Managerial Legacies and Entrenchment*

Catherine Casamatta
University of Toulouse I

Alexander Guembel
Saïd Business School
and
Lincoln College
University of Oxford

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Correspondence address: Alexander Guembel, Lincoln College, Oxford, OX1 3DR, UK, Tel.: +44 1865 288 914, e-mail: alexander.guembel@sbs.ox.ac.uk

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ABSTRACT

Many observers are puzzled by the seemingly favorable treatment that top managers receive after performing poorly. Instead of getting fired, their stock option schemes are re-set to provide fresh incentives, and when managers do get fired they frequently receive generous golden handshakes. This paper shows that both observations are compatible with efficient corporate governance. When managers leave behind legacies in the firms they manage, replacing them becomes expensive. Entrenchment is possible, because in the presence of a legacy the firm's future performance can only partially be attributed to the new management, which makes it more difficult to incentivise a new manager effectively. The firm may therefore be better off re-setting the stock options of old managers. Moreover, golden handshakes can be optimal if the firm needs to elicit information about future firm prospects from the manager. Getting the manager to admit implicitly that prospects are poor carries a reputational cost to him. Truthtelling by the manager therefore requires compensating him for the resulting loss in reputation.

Keywords: Career conerns, executive stock options, golden handshakes, entrenchment.

JEL classification numbers: D82, G30, J33

I. Introduction

This paper investigates two features of executive compensation, which are both common and hard to reconcile with optimal contracting. While incentive theory predicts that managers of poorly performing companies should either be dismissed or at the very least receive low compensation, neither appears to occur very often in practise. Instead, executive stock options are often re-set to a lower strike price in response to poor performance (Brenner, Sundaran and Yermack (2000), Chance, Kumar and Todd (2000)). In addition when managers do get dismissed, they often receive generous severance payments in the form of golden handshakes or parachutes. In the face of this evidence, some researchers have concluded that compensation contracts deviate substantially from optimal incentive schemes due to the power that top executives wield in setting their own wage (Bebchuk and Fried (2003)).

In this paper we show that stock option re-pricing and golden handshakes are compatible with efficient corporate governance. We thus provide an alternative hypothesis, based on optimal contracting, regarding the seemingly sub-optimal compensation packages frequently observed in practise. We consider a set-up in which a firm manager can be incentivized both explicitly and implicitly through reputational concerns. The manager needs to take a long-term strategic decision the quality of which depends on his intrinsic and unknown ability. After a strategy has been chosen it needs to be implemented, which requires managerial effort over two periods. Cash flows are also generated over two periods and depend both on the initial choice of strategy and on the implementation effort. The firm can dismiss the incumbent manager after poor performance and hire a new manager to continue the project's implementation. We assume that a new manager is equally well suited to implement the project.

We show that in the presence of reputational concerns by managers, the threat of firing after bad performance is time inconsistent, i.e., the incumbent manager is *entrenched*. The reason is that it is cheaper to employ an incumbent manager after he performed badly than to hire a new manager, because the new manager knows that his reputation is less sensitive to performance than that of the incumbent: the latter is *fully* responsible for the firm's performance, while the new manager can attribute part of its performance to the nature of the *legacy* left behind by the old manager.[1] As a result, higher explicit incentives for the new manager have to replace the implicit incentives of the incumbent, which is costly to the firm. The firm may therefore prefer to retain the incumbent manager after poor performance and re-set his stock options to provide fresh incentives in the subsequent period. We also show that even when the firm can commit to a long-term contract, it may wish to retain a poorly performing incumbent, when the incentives provided through reputational concerns are sufficiently strong.

We further investigate optimal wage contracts when the incumbent manager may sometimes learn the true quality of the strategy at the interim date. Such information may be valuable to the firm, for example if it prefers to liquidate the project when a poor strategic choice has been made initially. We show that in this case, the firm may wish to elicit information from the manager when he knows that he made a bad initial choice of strategy. A contract that can achieve information revelation features a severance payment if the manager leaves the firm (in which case the project is liquidated) or a repriced options contract if the manager chooses to stay. The severance payment serves to compensate the manager for the loss in reputation that results from his de facto admission to have made a poor strategic decision.

[1] In practise, top managers frequently blame their predecessors for poor current performance. For example, when Mike Parton, CEO of Marconi, was asked by the *Institutional Investor* "How much blame do you accept for Marconi's [...] troubles?" he answered: "You can't be part of management and just wash your hands of it. However, I was not a board member when the key strategic decisions were made, and it's difficult to say what my view might have been had I been on the board at the time."

This finding is consistent with empirical evidence on the reduction in total assets, employment levels and capital expenditure following forced resignations by top managers (Denis and Denis (1995)). This finding is difficult to explain with traditional theories: Even if a manager is forced to resign due to poor performance, it is not clear why downsizing of the firm should ensue. On the contrary, one might imagine that a firm should downsize when it performs poorly, but once it got rid off a bad manager, the firm should start again to invest.

Few papers have investigated the determinants for option re-pricing and severance payments empirically. Those that have tend to find that more severe agency problems and weak boards help to explain some of the observed re-pricing (Chance, Kumar and Todd (2001) and Chen (2004)). However, it is hard to test the 'managerial abuse' hypothesis rigorously against an alternative, because theory so far has not provided one. We hope to contribute some potential variables of interest in this paper.

We would expect to see more outright dismissals without severance payment in firms (i) that employ managers with low reputational concerns, (ii) that do not attach a high value to the manager's private information regarding the quality of the firm's long-term strategy, and (iii) firms where asymmetric information between managers and outsiders is less severe. Firms satisfying (ii) are likely to be ones that would not wish to or be able to change asset deployment significantly upon learning the information. One empirical prediction of our model is therefore that firms which dismiss managers with generous severance payments, should subsequently display higher asset turnover or disposal than firms who dismiss managers without such payments. Conversely, we would expect entrenchment to be more prevalent at the stage of a firm's life when a long-term strategic choice continues to impact on the firm's future performance. Similarly, firms that display more asymmetric information should engage more strongly in contracting that provides a choice between re-set options contracts and high severance payments. The latter prediction is borne out by the empirical evidence in Carter and Lynch (2001) and Chidambaran and Prabhala (2003) who find that re-pricing is more prevalent in younger firms and firms that are more concentrated in the technology sector. Both attributes fit our description of firms where long-term strategic choices are still important, and where asymmetric information is likely to be more prevalent. Carter and Lynch (2001) also find that stock option re-pricing tends to occur in response to firm, not industry specific shocks. This is consistent with re-pricing in order to elicit firm specific information, which is where one would expect asymmetric information problems to be more severe.

A. Literature

Our paper relates to a number of contributions in the theory of dynamic contracts. The role of implicit incentives through reputational concerns was pioneered by Holmstrom

(1982) and extended to allow for explicit incentives by Gibbons and Murphy (1992). The literature building on this mainly focuses on incentive distortions that arise out of reputational concerns (e.g., Holmstrom and Ricart-i-Costa (1986), Jeon (1998), Milbourn, Shockley and Thakor (2001)). In contrast we are mainly interested in the relationship between career concerns, dismissal and explicit incentives. Dismissal does not typically arise as an issue in the above papers, because managers are in perfect competition at each date, driving wage down to the point where the firm is indifferent between continuation with the same or another manager. In our setting this is no longer true, because managers take an action that has long lasting impact, which allows them to become entrenched.

The role of a termination threat in managerial incentives has received a lot of attention in the literature on debt as a commitment device (e.g., Bolton and Scharfstein (1990), Aghion and Bolton (1992), Dewatripont and Tirole (1994) and others). These papers assume that a manager is perfectly entrenched and the only way to provide a termination threat is to liquidate the firm, i.e., it is impossible to fire a manager, hire a new one and continue the firm.[2] In our paper entrenchment arises endogenously without assuming an exogenous replacement cost. Moreover, we do not assume that managers develop any inherent productivity advantages for example due to specific human capital accumulation (Shleifer and Vishny (1989)). Instead, in our setting a newly appointed manager is equally well placed as the incumbent to run the firm successfully. Entrenchment arises because of the incentive implications that managerial legacies entail.

Acharya, John and Sundaram (2000) consider a dynamic moral hazard problem and show that re-setting executive options after poor interim performance may be optimal. While re-setting of stock options worsens the manager's ex ante incentives, it improves his interim incentives in the bad state of the world. Acharya et.al. show that the optimal contract never features zero incentive payments after poor interim performance. Under certain restrictions this can be interpreted as a re-setting of executive options. Acharya et.al. focus on the optimal contract when the manager cannot be fired. This leaves open the question why the firm does not retain optimal ex ante incentives by firing the manager after poor interim performance, and employs a new manager with a fresh incentive contract at that point. Our paper integrates the analysis of optimal incentive contracts and the optimal employment policy and shows when termination is preferred over re-setting of option contracts.

Lazear (1999) provides an explanation of stock option contracts in terms of their ability to screen managers' private information about underlying firm value. Stock options can be used to elicit information in this way, because their value depend on the manager's private information, which is revealed by the manager's acceptance of the contract. In Lazear (1999) it is relatively easy to induce truthtelling by managers, because non-

[2]See, however, Zwiebel (1996) and Fluck (1998) who assume that managers can be replaced at a cost and derive capital structure implications.

acceptance of the stock option does not have the negative reputational implications it does in our model. Instead, we require firms to offer a menu of contracts so that managers are also given an incentive to reveal negative information even when this carries a reputational cost. This explains jointly the golden handshakes and (repriced) stock option contracts observed in practise.

The theoretical literature on severance payments for top managers is sparse. The widespread use of payments to managers who quit their firms is puzzling, particularly when departure is the result of poor performance. In labour economics severance payments are said to provide insurance to risk averse workers in the event of layoffs. In the context of top CEOs this argument probably carries less weight, because severance payments in the event of poor performance are likely to have adverse effects on managerial incentives. This leads some to conclude that severance payments are essentially "gratuitous goodbye payments," (Bebchuk and Fried (2003)) and as such instances of an agency problem rather than its solution. Other authors have argued that severance payments and golden parachutes are a compensation to a manager that serves to contain the damage from intervention by external agents (Berkovitch, Israel and Spiegel (2000), Falaschetti (2002)).

