

*Online Supplement for*  
**Does Pay Activism Pay Off for Shareholders?**  
**Shareholder Democracy and its Discontents**

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**A Board and shareholder information**

In our model, we assume that the board knows whether the manager has conflicted incentives regarding investment policy. This specification is a good approximation of reality under two assumptions. The first is that boards and senior managers interact on a regular basis and thus have a high degree of familiarity. The second is that the manager is not able to disguise his personal preferences for project selection from the board. The first assumption does not seem to be problematic and the second is consistent with the social psychology literature on familiarity if we view personal preferences for project selection as being rooted in personality traits of the CEO. Moreover, the assumption that the board is endowed with information regarding manager preferences is not required to obtain our basic result—that ex post democratic oversight of compensation is frequently problematic. In fact, more restricted board information endowments concerning manager preferences might lead to results even more perverse. Note that even if boards are not endowed with information regarding managerial preferences, this information could still be communicated by managers to boards. As Adams and Ferreira (2007) show, the willingness of managers to reveal information to boards depends on the degree to which boards are friendly to management. Thus managers could credibly reveal preference information to a management-oriented board but not a shareholder-oriented board. Hence, restricting the information endowments of boards would lead to shareholder-oriented boards being uninformed regarding manager preferences and management-oriented board being informed. In this setting, a shareholder-oriented board would not be able to target discretionary compensation to conflicted managers. This effect would make discretionary compensation more costly to shareholders. If this change leads a shareholder-oriented board to eschew discretionary compensation, management-oriented boards would also have to eschew such compensation. This

situation is similar to that of outrage blocking discretionary pay in the model considered in the paper and would lead to similar democratic distortions. In cases where, even given the increased costs, a shareholder-oriented board still preferred to offer discretionary compensation, there would be even more room for democratic distortion than in our model. This follows because, in this case, a shareholder-oriented board's probability of offering discretionary compensation would be higher. Hence, by Bayes rule, such compensation might be outrage feasible under the restricted information scenario but not in the model developed in the paper, leading to the manager-oriented board using it and distorting investment when the manager is not conflicted. Thus, the problems of democratic distortion would remain.

If, in addition to removing the boards' information advantage with respect to managerial preferences, we also removed the boards' information advantage with respect to firm prospects, then the board would be a redundant institution. Shareholders who always act in their own interests would have the same information as boards, which with some probability do not act in shareholder interest. In this case, delegating decision rights to boards would itself be sub-optimal. Thus, eliminating the board's information advantage regarding project value would indeed radically change the implications of our model but for rather trivial and understandable reasons.

In addition to restricting the information of boards, it is also worthwhile to consider how reducing shareholder information might affect our results. In our model, all compensation payments are observed by shareholders. This rules out hidden or stealth compensation packages or compensation through perks. If some compensation is masked, such compensation would be used by management-oriented boards even when the manager is not conflicted. But, because payments would not be observed, management-oriented boards would not have an incentive to distort discretionary compensation policy when the manager was conflicted. Of course, the extent of such hidden compensation would have to be limited to prevent a management-oriented board from transferring everything to the manager. In short, if a mechanism could be found that would permit stealth compensation but also limit such compensation to the extent of manager's private benefits from corporate policy choices, such stealth mechanism would be welfare-improving and would eliminate democratic distortion, leaving only the distortion resulting from board capture. Thus, the case for full transparency of executive pay packages, vigorously advocated by Bebchuk and Fried (2003, 2004, 2005), among others, does not appear to be so clear-cut.

## **B Outrage costs and board loyalty**

Our model assumes that boards are constrained by shareholder outrage and that, when they are indifferent over outrage feasible policies, they choose policies that minimize suspicion. We

do not explicitly derive the constraining effect of outrage or the board suspicion minimization from a model of the costs of outrage to board members. In this section, we show that it is fairly easy to impose a structure of outrage cost which will endogenously generate the restrictions on board behavior imposed by our model. Recall that  $\hat{\delta}$  represents the realized level of shareholder suspicion.  $\hat{\delta}$  is the realization of a random variable because suspicion depends on which shareholder information set is reached, which in turn depends on board and manager decisions and the state of the firm. Let  $X$  represent a non-pecuniary penalty borne by the board if shareholder outrage occurs. Suppose that the probability of the board incurring the outrage penalty,  $X$ , when realized suspicion is  $\hat{\delta}$ , is given by

$$\text{OutrageProb}(\hat{\delta}) = \rho \max \left[ \frac{\hat{\delta}}{\bar{\delta}}, 1 \right] + (1 - \rho) I_{(\bar{\delta}, 1]}(\hat{\delta}). \quad (\text{B-1})$$

This specification implies that the board is sure to be sanctioned if  $\hat{\delta} > \bar{\delta}$  and that the board faces some probability of sanction for levels of suspicion less than  $\bar{\delta}$ . For suspicion levels less than  $\bar{\delta}$ , the probability of sanction is strictly increasing in  $\hat{\delta}$  and reaches a maximum value for  $\hat{\delta} \leq \bar{\delta}$  of  $\rho$ . In equation (B-1), we assume that the probability of outrage is linearly increasing in  $\hat{\delta}$  but this assumption is made simply for convenience and specificity.

