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# Board's Monitoring and Retention of Sub-standard and Powerless CEOs

Meg Sato
The Australian National University

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**Abstract**

Do corporate boards look after shareholder interests? This paper shows that CEO replacement may exhibit excessive inertia, in favor of the incumbent board of directors. I show that even when there is no relationship between the board of directors and CEO, or no threat of the CEO's power over the board of directors, there is a case in which the board wants to keep sub-standard CEOs.

**Keywords: Corporate Governance; Board's Monitoring; Take-it-or-leave-it Offer.**

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# 1 Introduction

Pervasive understanding about the board's retaining sub-standard CEOs is that CEOs have the power to fire and hire the board members. (Hermalin and Weisbach 1998, Warther 1998). In order to reduce such power of CEOs, the Sarbanes-Oxley Act of 2002 and subsequent rules by the NYSE and NASDAQ have mandated the presence of independent directors on corporate boards. However, this paper shows that even if the board had almighty power and there exists no information asymmetry between the board and CEO, the board does not necessarily replace sub-standard CEOs. In other words, I show that the board sometimes retains sub-standard CEOs because by doing so benefits the board (alone).[1]

This is analyzed in the framework using take-it-or-leave-it offer model between the board of directors and the incumbent CEO: the board posts an offer which the CEO must either accept or reject. The offer is about the wage of the CEO and hiring of a specialist who reviews the CEO's conduct. The distribution of the ability of the incumbent CEO and any potential CEOs is assumed to be the same until the incumbent CEO is monitored by the specialist. The profit of the firm is dependent on CEO's ability. Then the conventional understanding would be that the board posts an offer of hiring the specialist by comparing a trade-off between the positive effect of increase in the expected profit and the negative effect of hiring specialist (or the cost of monitoring). However, I show that there is another cost that the board incurs: I refer to such cost as a 'leakage' from the incumbent players joint utility. That is, the incumbent CEO can obtain private benefit or the discounted sum of his/her future wage if s/he is retained to the end of the game. If the board considers such benefit is large, it can offer the CEO a lower wage in exchange for giving him a longer tenure (no monitoring). In other words, an exogenously given benefit is transferable to the board's utility if the board retains the incumbent CEO. Therefore, if the marginal profit of monitoring does not exceed the addition of the monitoring cost and the amount of 'leakage' from the expected joint utility of the incumbents, the board has an incentive to keep the

[1] Sato (2009) shows that the board of director is slow to replace the incumbent CEO when there is a benefit which both the board and CEO can share by keeping the sub-standard CEO.

sub-standard incumbent CEO.

# 2 Model

## 2.1 Basic Environment

I identify two forms of corporate governance systems: the outside-recruiting system and the internal-promotion system. In both systems, the board consists of one incumbent CEO and $n$ incumbent directors.[2] Under the outside-recruiting system, if the incumbent CEO is fired, a new CEO is always hired from outside the incumbent board, and the board members remain unchanged. Under the internal-promotion system, if the incumbent CEO is fired, one of the incumbent directors is promoted to be the new CEO, and to maintain the board size, a new director is hired. Therefore, under an outside-recruiting system, the newcomer is the newly hired CEO. Under an internal-promotion system, it is the newly hired director.

*Players*: There are two players: the board of directors and the incumbent CEO. There are $n$ incumbent directors on the board, but they are treated as one player. The ability of the CEO is either high ($H$) or low ($L$), determined by nature, with no one knowing the CEO's true ability. The distribution of the incumbent CEO's ability is the same as any other CEO potentials, and it is 1/2 for being $H$ ($L$). Since the incumbent CEO is no different from the potential CEO, s/he does not have the bargaining power to negotiate his/her own wage with the board of directors.[3]

*Information Gathering Strategy*: When the board hires the specialist to monitor the CEO, the specialist gives the board the precise information about the CEO's true ability with probability one. Then, with probability $q$, the CEO is discovered to be of type $H$, and with probability $(1-q)$, type $L$. When the board does not hire the specialist, the board's prior belief about the incumbent CEO's true ability remains unchanged. The incumbent CEO is replaced with a new CEO when s/he is discovered to be of type $L$, but otherwise s/he is retained. The payment to the specialist (monitoring cost) is a constant $c$.

[2] The firm has $n$ directors and one CEO in all stages.

[3] It can be considered that the incumbent CEO is new to the company and hence s/he does not have firm-specific knowledge yet.

*Payoffs*: The board objective is to maximize its utility: the profit of the firm, less the monitoring cost and the wage of the CEO, where the profit of the firm is dependent on the ability of the CEO.[4] The profit of the firm is denoted as $\pi_{_N}$ when the incumbent CEO is retained without monitoring. This prior, and thus also the expected corporate profit, is also the same when the incumbent CEO is fired and a new CEO is hired. The expected corporate profit when the incumbent CEO is of type $H$ is denoted $\pi_{_H}$, and it is denoted $\pi_{_L}$ when s/he is of type $L$. In short, $\pi_{_H} > \pi_{_N} > \pi_{_L}$ is assumed.[5] The CEO's objective is to receive both the wage and the non-contractable private benefit, such as reputation or status. The CEO will receive the wage regardless of his/her situation, but the non-contractable private benefit is only given to the CEO who is serving at the last stage of the game. The reservation utility of the CEO is assumed to be $r$.