Almazan and Suarez (2003) link severance payments to managerial entrenchment under weak boards. They show that weak boards and high severance payments can be part of an optimal arrangement, because they reduce the amount of explicit incentives necessary to pay a manager. In their paper severance payments are designed so as to provide optimal ex ante incentives for effort choice. In our paper, severance payments reduce ex ante incentives, but help to elicit useful information. Moreover, Almazan and Suarez (2003) use quite a different notion of entrenchment from ours. Entrenchment for them means the ex post inefficient retention of a manager due to a firing cost (a veto right by the manager in the extreme case), while we use entrenchment to describe the ex ante inefficient retention of a manager due to the ex post optimality of retaining him.

The organization of the paper is the following. Section II presents the basic model structure. In Section III, we solve the optimal firing policy under symmetric information, and derives the renegotiation proof optimal contract. Section IV explores the consequences of asymmetric information on the optimal wage contracts and firing policy of the firm. Section V discusses possible interpretations of the wage contracts and proposes empirical predictions. Section VI concludes. All proofs, if not straightforward, are presented in the Appendix.

II. The model

There are three dates $t = 0, 1, 2$. A firm can undertake a project at the initial date $t = 0$, which yields an uncertain payoff at the two subsequent dates. The project choice can be

thought of as a long-term strategic decision by the firm, which will affect the firm's cash flows two periods into the future. The firm hires a manager whose task it is to make this strategic choice and to implement it subsequently. Assume that the manager's choice of strategy S can be either good (S_G) or bad (S_B).

There are two types of managers, $m \in \{L, H\}$. High type managers ($m = H$) always pick the good strategy, whereas low types always pick the bad strategy. This corresponds to a situation where the number of potential strategies is very large compared to the number of good strategies. A bad manager then picks a strategy at random, which yields a bad strategy with probability close to one.[3] The *ex ante* probability of a manager being a high type is q_0. The manager's type is not known to either the manager or the firm, and both have the same beliefs about the manager's type. Moreover, in this Section, we assume that neither can observe directly the quality of the chosen strategy. We will relax this assumption in Section IV to explore the impact of asymmetric information on managerial compensation and replacement policy.

Once the manager has chosen a strategy, he needs to exert effort in each of the two subsequent periods in order to implement it successfully. The firm then generates payoffs at $t = 1, 2$ that depend on choice of effort in that period and on whether the good or bad strategy was chosen initially. Denote by $a_1 \in \{\underline{a}_1, \overline{a}_1\}$ the effort choice in the first period, that is the effort chosen at $t = 0$ and affecting payoffs at $t = 1$. Similarly, $a_2 \in \{\underline{a}_2, \overline{a}_2\}$ is the effort chosen at $t = 1$, affecting payoffs at the final payout date $t = 2$. Exerting the high effort level $\overline{a}_t > \underline{a}_t$ accrues a cost c to the manager. Define the improvement in the success probability from exerting effort by $\Delta a_t \equiv \overline{a}_t - \underline{a}_t$. The choice of effort affects payoffs in the following way. The payoff is always low (R_l) when the manager has chosen the bad strategy S_B, i.e., any effort by the manager in either period is wasted in that state. When he has chosen the good strategy S_G the firm generates a high payoff R_h at $t = 1$ with probability a_1 and the low payoff R_l with probability $1 - a_1$. Date $t = 2$ payoffs are affected by effort a_2 in the same way. Figure 1 summarizes the structure of the model.

Last, to make things interesting, we assume that without moral hazard, the firm maximizes its profit by inducing effort at any stage of the game. This implies the following conditions. First, the firm wants to hire a manager and to induce effort at t=1, whatever the level of profit realized at the end of the first period. This is ensured by the condition:

$$prob(S_G|R_1)(\overline{a}_2 R_h + (1 - \overline{a}_2)R_l) + prob(S_B|R_1)R_l - c \geq$$
$$prob(S_G|R_1)(\underline{a}_2 R_h + (1 - \underline{a}_2)R_l) + prob(S_B|R_1)R_l.$$

[3]Note that our results go through if we assume that a bad manager can sometimes choose a good strategy. What matters for our results is that the project's choice cannot be perfectly inferred from the realization of the profits at each period.

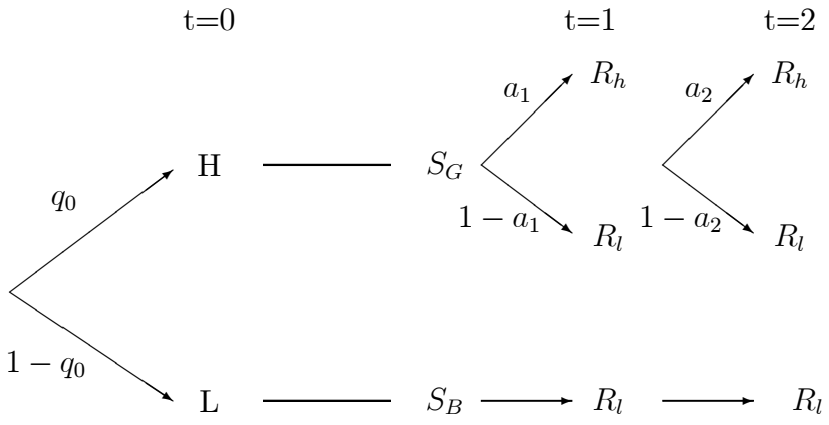

Figure 1: Timing and payoffs under symmetric information.

After manipulations, the above equation boils down to:

$$\Delta a_2(R_h - R_l) \geq \frac{c}{prob(S_G|R_1)}. \tag{1}$$

Second, the firm wants to hire a manager and induce him to exert effort at $t = 0$, given that effort will be induced at $t = 1$. This is ensured by the condition:

$$q_0 \left[\overline{a}_1 R_h + \overline{a}_2 R_h + (1 - \overline{a}_2)R_l) - c + (1 - \overline{a}_1)R_l\right] + (1 - q_0)\left[R_l + R_l - c\right] - c \geq$$
$$q_0 \left[\underline{a}_1 R_h + \overline{a}_2 R_h + (1 - \overline{a}_2)R_l) - c + (1 - \underline{a}_1)R_l\right] + (1 - q_0)\left[R_l + R_l - c\right],$$

which can be simplified to

$$\Delta a_1(R_h - R_l) \geq c. \tag{2}$$

III. Optimal firing policy under symmetric information

The firm hires a manager at $t = 0$ with reputation q_0 and offers a wage contract that specifies compensation payments contingent on the date 1 and 2 payoffs. Moreover, the firm can choose to fire the manager at $t = 1$ and hire a new manager from a pool of indistinguishable managers of reputation q_0. The effort level a_t, $t = 1, 2$ is chosen by the manager who is employed by the firm at date $t - 1$. In particular, a firm can observe its date 1 payoff and hire a new manager if it wishes to do so, who will then choose the subsequent effort level a_2. Managers are risk neutral and have limited liability. We also assume that they care about their reputation when they stop working for the firm (or when the project stops). This assumption is natural for top managers given that the performance of the firm will provide information on their own ability. In line with the findings of much of the literature on career concerns we thus assume that the higher the manager's reputation, the higher the future expected wage.[4] Intuitively, when the

[4]See Dewatripont, Jewitt and Tirole (1999) for a comprehensive analysis of career concerns models.

firm performs well, outside firms will be more eager to hire well-performing managers, and be willing to pay them higher wages. This assumption is also consistent with recent empirical evidence by Fee and Hadlock (2003) who show that managers who are promoted to CEO positions at new firms come from firms with better than average past stock price performance.

Managers are thus incentivized through direct performance contingent compensation and through career concerns, i.e. future expected wages. Denote by $f_t(q)$ the expected present value that a manager derives from having reputation q at date t. We assume that $f_t(q)$ is increasing in q. Denote by $q^{i,j}$ the date 2 posterior probability of the manager being a high type conditional on the performance observations R_i, R_j at date 1 and 2 respectively, where $i, j \in \{l, h\}$. We can similarly define the date 1 posterior by q^i.

Given the structure of the model reputation evolves in a very simple way: if the firm generates high cash flows R_h at either date, it becomes clear that the manager must have picked the correct strategy S_G. His reputation then jumps to $q^G \equiv 1$, because only high type managers are capable of choosing a good strategy. This yields the following reputation updates: $q^h = q^{h,l} = q^{h,h} = q^{l,h} = 1$.

We need to distinguish two contracting regimes; one in which long-term contracts are possible, and one where they are not possible. In the second case, the firm cannot commit to an employment policy, and chooses at each date whether to keep or to fire a manager to maximize its expected profit.

A. Optimal long-term contracts with full commitment

Let us first consider the case where the firm can write a long-term contract. We compare two contracts: One in which the manager is always retained at date 1 (i.e. even after bad performance), and one in which he is replaced after bad performance at t=1.[5] This illustrates how second period incentives differ when the incumbent manager continues after poor performance, compared to when he is fired and replaced by a new manager. The analysis will also show how the difference in second period wages impacts on first period wages, and as a result which contract is optimal. The wage contract and the decision to retain or fire the manager at the interim date 1 are determined at date 0 so as to maximize shareholder wealth, subject to the manager's incentive compatibility constraints. Denote by $w_t^{i,j}$ the wage payment at date t contingent on the performance observations R_i, R_j at date 1 and 2 respectively, where $i, j \in \{l, h\}$. Moreover, denote by $p^{i,j} \equiv prob(S_G|R_i, R_j)$. The characteristics of the contracts are given in the following Proposition.