Because the board is not sure of the manager's response to an offer of discretionary compensation, the board is not always certain of the suspicion resulting from its policies. However, the board knows that managers will either reject the project with probability 1 or will accept the project only when it has positive NPV based on the manager's information. Thus, if a policy has a positive probability leading to a shareholder history producing suspicion in excess of  $\bar{\delta}$ , it must have a probability of at least  $\min[\theta, 1 - \theta] = 1 - \theta$  of producing suspicion in excess of  $\bar{\delta}$ . Next, note that, because there are only a finite number of possible payoffs for the shareholders and the manager, we can find the greatest and smallest non-zero absolute differences between such payoffs over all payoff differences. Let  $\underline{\Delta u}$  represent the minimal difference and let  $\bar{\Delta u}$  represent the maximal difference.

We will say that a board action "breaches the threshold" if conditioned on the action, there is a positive probability that  $\hat{\delta} > \bar{\delta}$ . If a board action breaches the threshold, the outrage penalty is greater than or equal to  $(1 - \theta)(1 - \rho)X$ . If a decision does not breach the threshold, then the outrage penalty is less than or equal to  $\rho X$ . Thus, the increase in the outrage penalty associated with choosing a action which breaches the threshold over a action that does not it is at least

$$(1 - \theta)(1 - \rho)X - \rho X = X((1 - \rho)(1 - \theta) - \rho). \quad (\text{B-2})$$

Now consider two actions that do not breach the outrage threshold. In this case, the maximal change in the outrage penalty from switching from one of these action to the other is  $\rho X$ .

When choosing between two actions, the board will compare the change in utility,  $\Delta u$  (which, depending on its type, equals either the shareholders' or manager's payoff) and the change in the outrage penalty. Thus, if

$$\bar{\Delta}u < X((1 - \rho)(1 - \theta) - \rho) \text{ and } \underline{\Delta}u > \rho X, \quad (\text{B-3})$$

the board will never choose an action that breaches the threshold, and, when choosing between actions that to not breach the threshold, will make the same choice as it would if there were no outrage penalty. Now define the sequence  $(\rho_n, X_n)$  by

$$\rho_n = \frac{1}{n}, \quad X_n = \sqrt{n}.$$

Note that as  $n \rightarrow \infty$ ,

$$\rho_n X_n \rightarrow 0 \quad \text{and} \quad X((1 - \rho)(1 - \theta) - \rho) \rightarrow \infty.$$

Thus for  $n$  sufficiently large, the inequalities in expression B-3 will be satisfied. This implies that the board will always play minimum suspicion best replies, i.e., it will (i) never choose policies that lead to a shareholder history in which  $\hat{\delta} > \bar{\Delta}$ , (ii) always choose, among policies that do not breach the threshold but affect manager (management-oriented board) or shareholder (shareholder-oriented board) payoffs, the policy which maximizes manager (shareholder) payoffs. Between two policies which produce the same utility (manager or shareholder payoff), i.e. when  $\Delta u = 0$ , and do not breach the outrage threshold, the board will choose the one that (iii) minimizes the expected outrage penalty. Thus, when the expected outrage penalty from actions that produce suspicion less than the outrage threshold is sufficiently small, and the expected penalty for actions which exceed the threshold is sufficiently large, boards will play the minimum suspicion best replies as specified in the paper's baseline model.

Similarly, in the model we assumed that a management-oriented board maximizes manager welfare and a shareholder-oriented board maximizes shareholder welfare. Consider assuming instead that boards maximize a weighted average of manager and shareholder payoffs, a shareholder-oriented board maximizing, say,  $\varepsilon u_{\text{Mgr.}} + (1 - \varepsilon)u_{\text{Sh.}}$  and a management-oriented board maximizing  $\varepsilon u_{\text{Sh.}} + (1 - \varepsilon)u_{\text{Mgr.}}$ , with  $0 < \varepsilon \approx 0$ . Using similar arguments to those used with regard to the outrage constraint, it is easy to show all of the results of the paper would remain essentially unchanged. Under these assumptions, the board would be biased towards either managers or shareholders but would consider the welfare of both.

Thus, extending the analysis to allow for explicit sanctions and partial weightings would simply complicate it without adding any new insights. As long as sanctions are large, board certainty concerning the level of outrage that triggers sanctions is high but not complete, and

different board types have highly asymmetric biases, the basic results in this paper stand.

