria. Therefore, if a Type II equilibrium does not exist then a Type I equilibrium exists.

■

We are now ready to prove Lemma 3.

Proof of Lemma 3. Consider part (i) and suppose $c > c_B^*$. Given Lemmas 7-9, we complete the argument in two steps:

1. We argue that if $c > c_B^*$ then a Type II equilibrium with the properties as described in the statement exists. Indeed, if the manager follows this strategy, then $\Pr[\theta = (h, h) | x_1 = 1, s = B] = \mu_B$. Since $c > c_B^*$, the shareholder never fires the manager upon $x_1 = 1$. The manager obtains his highest payoff conditional on his type by following the equilibrium play, and therefore, has no incentives to deviate. In particular, he has no incentives to choose $x_1 = 0$

regardless of the decision of the shareholder to fire the manager upon $x_1 = 0$. Combined with Lemma 2, the argument is completed.

2. We argue that if $c > c_B^*$ then no other Type II equilibrium exists. Indeed, by Lemma 9, type $\theta = (h, h)$ chooses project A in any Type II equilibrium. Therefore, the shareholder has stronger incentives to fire the manager when $s = B$. However, notice that regardless of the choice of types $\theta \in \{(l, h), (l, l)\}$ between projects A and B, $\Pr[\theta = (h, h) | x_1 = 1, s = B] \geq \mu_B$. Since $c > c_B^*$, the shareholder never fires the manager. Therefore, types $\theta \in \{(l, h), (l, l)\}$ must be choosing project B (even if the manager could choose project A), as required.

Consider part (ii). Given Lemma 10, it is sufficient to prove that if $c \leq c_B^*$ and $v > v^*$ then a Type II equilibrium does not exist. Suppose on the contrary that a Type II equilibrium exists. Recall that in this equilibrium type (h, h) chooses $x_1 = 1$ and project A (Lemma 9). Note that it cannot be that in this equilibrium the shareholder does not fire the manager if $s = B$. Indeed, without the risk of being fired, types $\theta \in \{(l, h), (l, l)\}$ will choose $i_1 = B$. However, under this strategy, $\Pr[\theta = (h, h) | x_1 = 1, s = B] = \mu_B$, and since $c \leq c_B^*$, the shareholder will fire the manager, a contradiction. Also note that it cannot be that in this equilibrium the shareholder fires the manager if $s = A$. Indeed, if that was the case, the shareholder fires the manager also when $s = B$. The equilibrium payoff of type (h, h) is therefore $\omega(v + R_A)$, which is strictly lower than $U_0(h, h)$ (which is given by (11) in the proof of Lemma 10, and recall that if $x_1 = 0$ the shareholder does not fire the manager), his payoff from a deviation to $x_1 = 0$, a contradiction. Overall, it must be that upon $x_1 = 1$, the shareholder fires the manager if and only if $s = B$. In this case, the payoff of type (h, h) from the equilibrium play is

$$U_1(h, h) = \omega(v + R_A) + \tau\omega(v + R_A).$$

Note that $U_1(h, h) \geq U_0(h, h)$ if and only if $v \leq \frac{\tau}{1-\tau}R_A$. Therefore, if a Type II equilibrium exists it must be $v \leq \frac{\tau}{1-\tau}R_A$. Also note that in a Type II equilibrium type (l, l) chooses $x_1 = 1$, and hence, he must also choose $i_1 = B$. His payoff from the equilibrium play is

$$U_1(l, l) = b + \omega(v - R_B) + (1 - \tau)(b + \omega(v - R_B)).$$

Note that $U_1(l, l) \geq U_0(l, l)$ if and only if $v \leq \frac{1-\tau}{\tau} (\frac{b}{\omega} - R_B)$. Therefore, if a Type II equilibrium exists it must also be $v \leq \frac{1-\tau}{\tau} (\frac{b}{\omega} - R_B)$. However, if $v > v^*$ then either $v \leq \frac{\tau}{1-\tau} R_A$ or $v \leq \frac{1-\tau}{\tau} (\frac{b}{\omega} - R_B)$ is violated, a contradiction. Therefore, a Type II equilibrium does not exist as required.