PROPOSITION 1 *Suppose the manager is always retained at date 1. The optimal wage*

[5]It is easy to see that it is optimal to retain the manager after good performance: this is formally stated in the appendix.

contract is then given by:

$$\begin{aligned} w_2^{h,h} &= \frac{c}{\Delta a_2}, \\ w_2^{l,h} &= \max[0; \frac{c}{p^l \Delta a_2} - \left(f_2\left(q^G\right) - f_2\left(q^{l,l}\right)\right)], \qquad (3) \\ w_1^h &= \max[0, \frac{c}{q_0 \Delta a_1} - (f_2(q^G) - f_2(q^{l,l})) + \frac{\overline{a}_2 c}{\Delta a_2}(\frac{1-p^l}{p^l})], \qquad (4) \\ w_1^l &= w_2^{l,l} = 0. \end{aligned}$$

Suppose at date 1 the manager is fired after R_l and retained after R_h. The optimal wage contract is then given by:

$$\begin{aligned} \widehat{w}_2^{h,h} &= \frac{c}{\Delta a_2}, \\ \widehat{w}_2^{l,h} &= \frac{c}{p^l \Delta a_2}, \qquad (5) \\ \widehat{w}_1^h &= \max[0, \frac{c}{q_0 \Delta a_1} - (1-\overline{a}_2)(f_2(q^G) - f_2(q^{l,l})) - \frac{\underline{a}_2 c}{\Delta a_2}], \qquad (6) \\ \widehat{w}_1^l &= \widehat{w}_2^{l,l} = 0. \end{aligned}$$

Proof see Appendix.

The wage payment $w_2^{h,h}$ from performing well in the second period, after having performed well in the first period is independent of reputational concerns. The reason is straightforward: when the manager has performed well once, it is known that he chose the good strategy initially and therefore he cannot improve his reputation further by performing well again.[6] After poor interim performance, the manager's second period incentives, if he is retained, are provided both explicitly and implicitly. The firm can therefore reduce the manager's explicit wage payment $w_2^{l,h}$ by the amount of his implicit incentives given by $f_2\left(q^G\right) - f_2\left(q^{l,l}\right)$ (see equation (3)). As a consequence, the optimal first period wage w_1^h can also be reduced by an amount corresponding to the implicit incentives the manager derives from being retained (see equation (4)).

When the manager is fired after poor interim performance the second period incentive payment $\widehat{w}_2^{l,h}$ to the new manager has to be higher than if the old manager had been retained (see equations (3) and (5)). This is because the new manager is not driven by reputational concerns: he cannot be held responsible for the initial strategic choice and therefore a failure to implement the strategy successfully, does not allow the market to update its belief over this manager's ability to take good strategic decisions. This is different when the old manager is retained: even though his second period choice of effort

[6] Under more general information structures the manager may well continue to have reputational concerns after good performance. However, for our analysis this is not important, because the relative desirability of contracts depends purely on differences in incentives after bad interim performance.

can no longer affect his initial choice of strategy, he is eager to prove that he chose the correct strategy. He can only do that if he also succeeds in implementing that strategy. Therefore reputational concerns provide incentives to the incumbent manager, but not the new manager.

In a more general set-up one may wish to model reputational effects for strategic choice *and* subsequent implementation.[7] However, whenever a strategic choice has a long lasting impact on the firm's performance, it leaves a legacy behind for a new manager. Even if that manager's ability affects the final outcome, the effect that we wish to emphasize here would still be present: the new manager can only be held *partially* responsible for the final payoff distribution. This reduces his reputational concerns when he works in a firm that is affected by a previous manager's decision.

A policy of firing the manager after poor interim performance has an ambiguous impact on the date 1 wage payments to that manager: $\widehat{w}_1^h$ can be smaller or larger than w_1^h. Two opposite effects arise. On the one hand, the threat of dismissal provides an incentive to the manager. This incentive works here, because in each period in which the manager is employed, he earns an agency rent. When the manager is fired after poor performance he is deprived of that agency rent, which in turn provides an additional monetary incentive to the manager. On the other hand, when the manager is fired, the firm cannot fully make use of his reputation concern to give him additional implicit incentives to work at date 1. Whether or not the firm wishes to fire or retain the manager after poor interim performance therefore depends on the trade-off between reducing first period wages from using the threat of dismissal and the increased cost of incentivizing a new manager taking over from the fired manager.

PROPOSITION 2 *The firm prefers to fire the manager after poor interim performance when*

$$\overline{a}_1 c \left(\frac{\overline{a}_2}{p^l \Delta a_2} - 1 \right) > \overline{a}_2 \left(f_2(q^G) - f_2(q^{l,l}) \right). \tag{7}$$

Condition (7) shows that the firm prefers to fire the manager when his reputational concerns are limited. In the special case where he has no reputational concerns, the firm would always prefer to commit to fire the manager after poor interim performance. This corresponds to the familiar case that has usually been dealt with in the literature in which a termination threat can mitigate the agency problem (e.g., Dewatripont and Tirole (1994), Fluck (1998) and others).

[7] If this was the case we would have an additional reason for a firm to fire a manager: it may want to do so in order to improve the average quality of managers employed. This does not happen in our model, because the second period payoffs are independent of the type employed at date 1.

B. Interpretation of wage contracts and empirical implications

The wage contracts offered to the manager for each firing policy share some common features. In both contracts, the manager is only rewarded in the first period, if the firm's performance is above a certain threshold (i.e. strictly above R_l). In that sense, both contracts involve some form of short term stock-options that have value in case of high short term performance. Similarly, one could think of these options as vested, i.e., the manager can exercise them immediately.

The second period wage is less easy to interpret since it depends also on the first period performance. In the regime where the manager is fired after poor interim performance, the manager is only rewarded if the firm's performance is high in both the first *and* the second period. If the interim performance is low, the manager is denied any future compensation, and is fired. This second period wage contract can thus be interpreted as a long term stock option that is worthless if the manager performs badly and leaves the firm, i.e., it corresponds to an option that has a longer maturity date and only becomes vested after some time and if the manager is still with the firm.

In the regime where the manager is retained after bad performance, he is given a different second period wage according to whether the first period performance has been good or bad. This can be implemented by giving the manager a long term stock-option plan, that pays only if the firm performs well twice, but that is reset, in case of interim bad performance, i.e., the contract entails some form of resetting of the initial long term stock-options. This is similar to the case discussed in Acharya et.al. where date 2 incentive payments are also set so as to provide incentives to a manager with poor interim performance. We show that such repricing is only ex ante optimal in the presence of a managerial legacy and reputational concerns. Otherwise, it is better to fire the manager after poor interim performance.

One implication of Proposition 2 is thus that firms will be more willing to engage in the resetting of stock-options when the reputation of managers is important, while they should adopt more severe firing policies when such reputation concerns are absent. Brenner, Sundaran and Yermack (2000) and Chance, Kumar and Todd (2000) have found that repricing firms tend to be smaller, while Chidambaran and Prabhala (2003) find that repricers are concentrated in young firms in technology sectors. One interesting empirical implication of our model is that we would expect to find repricing to be more prevalent for younger managers, since these are the ones with stronger reputational concerns. It would be interesting to see whether the above empirical papers implicitly pick up an age effect of managers (e.g., one might expect to see that top managers of smaller firms are on average younger than those of larger firms). Finally, young technology firms fit well our description of firms where a long-term strategic decision is important. Managerial legacies and option repricing may therefore feature more prominently in those firms.

C. Renegotiation proof employment policy

We now turn to the case where the firm cannot commit to an employment policy. In other words, we allow the firm and the manager to renegotiate the employment contract if it is mutually profitable to do so.[8] The very notion of entrenchment implies that there is a limit to a firm's ability to write long-term contracts with a manager. Otherwise, it would always be possible to write a (long-term) contract that would not allow the manager to become entrenched. Entrenchment means that it becomes harder to get rid off a manager once he has been working for a firm for some time. There may be many circumstances under which it is impossible to write contracts that can preclude a manager's ability to become entrenched. In our case this means that the firm cannot or does not wish to write a contract that commits it to a particular employment policy. Shareholders will be willing to renegotiate with managers at the interim date ($t = 1$) if it is mutually advantageous. Of course, since managers will anticipate this, it will modify their ex ante incentives to work.

PROPOSITION 3 *The only renegotiation proof employment policy is to retain the manager at date 1, regardless of his performance.*

Proof. This statement follows straightforwardly from the comparison of the second period wage payments given in equations (3) and (5). Suppose the firm observes poor interim performance R_l. At that stage it has the choice of retaining the manager and paying wage $w_2^{l,h}$ in case of subsequent success, and hiring a new manager and paying $\widehat{w}_2^{l,h} > w_2^{l,h}$. Since the identity of the manager has no impact on performance the firm clearly prefers to retain the manager. Moreover, the manager also prefers to remain with the firm, because it allows him to earn the agency rent in the next period. Note that the firm is indifferent between retaining and firing the manager after good interim performance. However, since the manager strictly prefers to be retained, renegotiation would result in retaining him. □

Proposition 3 contains the key result on entrenchment. It states that a policy of firing the manager after poor interim performance is time inconsistent. Employing a new manager is more expensive than retaining the incumbent manager without yielding any benefit to the firm after date 1. Note that this result holds even though the incumbent has no productivity advantage over a newly employed manager, which is what usually underlies stories of entrenchment (e.g., Shleifer and Vishny (1989)).