*Timing*: In the first stage, the board posts an offer that the incumbent CEO must either accept or reject. The board offers $(p, w)$, where $p \in \{0, 1\} : 0$ meaning no monitoring by the specialist and 1 meaning the existence of monitoring by the specialist. The specialist is hired by the board of directors with the fixed cost of $c$. $w$ is the wage offered to the CEO. To be more precise, the board offers the incumbent CEO $(p, w) = (1, w_1)$ or $(p, w) = (0, w_0)$. In the case of $p = 1$, with probability $q$, the specialist gives the board a precise information that the CEO is of type $H$. With probability $(1 - q)$, the board receives a precise information about the CEO's ability to be of type $L$. In the second stage, the CEO accepts or rejects the offer. If the board had posted $(1, w_1)$, then the CEO is monitored and either retained or fired in the second stage. The profit of the firm is realized, and players receive their profits.

## 2.2 Game

**The players' expected utilities when the board offers** $(p, w) = (0, w_0)$ In this case, there is no monitoring, and hence, the incumbent CEO serves to the end of the game without his/her ability being updated in either the outside-recruiting system or the internal-

[4] For the sake of simplicity, the board profit equals the corporate profit.

[5] The board fires the incumbent CEO who is believed to have the ability of $L$, and it replaces him/her with a new CEO. Hence, $\pi_L$ is not realized.

promotion system. In other words, all the incumbent players stays till the end of the second stage, implying that there is no newcomer to the initial members. Thus, the expected utilities of the players are the same in both systems; the board's expected utility is expressed as

$$\pi_{_N} - w_0, \tag{1}$$

and the incumbent CEO's expected utility is expressed as

$$b + w_0. \tag{2}$$

**The players' expected utilities for the case in which the board offers** $(p, w) = (1, w_1)$ In this case, utilities differ between the two systems. This is because under an outside-recruiting system, discovering that the incumbent CEO is of type $L$ is synonymous to saying that the incumbent CEO is fired and a new CEO is externally hired, whereas under an internal-promotion system, it is synonymous to saying that the incumbent CEO is fired and a new CEO is internally promoted. Therefore, the board's expected utility in outside-recruiting system is expressed as

$$q\pi_{_H} + (1-q)\pi_{_N} - w_1^O - c, \tag{3}$$

and the incumbent CEO's expected utility is expressed as

$$qb + w_1^O. \tag{4}$$

The first and the second terms of (3) represent the expected profit to the board. (The board finds the CEO to be of type $H$ with probability $q$, and with probability $(1-q)$, it finds him/her to be of type $L$ and fires the incumbent CEO and hires a new CEO.) The third term is the wage the board pays to the incumbent CEO, which is offered to him/her during the first stage. The last term is the cost of monitoring.[6] As for (4), the CEO receives $w_1^O$

[6] If $b > \frac{\pi_N}{n}$ holds, the directors under both systems may conduct monitoring when the cost of monitoring is small enough to satisfy $q(\pi_H - \pi_N) - (1-q)b > c$. However, if the cost is $q(\pi_H - \pi_N) - (1-q)\frac{\pi_N}{n} > c > q(\pi_H - \pi_N) - (1-q)b$, then only the directors under the internal promotion system monitor. If $c > q(\pi_H - \pi_N) - (1-q)\frac{\pi_N}{n}$, then the cost of monitoring is too large, meaning that the directors do not

whether or not s/he serves to the last stage of the game. However, s/he receives the non-contractable private benefit $b$ only when s/he is retained with probability $q$, and thus it is expressed as such.

The board's expected utility under an internal-promotion system is expressed as

$$q\pi_{H} + (1-q)\left[b + (n-1)\frac{\pi_{N}}{n}\right] - w_1^I - c, \tag{5}$$

and the incumbent CEO's expected utility is expressed as

$$qb + w_1^I. \tag{6}$$

The CEO's expected utility (6), is as (4). The difference between an outside-recruiting system and an internal promotion system appears in the second term of the board's utilities. With probability $(1-q)$, the board finds the incumbent CEO to be of type $L$, and hence, replaces the incumbent CEO with a new CEO, who was originally one of the board members. Recall that a new director is hired in this case to keep the board size at $n$. Thus, with probability $(1-q)$, one of the original board members obtains $b$, and each of the remaining $(n-1)$ directors receive $\frac{\pi_N}{n}$.

**The board's optimal choice** Given these expected utilities, the board makes the optimal choice in the first stage in offering $(0, w_0)$ or $(1, w_1)$, provided that the CEO will accept the offer in the second stage.