Finally, consider part (iii), and suppose $c \leq c_B^*$ and $v \leq v^*$. Consider a Type II equilibrium in which type (h, h) chooses $i_1 = A$, type (l, l) chooses $i_1 = B$, type (h, l) chooses $x_1 = 0$, type (l, h) chooses $i_1 = i^*$ where

$$i^* = \begin{cases} A & \text{if } v \geq \frac{2(1-\tau)(\frac{b}{\omega} - R_B) - R_A}{2\tau - 1} \\ B & \text{else,} \end{cases}$$

and the shareholder fires the manager if and only if $x_1 = 1$ and $s = B$. Note that if $i^* = B$ then $\Pr[\theta = (h, h) | x_1 = 1, s = B] = \mu_B$ and if $i^* = A$ then $\Pr[\theta = (h, h) | x_1 = 1, s = B] \equiv \mu' \in (\mu_B, \mu)$. We show that this equilibrium exists for $c = \hat{c}$ where

$$\hat{c} = \begin{cases} c' \equiv (1 - \omega) [(\eta\lambda - \mu') R_A + (\eta - \mu') R_B] & \text{if } v \geq \frac{2(1-\tau)(\frac{b}{\omega} - R_B) - R_A}{2\tau - 1} \\ c_B^* & \text{else.} \end{cases}$$

Note that $\mu' > \mu_B$ implies $c' < c_B^*$. Also note that $\mu' < \mu$ implies $c' > (1 - \omega) [(\eta\lambda - \mu) R_A + (\eta - \mu) R_B]$. Assumption (A2) guarantees that the second term is strictly positive, and therefore, $c' > 0$ as well. Also note that, as in the main text, if all types follow the prescribed equilibrium strategies, then by construction the shareholder has incentives to fire the manager if and only if $x_1 = 1$ and $s = B$. Indeed, if $c = \hat{c}$ then the shareholder is indifferent between firing the manager after learning $s = B$ and retaining him. Therefore, the shareholder has strict incentives not to fire the manager after learning $s = A$. The arguments in the proof of part (ii) can be repeated to show that if $v \leq v^*$ then the prescribed equilibrium strategies of types $\theta \in \{(h, h), (l, l), (h, l)\}$ are incentive compatible. It is left to show that the strategy of type (l, h) is also incentive compatible. For this, it is sufficient to note that type (l, h) prefers project A over project B if

and only if

$$\begin{aligned} \omega(v + R_A) + \tau(b + \omega(v - R_B)) &\geq b + \omega(v - R_B) + (1 - \tau)(b + \omega(v - R_B)) \Leftrightarrow \\ v &\geq \frac{2(1 - \tau)\left(\frac{b}{\omega} - R_B\right) - R_A}{2\tau - 1}, \end{aligned}$$

as required by v^* . This completes part (iii). ■

A.3 Supplemental results

Proposition 2 (Irrelevance with a small conflict) *Suppose all managers are competent ($\lambda = 1$) and $\omega \geq \frac{b}{R_B + R_A}$. Then, an equilibrium exists and is unique. Moreover, the expected total welfare in equilibrium is invariant to c , that is, corporate governance structure is irrelevant. In equilibrium, the manager changes the status quo and chooses project A irrespective of his type and the level of c , and shareholders never fire the manager.*

Proof. Note that $\omega \geq \frac{b}{R_B + R_A} \Leftrightarrow R_A \geq \frac{b}{\omega} - R_B$. Under this condition, both the incumbent manager and the replacement prefer project A over project B and the status quo at the terminal period, irrespective of their type. Therefore, the manager in office always chooses project A at the terminal period. Since replacing the incumbent is costly, the shareholder never exercises the right to fire the manager. Without the threat of being fired, the manager always chooses $x = 1$ and project A at the initial period. Since the choice of the manager is not correlated with his type, the signal s is not informative about θ . Without additional information, the shareholder has no incentives to fire the manager even if the cost of doing so is very small. Corporate governance structure is irrelevant as these choices are unaffected by c , as required. ■