Note that the above point raises a further interesting issue once one allows for different types of strategies. Suppose that instead of just having a choice over a potentially good or

[8] This assumption appears to be consistent with the empirical evidence provided by Chen (2004). He finds that firms that 'commit' not to re-price options, issue an abnormally large amount of new stock options. This suggests that firms do reward managers after poor performance, even when they 'committed' not do so.

bad long-term strategy, the firm could also engage in a sequence of short-term strategies, i.e., those that have a cash flow impact for only one period. In that case managers would not have an opportunity to entrench themselves, which would be welcome by the firm under certain parameter restrictions (essentially when the firm would prefer to fire the manager after poor interim performance; see condition (7) above). In that case one can see that a firm may have a preference over short-term strategies. Managers on the other hand might prefer long-term strategies, because it softens the firm's employment policy. This could provide a novel explanation as to why managers frequently complain that financial markets do not allow them to take a long-term view: markets rightly do not allow managers to take long-term strategies easily, because it allows managers to become entrenched. Managers prefer to be entrenched and therefore lament the market's focus on short-term strategies.[9]

IV. Wage contracts to elicit information

Let us now turn to the case where the manager may learn over time about the quality of his initial strategic decision. We are thus able to study how interim incentive payments and firing decisions are affected by asymmetric information. In particular we will show that severance payments may play an important role in making truthful announcement of negative information incentive compatible.

Assume that the manager sometimes learns privately at the interim date $t = 1$ that he chose the wrong strategy S_B. In particular, assume that he receives a signal $s = B$ with probability λ, when the state is S_B, i.e., $\lambda = prob(s = B|S_B)$. With complementary probability he receives no signal, i.e., $1 - \lambda = prob(s = \varnothing|S_B)$. Moreover, when the state is good he never receives a signal, i.e., $prob(s = \varnothing|S_G) = 1$. We elaborate below on the reasons for choosing this particular information structure. Finally, denote by $p^{\varnothing} = prob(S_G|s = \varnothing, R_l)$, which is given by $\frac{q_0(1-a_1)}{q_0(1-a_1)+(1-\lambda)(1-q_0)}$. This new framework is presented in Figure 2.

The firm may set the wage contract in such a way as to elicit the manager's private information about the underlying state. This information is only valuable to the firm if it would like to take a decision contingent on it. Obviously, otherwise the firm would never have an incentive to pay in order to elicit the information. The most natural decision contingent on the information is whether or not to liquidate the firm's operations after the interim date 1. In particular, we are interested in the case where the firm would be better off stopping its operations if it has made the wrong strategic choice. We therefore assume that the firm can be liquidated at the interim date and generate value $V > R_l$. Moreover, assume that it is optimal to continue with the firm when no information about

[9] See Stein (1988, 1989), Shleifer and Vishny (1990) and von Thadden (1995) for treatments of managerial short-termism.

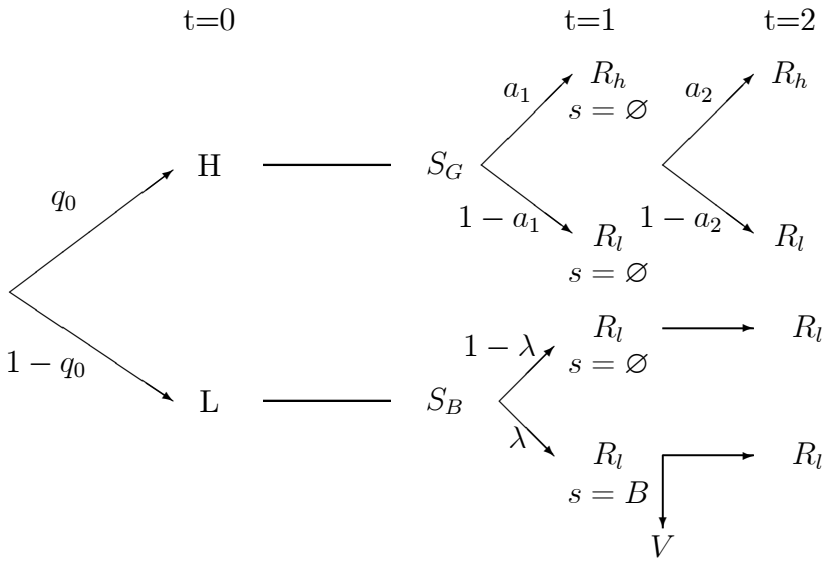

Figure 2: Timing and payoffs under asymmetric information.

the state of the world is received, i.e.,

$$\begin{aligned} p^{\varnothing}\left(\overline{a}_2\left(R_h - w_2^{l,h}\right) + (1-\overline{a}_2)\,R_l\right) + \left(1-p^{\varnothing}\right)R_l \quad &> \quad V, \\ &\Longleftrightarrow \\ p^{\varnothing}\overline{a}_2\left(R_h - R_l - w_2^{l,h}\right) \quad &> \quad V - R_l. \end{aligned}$$

In the following, we determine the characteristics of the different contractual regimes the firm may want to establish, and investigate when each is optimal. Four contractual arrangements may in principle be optimal. Firstly, there are two contracts that induce information revelation by the manager after poor interim performance: (i) The manager is offered the choice between being fired with a *golden handshake* and remaining under a fresh incentive contract. (ii) The manager is always fired after poor interim performance, but is offered a payment if he announces that he made a bad strategic choice initially. We call this the contrition regime: even though the manager always has to leave the firm after bad performance, it may pay him to show contrition. In addition there are two contracts that do not elicit information: (iii) There is a *lenient* contract that allows the manager to stay with the firm even after poor interim performance, and (iv) there is a *tough* contract that fires the manager whenever he performs poorly at the interim date.

A. Golden handshake for 'voluntary retirement'

Suppose the manager is offered the choice between the following contracts after poor interim performance R_l has been observed. He can either announce $s' = B$, be fired and receive a golden handshake worth $\widetilde{w}_g$ or he can announce $s' = \varnothing$, be retained and

receive an incentive contract $\widetilde{w}_2^{l,h}$.[10] Given our initial assumptions, whenever the manager reports that he received a bad signal, the firm decides to liquidate its operations. Defining the reputation updates after announcement $s' = \varnothing$ by $\widetilde{q}^{i,j}$, his incentive compatibility constraints for truthtelling are:

$$\begin{aligned}
\widetilde{w}_g + f_1\left(q^B\right) &\geq f_2(\widetilde{q}^{l,l}), && (8)\\
p^{\varnothing}\left(\overline{a}_2\left(\widetilde{w}_2^{l,h} + f_2(\widetilde{q}^{l,h})\right) + (1-\overline{a}_2)\, f_2(\widetilde{q}^{l,l})\right) + \left(1-p^{\varnothing}\right) f_2(\widetilde{q}^{l,l}) - c & \\
&\geq \widetilde{w}_g + f_1\left(q^B\right), && (9)\\
\widetilde{w}_2^{l,h} &\geq \frac{c}{p^{\varnothing}\Delta a_2} - \left(f_2(\widetilde{q}^{l,h}) - f_2(\widetilde{q}^{l,l})\right). && (10)
\end{aligned}$$

Equation (8) imposes that the manager prefers to reveal his bad signal and leave the firm with a golden handshake when $s = B$. Equation (9) ensures that the manager prefers to be retained when he has received no signal. Last, equation (10) specifies that the manager is induced to exert effort when he is retained. The following Lemma presents the characteristics of the contracts offered to the manager.

LEMMA 1 *Optimal wage payments in the golden handshake regime are given by:*

$$\begin{aligned}
\widetilde{w}_2^{h,h} &= \frac{c}{\Delta a_2},\\
\widetilde{w}_2^{l,h} &= \max[0; \frac{c}{p^{\varnothing}\Delta a_2} - \left(f_2(\widetilde{q}^{G}) - f_2(\widetilde{q}^{l,l})\right)],\\
\widetilde{w}_1^{h} &= \max[0, \frac{c}{q_0\Delta a_1} - (f_2(\widetilde{q}^{G}) - f_2(\widetilde{q}^{l,l})) + \frac{\overline{a}_2 c}{\Delta a_2}(\frac{1-p^{\varnothing}}{p^{\varnothing}})],\\
\widetilde{w}_g &= f_2(\widetilde{q}^{l,l}) - f_1(q^B).
\end{aligned}$$

Proof see Appendix.

In order to induce the manager to reveal his negative information $s = B$, the firm has to pay him a compensation in the form of a golden handshake. Note that remaining employed is actually of no direct value to the manager when he knows that he is in the bad state: the future cash flow will be low for sure, and therefore his wage payment will be zero, i.e., the manager knows that he cannot earn a rent from remaining employed in the bad state. However, admitting that he chose the wrong strategy S_B carries a reputational cost to the manager, because $\widetilde{q}^{l,l} > q^B$. If the manager performs poorly twice, but does not admit to knowing that he chose the strategy S_B (he announces $s' = \varnothing$) the labour market evaluates him higher, than a manager who is known to have chosen the wrong strategy (announces $s' = B$). This is because even a manager who chose the right strategy may sometimes be unlucky in the implementation and perform poorly.

[10] In practise we may not expect to observe such a choice. Instead, we may only see the outcome of the choice being announced by the firm.

The golden handshake therefore has to compensate the manager for the reputational loss associated with admitting that he chose the incorrect strategy. This contractual arrangement has the disadvantage that it leaves an informational rent to the manager. Its advantage is that it allows the firm to learn the manager's information. In addition it also makes it cheaper to provide incentives for the retained manager in the second period, compared to the case where a new manager is employed.

B. Golden handshake for involuntary retirement and contrition

An alternative contracting regime could be to fire the manager whenever he performed poorly at the interim date, but still elicit information from him about the state S. This could be achieved by giving the manager a severance payment $\bar{w}_s$ when he announces the state $s' = B$. The main difference between the 'golden handshake' regime above and this regime is that in the former, the manager gets a golden handshake when he chooses to leave the firm, while in the latter regime, he is given a severance payment only if the firm fires him *and* stops its operations. If the manager does not announce $s' = B$, the firm just replaces him for bad performance and he is left with nothing.