Under an outside-recruiting system, if the board posts $(0, w_0)$, the wage is determined as to satisfy $b + w_0 = r$, but if it posts $(1, w_1^O)$, the wage is determined to satisfy $qb + w_1^O = r$.[7] Thus, the board's optimal choice is made between $(0, w_0) = (0, r-b)$ and $(1, w_1^O) = (1, r-qb)$. Plugging $w_0 = r - b$ into (1) yields

$$\pi_{N} + b - r. \tag{7}$$

monitor in either system. The similar argument holds for the case in which $\frac{\pi_N}{n} > b$ holds.

[7] It is assumed that $b > r$. When the board offers $(0, w_0)$, the wage $w_0$ is determined as to satisfy $w_0 + b = r$. Since the CEO is sure to serve to the end of the game in case $(0, w_0)$ is offered, the CEO knows he will eventually receive $r > 0$ . This is the same for an internal promotion system.

Plugging $w_1^O = r - qb$ into (3) yields

$$q\pi_{_H} + (1-q)\pi_{_N} + qb - r - c. \tag{8}$$

Therefore, the board decides whether to hire the specialist or not by comparing (7) and (8). When $b$ is sufficiently small, (8) $>$ (7) holds, and as a result, the board posts $(1, w_1^O)$. When $b$ is large, (8) $<$ (7) holds, and as a result, the board posts $(0, w_0)$. Recall that $b$ is the non-contractable private benefit which is given only to the CEO serving at the last stage and will be regarded as 'leakage' by the incumbent board if the incumbent CEO does not receive this. Thus, if the leakage of $b$ is large, the board posts $(0, w_0)$ so as not to replace the incumbent CEO.

Under an internal-promotion system, the wage level is determined to satisfy $b + w_0 = r$ when the board posts $(0, w_0)$, while it is determined to satisfy $qb + w_1^I = r$ when it posts $(1, w_1^I)$. Thus, the board makes the optimal choice between $(0, w_0) = (0, r-b)$ and $(1, w_1^I) = (1, r - qb)$. Plugging $w_0 = r - b$ into (1) yields

$$\pi_{_N} + b - r. \tag{9}$$

Plugging $w_1^I = r - qb$ into (5) yields

$$q\pi_{_H} + (1-q)\left[b + (n-1)\frac{\pi_{_N}}{n}\right] + qb - c - r. \tag{10}$$

The board's decision to post an offer to monitor or to not is determined by comparing (9) and (10). When $\frac{\pi_N}{n}$ is sufficiently small, (10) $>$ (9) holds, and as a result, the board posts $(1, w_1^I)$. When $\frac{\pi_N}{n}$ is sufficiently large, (10) $<$ (9) holds, and as a result, the board posts $(0, w_0)$. In this system, a pay to the new director $\frac{\pi_N}{n}$, is the "leakage," and again, if the amount of 'leakage' is large, the board chooses not to monitor in order to avoid the leakage.

*Definition: 'leakage' is defined as an expected profit that is lost from the incumbents' joint expected utility. This leakage occurs to the incumbents' profits when the incumbent CEO is replaced, the replacement of which leads to a member-change within the incumbent members.*

*Proposition 1*:

(1) *If* $b > \frac{\pi_N}{n}$, *the board under the internal-promotion system is more likely to replace the substandard CEO.*

(2) *If* $b < \frac{\pi_N}{n}$, *the board under the outside-recruiting system is more likely to replace the substandard CEO.*

*Proof*: Comparing (8) and (10), it is straightforward to show that when $b > \frac{\pi_N}{n}$, the board under the internal-promotion system is more likely to post $(1, w_1)$, but when $b < \frac{\pi_N}{n}$, the board under the outside-recruiting system is more likely to post $(1, w_1)$.

Above proposition implies that the monitoring that is intended to fire the incumbent CEO induces a 'leakage' to the incumbent members' joint expected utility, and because of this, whether to hire the specialist to monitor the CEO is not solely determined by a trade-off between the positive effect of increase in the expected profit (which is shown by $\pi_H - \pi_N$) and the negative effect of monitoring cost $c$. That is, if the marginal profit of monitoring exceeds the addition of the monitoring cost and the amount of 'leakage' from the expected joint utility of the incumbents, the board has a stronger incentive to hire the new CEO, and thus, posts an offer of 'monitor.' In other words, if the amount of 'leakage' is large, the board does not monitor for the sake of reducing the risk of having 'leakage'. Notice that the board has to consider which type of 'leakage' ($b$ or $\frac{\pi_N}{n}$) it will incur if it is given the option of choosing where to bring the next CEO from.

# 3 Conclusion

This paper concerns one of the reasons that causes inefficient monitoring of the CEOs by the board of directors. I use take-it-or-leave-it offer game to analyze the process of how a board of directors benefits from retaining a CEO who maybe sub-standard compared to the potential CEOs. In other words, the incumbent board members incur a 'leakage' if there is a member change, resulting in a pay the incumbent board thus cannot receive. Under an outside-recruiting system, if the initial CEO does not receive the non-contractible private

benefit $b$, it is considered as a 'leakage', whereas under an internal-promotion system, if the board has to promote one of the inside directors to the CEO and thus has to refill the board, the new director's pay of $\frac{\pi_N}{n}$ is a 'leakage'. Thus, the board's incentive to replace the incumbent CEO is attenuated.

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