One needs to ensure that the manager only announces B, when he received $s = B$, and does not make such an announcement in order to get the severance payment even when he received no signal. Note, however, that the manager is rewarded implicitly for making the announcement $s' = \varnothing$, because it will result in the continuation of the firm, which allows the manager to rehabilitate his reputation when the firm performs well subsequently. In this contract, if the manager reports $s' = B$, on top of firing the manager the firm liquidates the project under his control. The manager would only make such an announcement if he is fully compensated for the resulting loss in reputation, i.e., $\bar{w}_s \geq f_2(\widetilde{q}^{l,l}) - f_1(q^B)$. This severance payment is exactly the same as under the golden handshake for voluntary retirement.[11]

Moreover, in order to induce truthtelling after the signal $s = \varnothing$ the following constraint has to hold:

$$p^{\varnothing}\left(\overline{a}_2 f_2(\widetilde{q}^G) + (1-\overline{a}_2)\, f_2(\widetilde{q}^{l,l})\right) + \left(1-p^{\varnothing}\right) f_2(\widetilde{q}^{l,l}) \geq \bar{w}_s + f_1\left(q^B\right). \tag{11}$$

Note that equation (11) is always satisfied when $\bar{w}_s = f_2(\widetilde{q}^{l,l}) - f_1(q^B)$. In addition to truthtelling by the (fired) manager, the firm needs to ensure that a newly hired manager exerts effort. Straightforward calculation yields the required wage payment:

$$\bar{w}_2^{l,h} = \frac{c}{p^{\varnothing}\Delta a_2}.$$

[11] Note that this is a somewhat special case. The manager may value being employed even in the bad state S_B if he can earn a rent. This would be the case if a high cash flow R_h was possible after S_B. In this case the golden handshake would become more expensive, because it would have to compensate the manager for reputational loss, and the agency rent.

Just like the previous case, it is costly to fire the manager when he (truthfully) announces $s' = \varnothing$, because the newly employed manager has no reputational concern.

The properties of the contrition regime are presented below.

LEMMA 2 *In the 'contrition' regime, wage contracts are given by:*

$$\begin{aligned}
\bar{w}_2^{h,h} &= \frac{c}{\Delta a_2}, \\
\bar{w}_2^{l,h} &= \frac{c}{p^{\varnothing}\Delta a_2}, \\
\bar{w}_1^{h} &= \max[0, \frac{c}{q_0 \Delta a_1} - (f_2(\widetilde{q}^G) - f_2(\widetilde{q}^{l,l})) + \frac{\overline{a}_2 c}{\Delta a_2}(\frac{1-p^{\varnothing}}{p^{\varnothing}})], \\
\bar{w}_g &= f_2(\widetilde{q}^{l,l}) - f_1(q^B).
\end{aligned}$$

Proof see Appendix.

Note that this contract has the same advantages and disadvantages as the 'golden handshake for voluntary retirement,' (information revelation at a cost) except that it re-introduces the pros and cons of firing the incumbent manager. The only difference between the two contracts consists of the fact that in the first case, the manager is retained after bad performance when no private information is present, while in the second regime he is fired after bad performance. Hence, the trade-off between choosing the golden handshake after voluntary retirement and choosing the golden handshake after involuntary retirement with contrition boils down to the trade-off described in Section 3.1. The wage payments $w_2^{l,h}$ and w_1^h in Lemmas 1 and 2 reflect precisely this difference.

C. Uncontingent contracts

Last, the firm can decide not to elicit information from the manager, and to rely only on the first period performance to keep the manager or not. One may wonder why such uncontingent contracts might be optimal. As will be seen later, if there were no reputational concerns, such contracts would always be dominated by the contingent contracts. In that case, the optimal contract would involve a contrition regime whereby information is revealed, and the manager is given maximal incentives by being fired each time he performs badly. In the presence of career concerns however, things are less clear, since the firm may want to rely on the (cheap) implicit incentives provided by the manager's reputation. Since revealing information at $t = 1$ modifies the updates in reputation the manager can obtain, such information revelation will affect the efficiency of the implicit incentive scheme. As a result, the firm may prefer not to obtain too much information. To determine the optimal contract, we maintain our initial assumption that the firm prefers to continue when no information about the state is revealed. Also, we keep the

same notations as in the symmetric information case, and reputation updates without any announcement will be denoted $q^{i,j}$.

The following lemmas characterize the two contracting regimes where the firm does not elicit information. In the lenient regime, the manager is always retained after bad performance, while in the tough contracting regime, the manager is always fired after bad performance. These characteristics are very similar to the ones described in the symmetric information case. The main difference is that even if no information is revealed, it will nevertheless be used by the manager: in the lenient regime, when the manager receives a bad signal, he knows there is no need to exert effort: his second period wage will bet set accordingly, and effort costs will be saved.

LEMMA 3 *In the lenient regime wage contracts are given by:*

$$\begin{aligned} w_2^{h,h} &= \frac{c}{\Delta a_2}, \\ w_2^{l,h} &= \max[0; \frac{c}{p^{\varnothing}\Delta a_2} - \left(f_2\left(q^G\right) - f_2\left(q^{l,l}\right)\right)], \qquad (12) \\ w_1^{h} &= \max[0, \frac{c}{q_0\Delta a_1} - (f_2(q^G) - f_2(q^{l,l})) + \frac{\overline{a}_2 c}{\Delta a_2}(\frac{1-p^{\varnothing}}{p^{\varnothing}})], \qquad (13) \\ w_1^{l} &= w_2^{l,l} = 0. \end{aligned}$$

In the tough contracting regime, the wage contracts are given by:

$$\begin{aligned} \widehat{w}_2^{h,h} &= \frac{c}{\Delta a_2}, \\ \widehat{w}_2^{l,h} &= \frac{c}{p^{l}\Delta a_2}, \qquad (14) \\ \widehat{w}_1^{h} &= \max[0, \frac{c}{q_0\Delta a_1} - (1-\overline{a}_2)(f_2(q^G) - f_2(q^{l,l})) - \frac{\underline{a}_2 c}{\Delta a_2}], \qquad (15) \\ \widehat{w}_1^{l} &= \widehat{w}_2^{l,l} = 0. \end{aligned}$$

Proof see Appendix.

Straightforward comparison with the contracts presented in proposition 1 shows that in the tough contracting regime, the wage contract is the same as in the symmetric information case: this is because the manager is always fired after bad performance, and is never given the opportunity to use is private information. In the lenient regime however, the manager will only exert effort if he receives no signal, which modifies his second period wage contract, and in turn his first period wage.

D. Optimal contracts

We now compare the different contractual regimes, and state when each is optimal. The basic trade-offs between the regimes are as follows. Firstly, the golden handshake and

the contrition regimes both elicit information. This is costly, but potentially useful. The cost of eliciting information depends on the strength of reputational concerns, since the golden handshake needs to compensate the manager for loss in reputation. The benefit of information is that it allows (efficient) liquidation in the bad state of the world. The other dimension along which contracts differ is whether they implement a tough firing policy (the contrition regime and the tough regime do that), or whether they (sometimes) retain the manager after poor interim performance (the golden handshake regime and the lenient regime do that). Reputational concerns also affect this trade-off, as is known from the discussion in Section III: The higher reputational concerns, the more expensive it is to replace the manager after poor interim performance. In the absence of any reputational concerns one would therefore expect the regime to do best, which elicits information and implements a tough firing policy. This is shown in the following Proposition.

PROPOSITION 4 *If there are no reputational concerns, the optimal contractual regime is the contrition regime.*

Proof see Appendix.

The intuition of this Proposition is straightforward: in the contrition regime, the manager is always fired after bad performance, which provides him with higher powered incentives to work hard in the first period. We already stated that the main drawback of this regime is not allowing a full use of the implicit incentives given by reputation: when there are no reputation concerns, there are no implicit incentives, and it is not costly for the firm to implement this contractual regime. Last, the contrition regime does better than the tough regime because information about the strategy chosen is revealed, which allows the firm to liquidate its operations whenever $s = B$. In the uncontingent tough regime, the firm always fired the manager, but always continues, which is sometimes suboptimal.

More generally, we can state more precisely which regime is optimal depending on the strength of reputational concerns.

PROPOSITION 5 *If reputational concerns are not very important, in the sense that:*

$$\overline{a}_2[f_2(\widetilde{q}^G) - f_2(\widetilde{q}^{l,l})] \leq \overline{a}_1 c \left[\frac{\overline{a}_2}{p^{\varnothing}\Delta a_2} - 1\right], \tag{16}$$

- *the contrition regime is optimal if:*

$$\frac{(1-q_0)}{q_0}\lambda[V - R_l - (f_2(\widetilde{q}^G) - f_2(\widetilde{q}^{l,l}))] \geq \overline{a}_1(1-\overline{a}_2)\Delta f(\widetilde{q}^{l,l}, q^{l,l}) \tag{17}$$
$$+ \max\left[-\overline{a}_2(1-\overline{a}_1)\frac{c}{\Delta a_2}\left(\frac{1}{p^l} - \frac{1}{p^{\varnothing}}\right); \overline{a}_2(f_2(q^G) - f_2(q^{l,l})) - \overline{a}_1 c\left(\frac{\overline{a}_2}{p^{\varnothing}\Delta a_2} - 1\right)\right].$$

- *If condition (17) does not hold, the lenient regime is optimal if:*

$$\max\left[-\overline{a}_2(1-\overline{a}_1)\frac{c}{\Delta a_2}\left(\frac{1}{p^l}-\frac{1}{p^\varnothing}\right);\overline{a}_2(f_2(q^G)-f_2(q^{l,l}))-\overline{a}_1 c\left(\frac{\overline{a}_2}{p^\varnothing\Delta a_2}-1\right)\right]\geq$$
$$\overline{a}_2(f_2(q^G)-f_2(q^{l,l}))-\overline{a}_1 c\left(\frac{\overline{a}_2}{p^\varnothing\Delta a_2}-1\right).$$

- *Last, the tough regime is optimal if:*

$$\max\left[-\overline{a}_2(1-\overline{a}_1)\frac{c}{\Delta a_2}\left(\frac{1}{p^l}-\frac{1}{p^\varnothing}\right);\overline{a}_2(f_2(q^G)-f_2(q^{l,l}))-\overline{a}_1 c\left(\frac{\overline{a}_2}{p^\varnothing\Delta a_2}-1\right)\right]\geq$$
$$-\overline{a}_2(1-\overline{a}_1)\frac{c}{\Delta a_2}\left(\frac{1}{p^l}-\frac{1}{p^\varnothing}\right).$$

Proof see Appendix.

The intuition of Proposition 5 is the following. When reputational concerns are rather low, as suggested before a more severe firing policy is more desirable. In that case, a contrition regime is optimal if the gains to liquidate when $s=B$ are very high. If not, the firm will turn to an uncontingent regime. Recall from subsection C that the advantage of a lenient regime is that it allows the manager to use his private information not to exert effort whenever $s=B$: the firm therefore saves on effort costs. This is why sometimes the lenient regime turns out to be optimal, while sometimes the tough regime is preferable.

PROPOSITION 6 *If reputational concerns are important, in the sense that:*

$$\overline{a}_2[f_2(\widetilde{q}^G)-f_2(\widetilde{q}^{l,l})]>\overline{a}_1 c\left[\frac{\overline{a}_2}{p^\varnothing\Delta a_2}-1\right], \tag{18}$$

- *the golden handshake is optimal if:*

$$\frac{(1-q_0)}{q_0}\lambda[V-R_l-(f_2(\widetilde{q}^G)-f_2(\widetilde{q}^{l,l}))]\geq(\overline{a}_1+\overline{a}_2(1-\overline{a}_1))\Delta f(\widetilde{q}^{l,l},q^{l,l}). \tag{19}$$

- *If condition (19) does not hold, the lenient regime is optimal.*

Proof see Appendix.

When reputational concerns are important, the firm is more willing to rely on implicit incentives to induce the manager to work. Therefore, shareholders are more reluctant to fire the manager, even after bad performance. The trade-off is thus between a lenient regime, in which the manager is never fired, and a (more severe) regime in which the manager is fired after bad performance, but only if he reports a bad signal. Intuitively, the latter regime is preferable when it is very efficient to liquidate the firm's operations once one knows for sure that the wrong strategic choice has been made. If this is not the case, and in particular if the benefits of liquidation (V) are low, then the firm will opt for a lenient policy, and managers will never be replaced.

V. Interpretation of wage contracts and empirical predictions

As in Section III the wage contracts under the different firing policies can be interpreted in terms of stock options, since their common feature is to reward the manager only after good performance. In the regimes where the manager is fired after bad interim performance (i.e. in the tough regime, and in the severance payment regime), one possible interpretation is as before: the manager is given a short-term stock-option, that has value only if the first period performance is good, and that is exercised immediately. On top of that, the manager is given a long-term stock-option that pays only if the firm performs well twice. Otherwise the manager is fired, possibly with a severance payment, and his stock-options are valueless. In the remaining two regimes (i.e. in the lenient and in the golden handshake regime), one can interpret the wage contracts as follows: the manager is given as before a short-term stock option plan, and a long-term stock option plan that has value only if the firm performs well in both periods. But if the firm performs badly in period 1, in case the manager is retained (which happens with probability one under the lenient regime, and with a lower probability under the golden handshake regime), he is given a new stock option plan that pays if the second period performance is good. In that sense, these last two regimes exhibit some form of resetting of the initial long term stock option plan.

We can thus derive some empirical predictions from the results stated in Section D. First there should be more managerial turnover in firms where reputational concerns are low. If one measures reputational concern with the age of a manager, this yields the prediction that we should see more option re-pricing and lower turnover among younger managers. Moreover, one may expect that reputational concerns of managers who are junior in an organization are particularly strong, because of career prospects within their own organization. Interestingly, Chidambaran and Prabhala (2003) find empirically that in 40% of the cases where re-pricing is offered, the top CEO is not included in the re-pricing, and higher turnover results. This is consistent with the prediction of our model according to which higher career concerns of junior managers should lead to more re-pricing and lower turnover.

Second, in industries where asset redeployability is high, one should observe more golden handshakes and more managerial turnover. Moreover, we would expect to see more downsizing and asset disposals after a manager is fired and given a golden handshake. Denis and Denis (1995) find that firing decisions lead to downsizing, but they do not divide their sample according to whether or not managers who left received high severance payments.

It is also interesting to apply our model to takeovers. One could imagine for example, a potential acquirer approaching a target firm. This often happens initially on the basis of a friendly bid in which the incumbent manager is offered to remain in place after

the acquisition. If the manager refuses this offer, the bid may turn hostile. In that case incumbent managers are almost always replaced and often receive a generous golden parachute. The initial choice of whether to accept a friendly bid or to let it turn hostile is very often at the discretion of the top management of the target company (much like the manager in our model who chooses whether or not to stay with the firm). As such this choice may well reveal private information of that manager regarding the firm. Interestingly, Franks and Mayer (1996) find that asset disposals and redeployment are extremely high in hostile acquisitions compared to friendly ones. This finding can be interpreted in light of our model: Those managers that prefer to leave with a golden parachute reveal to the bidder that their original strategy was wrong, which leads the acquirer to redeploy assets after the acquisition.

VI. Conclusion

This paper explores how managerial legacies affect wages and firing policies of firms, using a dynamic moral hazard model in the presence of career concerns. Managers that take long-term strategic decisions leave a legacy if they are dismissed. This makes it hard to assess the performance of new management, who may attempt to lay the blame of their own poor performance on the nature of the legacy. The resulting cost of incentivizing new management then allows incumbent managers to become entrenched. It may therefore be cheaper for a firm to retain a poorly performing manager and re-price his stock options, than to replace him with a new manager. Entrenchment is more pronounced when the original manager has stronger reputational concerns, because in that case he has strong implicit incentives to implement his own strategy successfully. A new manager would not have those implicit incentives, because failure could not be blamed on him in the same way.

It is also shown that when managers gain superior information about their original strategic choice, it may be desirable to award them a golden handshake when they part with the firm. The severance payment induces the manager to leave the firm when he knows that the strategy cannot be successful. Since this admission of failure carries a reputational cost, such a payment is necessary to induce truthful information revelation. The manager's decision to accept leaving the firm reveals information to shareholders which can be used to restructure or liquidate the firm. If the manager does not accept the payment he may stay with the firm under a re-priced option contract. We would therefore expect to see stock option re-pricing and high severance payments, when reputational concerns are important and in situations that follow long-term strategic decisions. Moreover, we would expect to see more pronounced redeployment of assets when a manager leaves with a golden handshake, compared to when he is simply fired. Testing the hypotheses proposed in this paper is left for future research.

Appendix

Proof of Proposition 1

• Determination of the second period wage: The incentive compatibility condition of the manager in place at t=1 is generically written:

$$p^i\left(\overline{a}_2(w_2^{i,h}+f_t(q_{i,h}))+(1-\overline{a}_2)(w_2^{i,l}+f_t(q_{i,l}))\right)+(1-p^i)(w_2^{i,l}+f_t(q_{i,l}))-c\geq$$
$$p^i\left(\underline{a}_2(w_2^{i,h}+f_t(q_{i,h}))+(1-\underline{a}_2)(w_2^{i,l}+f_t(q_{i,l}))\right)+(1-p^i)(w_2^{i,l}+f_t(q_{i,l})). \quad (20)$$

After manipulations, equation (20) is written:

$$(w_2^{i,h}-w_2^{i,l})\geq\frac{c}{p^i\Delta a_2}-(f_2(q_{i,h})-f_2(q_{i,l})). \quad (21)$$

Suppose first that R_h occurred in period one. If the manager in place at $t=0$ is retained, we have: $f_2(q_{h,h})-f_2(q_{h,l})=0$, and $p^h=1$. Equation (21) becomes:

$$(w_2^{h,h}-w_2^{h,l})\geq\frac{c}{\Delta a_2}.$$

As is standard in moral hazard problems, to maximize the shareholders payoffs, the optimal contract is: $w_2^{h,h}=\frac{c}{\Delta a_2}$ and $w_2^{h,l}=0$. Note that in that case, the same contract will be given to a new manager if the firm decides to fire the initial manager. We will see however that this is not optimal for first period incentives.

Suppose next that R_l occurred in period one. If the initial manager is retained, equation (21) is:

$$(w_2^{l,h}-w_2^{l,l})\geq\frac{c}{p^l\Delta a_2}-(f_2(q_G)-f_2(q_{l,l})).$$

To maximize the shareholders' profits, one chooses the minimum wages that satisfy (21). The optimal contract is then:

$$\begin{cases} w_2^{l,h} &= \max[0;\frac{c}{p^l\Delta a_2}-\left(f_2\left(q^G\right)-f_2\left(q^{l,l}\right)\right)], \\ \text{and} & \\ w_2^{l,l} &= 0. \end{cases}$$

If the initial manager is fired, the newly hired manager's reputation will not be affected by the second period cash-flows, since he cannot be held responsible for initial strategic choices. Equation (21) leads to:

$$\begin{cases} \widehat{w}_2^{l,h} &= \frac{c}{p^l\Delta a_2}, \\ \text{and} & \\ \widehat{w}_2^{l,l} &= 0, \end{cases}$$

where $\widehat{w}_2$ denotes the wage contract offered to the newly hired manager.

• Determination of the first period wage: Suppose first that the firm commits to retain the manager hired at $t=0$ whatever the cash-flow realization at $t=1$. The first period

incentive compatibility condition, taking into account the second period optimal wage contract is written:

$$q_0\left[\overline{a}_1(w_1^h+\overline{a}_2(w_2^{h,h}+f_2(q_G))+(1-\overline{a}_2)f_2(q_G)-c)+(1-\overline{a}_1)(w_1^l+\overline{a}_2(w_2^{l,h}+f_2(q_G))+(1-\overline{a}_2)f_2(q_{l,l})-c)\right]$$
$$+(1-q_0)(w_1^l+f_2(q_{l,l})-c)-c\geq(1-q_0)(w_1^l+f_2(q_{l,l})-c)$$
$$+q_0\left[\underline{a}_1(w_1^h+\overline{a}_2(w_2^{h,h}+f_2(q_G))+(1-\overline{a}_2)f_2(q_G)-c)+(1-\underline{a}_1)(w_1^l+\overline{a}_2(w_2^{l,h}+f_2(q_G))+(1-\overline{a}_2)f_2(q_{l,l})-c)\right] \quad (22)$$

This condition implicitly assumes that the manager who is retained chooses effort $\overline{a}_2$ in the second period, even if he exerts effort $\underline{a}_1$ at t=1. It is easy to see that this is always true given the second period optimal wage contract: indeed, we always have $p^i(\overline{a}_1)\leq p^i(\underline{a}_1)$. Since second period wages are set given $p^i(\overline{a}_1)$, the initial manager will be *even more* willing to exert effort $\overline{a}_2$, if he chose $\underline{a}_1$.

Replacing the second period wages by their value, and rearranging equation (22) gives:

$$q_0\Delta a_1\left[w_1^h-w_1^l+\frac{\overline{a}_2c}{\Delta a_2}+f_2(q_G)-\frac{\overline{a}_2c}{p^l\Delta a_2}-f_2(q_{l,l})\right]\geq c.$$

Clearly, it is optimal to set $w_1^l=0$, and :

$$w_1^h=\max[0,\frac{c}{q_0\Delta a_1}-(f_2(q^G)-f_2(q^{l,l}))+\frac{\overline{a}_2c}{\Delta a_2}(\frac{1-p^l}{p^l})].$$

It is easy to check that if the initial manager is fired if R_h occurs at date 1, it becomes harder to incentivize him ex ante: this is because the perspective of earning the second period rent makes him more willing to exert effort initially: by exerting effort $\overline{a}_1$ he increases the probability to earn the second period rent.

Proceed as before to write down the first period incentive compatibility condition if the manager is fired after bad performance at t=1. To distinguish contractual features of the different firing policies, denote $\widehat{w}$ the wage given in this regime.

$$q_0\left[\overline{a}_1(\widehat{w}_1^h+\overline{a}_2(\widehat{w}_2^{h,h}+f_2(q_G))+(1-\overline{a}_2)f_2(q_G)-c)+(1-\overline{a}_1)(\widehat{w}_1^l+\overline{a}_2f_2(q_G)+(1-\overline{a}_2)f_2(q_{l,l}))\right]$$
$$+(1-q_0)(\widehat{w}_1^l+f_2(q_{l,l}))-c\geq(1-q_0)(\widehat{w}_1^l+f_2(q_{l,l}))$$
$$+q_0\left[\underline{a}_1(\widehat{w}_1^h+\overline{a}_2(\widehat{w}_2^{h,h}+f_2(q_G))+(1-\overline{a}_2)f_2(q_G)-c)+(1-\underline{a}_1)(\widehat{w}_1^l+\overline{a}_2f_2(q_G)+(1-\overline{a}_2)f_2(q_{l,l}))\right].$$

This leads to $\widehat{w}_1^l=0$ and:

$$\widehat{w}_1^h=\max[0,\frac{c}{q_0\Delta a_1}-(1-\overline{a}_2)(f_2(q^G)-f_2(q^{l,l}))-\frac{\underline{a}_2c}{\Delta a_2}].$$

■

Proof of Proposition 2

To maximize the shareholders' expected profits, given that in both regimes, the expected cash-flows gross of wage costs are the same (the same effort levels are induced), one needs

to minimize the expected wages paid to managers. If shareholders commit to retain the initial manager even after R_l the expected wage cost is:

$$E_R(w) = q_0 \left[\overline{a}_1 (w_1^h + \overline{a}_2 w_2^{h,h}) + (1 - \overline{a}_1)\overline{a}_2 w_2^{l,h} \right].$$

If shareholders commit to fire the initial manager after R_l, their expected wage cost is:

$$E_F(w) = q_0 \left[\overline{a}_1 (\widehat{w}_1^h + \overline{a}_2 \widehat{w}_2^{h,h}) + (1 - \overline{a}_1)\overline{a}_2 \widehat{w}_2^{l,h} \right].$$

Replacing the wages by their value, given in proposition 1, it is easy to establish that $E_F(w) \leq E_R(w)$ iff equation (7) page 10 holds.

■

Proof of lemma 1

Denote $\widetilde{w}_t^{i,j}$ the wages given to managers under the golden parachute regime.

• Determination of the second period wage:

Proceeding as in proposition 1, note first that if R_h occurs, the second period incentive compatibility condition of the manager imposes as usual: $\widetilde{w}_2^{h,h} = \frac{c}{\Delta a_2}$ and $\widetilde{w}_2^{h,l} = 0$.

If R_l occurs, the initial manager is given the choice between a golden parachute $\widetilde{w}_g$ and a second period wage $\widetilde{w}_2^{l,i}$. Note first that condition (8) must be binding. If not, decreasing $\widetilde{w}_g$ would relax (9) and increase the shareholders's expected profits. Second, see from equation (10) that $\widetilde{w}_2^{l,l} = 0$. Equation (10) thus becomes:

$$\widetilde{w}_2^{l,h} \geq \frac{c}{p^{\varnothing} \Delta a_2} - (f_2(\widetilde{q}_G) - f_2(\widetilde{q}_{l,l})). \tag{23}$$

Replace $\widetilde{w}_g$ defined by (8) into equation (9) to get:

$$\widetilde{w}_2^{l,h} \geq \frac{c}{p^{\varnothing} \overline{a}_2} - (f_2(\widetilde{q}_G) - f_2(\widetilde{q}_{l,l})),$$

which is always satisfied when equation (23) is.

• Determination of the first period wage:

The first period incentive compatibility condition of the manager under the golden parachute regime is:

$$\begin{aligned} & q_0 \left[\overline{a}_1 (\widetilde{w}_1^h + \overline{a}_2 (\widetilde{w}_2^{h,h} + f_2(\widetilde{q}_G)) + (1 - \overline{a}_2) f_2(\widetilde{q}_G) - c) + (1 - \overline{a}_1)(\widetilde{w}_1^l + \overline{a}_2 (\widetilde{w}_2^{l,h} + f_2(\widetilde{q}_G)) + (1 - \overline{a}_2) f_2(\widetilde{q}_{l,l}) - c) \right] \\ & + (1 - q_0)(w_1^l + (1 - \lambda)(f_2(\widetilde{q}_{l,l}) - c) + \lambda(\widetilde{w}_g + f_1(q^B))) - c \geq (1 - q_0)(\widetilde{w}_1^l + (1 - \lambda)(f_2(\widetilde{q}_{l,l}) - c) + \lambda(\widetilde{w}_g + f_1(q^B))) \\ & + q_0 \left[\underline{a}_1 (\widetilde{w}_1^h + \overline{a}_2 (\widetilde{w}_2^{h,h} + f_2(\widetilde{q}_G)) + (1 - \overline{a}_2) f_2(\widetilde{q}_G) - c) + (1 - \underline{a}_1)(\widetilde{w}_1^l + \overline{a}_2 (\widetilde{w}_2^{l,h} + f_2(\widetilde{q}_G)) + (1 - \overline{a}_2) f_2(\widetilde{q}_{l,l}) - c) \right] \end{aligned} \tag{24}$$

Replacing the second period wage and the golden parachute by their value, simple manipulations of (24) lead to $\widetilde{w}_1^l = 0$ and:

$$\widetilde{w}_1^h = \max[0, \frac{c}{q_0 \Delta a_1} - (f_2(\widetilde{q}^G) - f_2(\widetilde{q}^{l,l})) + \frac{\overline{a}_2 c}{\Delta a_2} (\frac{1 - p^{\varnothing}}{p^{\varnothing}})].$$

■

Proof of Lemma 2

The second wage contract is determined in the text. Proceed as before to determine the first period wage contract, given that the first period incentive compatibility condition is now written:

$$
\begin{aligned}
&q_0\left[\overline{a}_1(\bar{w}_1^h+\overline{a}_2(\bar{w}_2^{h,h}+f_2(\widetilde{q}_G))+(1-\overline{a}_2)f_2(\widetilde{q}_G)-c)+(1-\overline{a}_1)(\bar{w}_1^l+\overline{a}_2(f_2(\widetilde{q}_G))+(1-\overline{a}_2)f_2(\widetilde{q}_{l,l}))\right]\\
&+(1-q_0)(w_1^l+(1-\lambda)(f_2(\widetilde{q}_{l,l}))+\lambda(\bar{w}_g+f_1(q^B)))-c\geq(1-q_0)(\bar{w}_1^l+(1-\lambda)(f_2(\widetilde{q}_{l,l}))+\lambda(\bar{w}_g+f_1(q^B)))\\
&+q_0\left[\underline{a}_1(\bar{w}_1^h+\overline{a}_2(\bar{w}_2^{h,h}+f_2(\widetilde{q}_G))+(1-\overline{a}_2)f_2(\widetilde{q}_G)-c)+(1-\underline{a}_1)(\bar{w}_1^l+\overline{a}_2(f_2(\widetilde{q}_G))+(1-\overline{a}_2)f_2(\widetilde{q}_{l,l}))\right] \qquad (25)
\end{aligned}
$$

■

Proof of Lemma 3

First note that the tough regime correspond to the regime in which the firm commits to fire the manager after R_l in the symmetric information case. See the proof of proposition 1 for the determination of the optimal wages in this regime.

The lenient regime optimal wages are determined as follows.

• Determination of the second period wage:

As usual, if R_h occurs, it is optimal to set: $w_2^{h,h}=\frac{c}{\Delta a_2}$ and $w_2^{h,l}=0$.

If R_l occurs, the incentive compatibility condition (21) of the manager who is retained becomes:

$$(w_2^{l,h}-w_2^{l,l})\geq\frac{c}{p^{\varnothing}\Delta a_2}-(f_2(q_G)-f_2(q_{l,l})),$$

which immediately gives the second period wage presented in lemma 3.

• Determination of the first period wage: The first period incentive compatibility condition in the lenient regime is written:

$$
\begin{aligned}
&q_0\left[\overline{a}_1(w_1^h+\overline{a}_2(w_2^{h,h}+f_2(q_G))+(1-\overline{a}_2)f_2(q_G)-c)+(1-\overline{a}_1)(w_1^l+\overline{a}_2(w_2^{l,h}+f_2(q_G))+(1-\overline{a}_2)f_2(q_{l,l})-c)\right]\\
&+(1-q_0)(w_1^l+f_2(q_{l,l})-(1-\lambda)c)-c\geq(1-q_0)(w_1^l+f_2(q_{l,l})-(1-\lambda)c)\\
&+q_0\left[\underline{a}_1(w_1^h+\overline{a}_2(w_2^{h,h}+f_2(q_G))+(1-\overline{a}_2)f_2(q_G)-c)+(1-\underline{a}_1)(w_1^l+\overline{a}_2(w_2^{l,h}+f_2(q_G))+(1-\overline{a}_2)f_2(q_{l,l})-c)\right] \qquad (26)
\end{aligned}
$$

Note that the only difference with the regime in which the manager is always retained in the symmetric information case (equation (22)) is that the manager exerts no effort if R_l occurs and he receives a bad signal. Replacing the second period wages by their value gives immediately the optimal contract in the lenient regime.

■

Proof of Proposition 4

The expected payoff of shareholders if they commit to the golden parachute regime is written:

$$\begin{aligned} E_G(R) &= q_0 \left[\overline{a}_1 \left(R_h - \widetilde{w}_1^h + \overline{a}_2 (R_h - \widetilde{w}_2^{h,h}) + (1-\overline{a}_2) R_l \right) \right. \\ &\quad \left. + (1-\overline{a}_1) \left(R_l + \overline{a}_2 (R_h - \widetilde{w}_2^{l,h}) + (1-\overline{a}_2) R_l \right) \right] \\ &\quad + (1-q_0) \left[\lambda (V - \widetilde{w}_g) + (1-\lambda) R_l + R_l \right]. \end{aligned} \tag{27}$$

Similarly, under the severance payment regime, the shareholders' expected cash-flows are:

$$\begin{aligned} E_S(R) &= q_0 \left[\overline{a}_1 \left(R_h - \bar{w}_1^h + \overline{a}_2 (R_h - \bar{w}_2^{h,h}) + (1-\overline{a}_2) R_l \right) \right. \\ &\quad \left. + (1-\overline{a}_1) \left(R_l + \overline{a}_2 (R_h - \bar{w}_2^{l,h}) + (1-\overline{a}_2) R_l \right) \right] \\ &\quad + (1-q_0) \left[\lambda (V - \bar{w}_g) + (1-\lambda) R_l + R_l \right]. \end{aligned} \tag{28}$$

Under the lenient regime, the shareholders' expected cash-flows are:

$$\begin{aligned} E_L(R) &= q_0 \left[\overline{a}_1 \left(R_h - w_1^h + \overline{a}_2 (R_h - w_2^{h,h}) + (1-\overline{a}_2) R_l \right) \right. \\ &\quad \left. + (1-\overline{a}_1) \left(R_l + \overline{a}_2 (R_h - w_2^{l,h}) + (1-\overline{a}_2) R_l \right) \right] \\ &\quad + (1-q_0) \left(R_l + R_l \right). \end{aligned} \tag{29}$$

And under the tough regime:

$$\begin{aligned} E_T(R) &= q_0 \left[\overline{a}_1 \left(R_h - \widehat{w}_1^h + \overline{a}_2 (R_h - \widehat{w}_2^{h,h}) + (1-\overline{a}_2) R_l \right) \right. \\ &\quad \left. + (1-\overline{a}_1) \left(R_l + \overline{a}_2 (R_h - \widehat{w}_2^{l,h}) + (1-\overline{a}_2) R_l \right) \right] \\ &\quad + (1-q_0) \left(R_l + R_l \right). \end{aligned} \tag{30}$$

When replacing the wages by their value in the different regimes, tedious but straightforward calculations give:

$$\begin{aligned} E_G(R) &\geq E_S(R) \Leftrightarrow \\ \overline{a}_2 [f_2(\widetilde{q}^G) - f_2(\widetilde{q}^{l,l})] &\geq \overline{a}_1 c \left[\frac{\overline{a}_2}{p^{\varnothing} \Delta a_2} - 1 \right] \end{aligned} \tag{31}$$

$$\begin{aligned} E_L(R) &\geq E_T(R) \Leftrightarrow \\ \overline{a}_2 [f_2(q^G) - f_2(q^{l,l})] &\geq \overline{a}_1 c \left[\frac{\overline{a}_2}{p^{\varnothing} \Delta a_2} - 1 \right] - (1-\overline{a}_1) \overline{a}_2 \frac{c}{\Delta a_2} \left(\frac{1}{p^l} - \frac{1}{p^{\varnothing}} \right) \end{aligned} \tag{32}$$

Intuitively, equations (31) and (32) will hold when reputation concerns are important: in that case, the shareholders will be better off retaining the manager even after bad

performance to rely on cheap implicit incentives. Note that the LHS of (32) is larger than the LHS of (31), and the RHS of (32) is smaller than the RHS of (31), which implies that when the golden parachute will be preferred to the severance payment regime, the lenient regime will also dominate the tough regime.

$$\begin{aligned} E_G(R) &\geq E_L(R) \Leftrightarrow \\ \tfrac{(1-q_0)}{q_0}\lambda[V-R_l-(f_2(\widetilde{q}^G)-f_2(\widetilde{q}^{l,l}))] &\geq (\overline{a}_1+\overline{a}_2(1-\overline{a}_1))(f(\widetilde{q}^{l,l})-f(q^{l,l})) \end{aligned} \tag{33}$$

which is exactly the condition numbered equation (19) in the text page 20 if one denotes: $f(\widetilde{q}^{l,l}) - f(q^{l,l}) \equiv \Delta f(\widetilde{q}^{l,l}, q^{l,l})$.

$$\begin{aligned} E_S(R) &\geq E_L(R) \Leftrightarrow \\ \tfrac{(1-q_0)}{q_0}\lambda[V-R_l-(f_2(\widetilde{q}^G)-f_2(\widetilde{q}^{l,l}))] &\geq \overline{a}_1(1-\overline{a}_2)(f(\widetilde{q}^{l,l})-f(q^{l,l}))+\overline{a}_2(f(q^G)-f(q^{l,l}))-\overline{a}_1 c\Big[\tfrac{\overline{a}_2}{p^{\varnothing}\Delta a_2}-1\Big] \end{aligned} \tag{34}$$

$$\begin{aligned} E_S(R) &\geq E_T(R) \Leftrightarrow \\ \tfrac{(1-q_0)}{q_0}\lambda[V-R_l-(f_2(\widetilde{q}^G)-f_2(\widetilde{q}^{l,l}))] &\geq \overline{a}_1(1-\overline{a}_2)(f(\widetilde{q}^{l,l})-f(q^{l,l}))-(1-\overline{a}_1)\overline{a}_2\tfrac{c}{\Delta a_2}\Big(\tfrac{1}{p^l}-\tfrac{1}{p^{\varnothing}}\Big) \end{aligned} \tag{35}$$

Last, we have:

$$\begin{aligned} E_G(R) &\geq E_T(R) \Leftrightarrow \\ \tfrac{(1-q_0)}{q_0}\lambda[V-R_l-(f_2(\widetilde{q}^G)-f_2(\widetilde{q}^{l,l}))] &\geq \\ \overline{a}_1(1-\overline{a}_2)(f(\widetilde{q}^{l,l})-f(q^{l,l}))-\overline{a}_2(f(\widetilde{q}^G)-f(\widetilde{q}^{l,l}))-c\Big[\tfrac{(1-\overline{a}_1)\overline{a}_2}{\Delta a_2}\Big(\tfrac{1}{p^l}-\tfrac{1}{p^{\varnothing}}\Big)+\overline{a}_1\Big] \end{aligned} \tag{36}$$

One states easily that if $f(q_t^i) = 0$, that is, if there are no reputation concerns, equation (31) does not hold, while equations (34) and (35) do.

■

Proof of Proposition 5

Suppose that reputation concerns are low in the sense that equation (31) does not hold. Then, the severance payment regime is preferred to the two uncontingent contracts iff equations (34) and (35) hold, that is iff:

$$\begin{aligned} &\frac{(1-q_0)}{q_0}\lambda[V-R_l-(f_2(\widetilde{q}^G)-f_2(\widetilde{q}^{l,l}))] \geq \overline{a}_1(1-\overline{a}_2)\Delta f(\widetilde{q}^{l,l}, q \\ &+\max\Big[-\overline{a}_2(1-\overline{a}_1)\tfrac{c}{\Delta a_2}\Big(\tfrac{1}{p^l}-\tfrac{1}{p^{\varnothing}}\Big);\overline{a}_2(f_2(q^G)-f_2(q^{l,l}))-\overline{a}_1 c\Big(\tfrac{\overline{a}_2}{p^{\varnothing}\Delta a_2}-1\Big)\Big], \end{aligned}$$

which is exactly equation (17) in the text page 19.

When equation (17) does not hold, the lenient regime is preferred to the tough regime iff reputation concerns are sufficient high in the sense that equation (32) holds, otherwise the tough regime is preferred.

■

Proof of Proposition 6

Suppose now that reputation concerns are high in the sense that equation (31) holds. We already stated that this implies that the lenient regime dominates the tough regime (equation (32) holds). Thus the choice is between the golden parachute and the lenient regime. Shareholders prefer to propose golden parachutes iff equation (33) holds, while they adopt a lenient policy iff it does not hold. Whether golden parachutes are desirable or not depends on the relative efficiency of the liquidation decision (measured by the difference $V - R_l$).

■

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