Managerial Compensation Schemes with Informed Principals

THOMAS VON UNGERN-STERNBERG*

1. INTRODUCTION

Starting point of this paper is the following simple observation: When a manager negotiates his employment contract, he usually has not started on his job. This implies that he is frequently not particularly well informed about the characteristics of the department (or company) he is supposed to manage. There is thus a basic asymmetry of information between the employer (the owner of the company or her representative) and the employee (the manager). The employer knows more about her company (or the department) than the employee. In particular she should have better information about the future expected profitability of the company.

This informational asymmetry is usually ignored in the standard principal agent literature used to study manager’s compensation schemes, where the only informational asymmetry is that the agent (employee) can observe his own effort, while the principal (employer) cannot. Such an assumption may be a reasonable approximation for certain settings such as the literature on share cropping. When it comes to the negotiations between a (new) manager and a firm, the first kind of informational asymmetry may be just as relevant.

The purpose of this paper is thus to develop a simple model centered around the following trade-off: An informed principal wishes to offer an incentive contract to a less informed agent. The reason for offering an incentive contract is that the agent has a standard moral hazard problem. However the agent realizes that he is negotiating with an informed principal. He tries to learn something about the principal’s private information from the contract he is offered. The contract thus serves as a signal (as defined by Spence1) to the agent. The main result one derives from this kind of model is quite intuitive. High profit principals have an incentive to signal this fact to the agents. They do this by offering them a contract with a (relatively) high fixed salary and a (relatively) low profit participation. The reason why low profit principals do not necessarily like imitating the high profit principals in this strategy is straightforward: The cost of increasing the fixed wage is the same for all types of principals. The expected savings of reducing the profit participation is greater for the high profit principals.

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In most signaling models there can be two types of equilibria: pooling equilibria and separating equilibria. In the pooling equilibria the low profit principals would imitate the high profit ones. The advantage for the low profit principals of imitating the high profit principals, is that the agents who end up working for the low profit principals earn a low income. (They accepted the job only because there was a positive probability of the principal being a high profit type). It will be shown that in the model studied here there can be no pooling equilibria.

In the separating equilibria the low profit firms offer high profit participations, and vice-versa. The central result of our model ist thus as follows: Even if everybody is totally risk neutral, one does not observe (only) managerial contracts where the managers are given high incentive payments: a firm which offers high incentive payments signals to the agents, that it is also a low profit type. The central explanation for firms offering insufficient incentives to their managers in this model is not risk-aversion (as in the standard principal agent models), but informed principals.

To relate the present paper to the existing literature, note that there does exist a literature on “informed principal” models, in particular two papers by Maskin and Tirole. However, in those papers it is assumed that all actions are observable, i.e. they abstract from all moral hazard problems. It is precisely the interactions between the signaling function of managerial contracts and the moral hazard problem, that plays the central role in the present paper.

The paper closest to the one studied here is Beaudry (1994). He also studies the problem of an informed employer offering an incentive contract to new employees. The nature of the informational asymmetry he focuses on is, however, different. In his paper uncertainty is about the marginal productivity of the employee’s effort. In our model the driving force is asymmetric information about the firm’s expected profits. Furthermore, in Beaudry’s model agents can be offered only an absolute bonus and not a relative profit participation. There is one essential similarity in the results. In his models it is the firms with a high marginal product of effort who offer the contracts with the low bonus payment. In our model it will be the firms with the higher expected profits who offer the lower profit participation. The models do, however also exhibit some striking differences. In particular, in Beaudry’s paper the principals cannot extract all the agent’s surplus. In our model the agents are never able to obtain more than their reservation utility.

The basic model we wish to study can be understood as a four-stage game: In the first stage nature chooses what “type” a company is, a “high profit” or a “low profit”. The principal knows her type, the agents do not know which principal is of which type. They know only the fraction of low profit and high profit types.

In the second stage the principals offer the agents a contract. It is assumed that they wish to employ only one agent, and that they can choose among a large number of identical agents, all of which have reservation utility $U^*$. The contracts the principals can offer the agents are limited to a simple linear structure. The principal offers the agent a

fixed salary plus a profit participation. This restriction is motivated by the fact, that most real world incentives schemes have simple linear structures.

In the third stage the agents decide to accept or refuse the contract and determine their amount of effort.

The realized outcome profits of a firm depend not only on the principal’s type and the agent's effort, but also on the state of nature. This means that the agent’s effort cannot be deduced by just looking at the firm's performance. In the final stage the manager performs the job, the state of nature is determined and the contracts are executed.

In the standard principal agent literature one of the key ingredients determining the structure of the optimal contract is the agent's degree of risk aversion. Indeed, the only reason why the agent does not get saddled with all the risk is his risk aversion. In that literature a risk neutral agent would become a residual claimant to the company. To highlight the difference between our model and the more traditional literature, I will assume throughout, that the agents are risk neutral. Any deviation from the pure incentive contract can thus be immediately attributed to the signaling role the contract plays in a world with informed principals.

The rest of the paper is organized as follows: Section II sets out the assumptions of the model. Section III computes the equilibria of the model. Section IV discusses the empirical relevance of the analysis.

2. THE BASIC MODEL

The first stage:

Principals (companies) can be of two types, high profit types indexed $H$ and low profit types indexed $L$. Whether a principal is of type $H$ or type $L$ is determined by nature in the first stage of the game. The fraction of high profit types is denoted $q$, so the fraction of low profit types is $(1 - q)$. Each principal knows whether she is of type $H$ or type $L$. The agents do not possess this information. They know only that there is a fraction $q$ of type $H$ and a fraction $(1 - q)$ of type $L$ agents. We thus have a model with informed principals.

The second stage:

Each principal (firm) wishes to employ only one agent (manager). The principals can choose among a large number of agents with reservation utility $U^*$. We assume throughout that the agents' reservation utility is sufficiently low, so the principals will always employ one agent. ($U^* = 0$ would be a sufficient condition for this always to be the case). The agents are risk neutral, and their marginal disutility of effort is increasing. Their utility function is of the form:

$$U = \bar{Y} - \frac{e^2}{2}$$  \hspace{1cm} (1)
Where $\bar{Y}$ is expected income and $e$ is the level of effort supplied. Working with a specific utility function has the advantage of allowing us to explicitly compute most of the results.

We restrict the principal's incentive scheme to simple linear contracts which consist of two components: A fixed salary denoted $w$ and share of gross profit denoted $\alpha P$. We distinguish between a firm's gross profit $P$ and her net profit $\Pi$. (Expected) net profits are equal to (expected) gross profits minus the total payment to the agent, i.e.

$$\Pi \equiv P - \bar{Y}$$

(2)

The agent's profit participation is calculated as a fraction of the principal's gross profit, i.e. we have

$$Y = w + \alpha P$$

(3)

When a principal chooses values of $w$ and $\alpha$ to offer the agents, this has three effects:

First any increase in $w$ or $\alpha$ will ceteris paribus increase the agent's expected income and reduce the principal's expected net profit.

Second, an increase in the agent's share of profit $\alpha$ will induce the agent to provide more effort $e$.

And finally the agent will try to use the combination of $w$ and $\alpha$ offered by the principal to learn something about the principal's type. The combination $(w, \alpha)$ chosen by the principal can thus be usefully interpreted as a signal the principal gives the agent.

It is well known that signaling models usually have a large number of equilibria. Many authors reduce this plethora of equilibria by concentrating on those equilibria which maximize the expected profits (or utility) of the $H$-types. Cho and Kreps\(^3\) refer to this approach as the "Intuitive Criterion". This paper adopts the same approach, i.e. it concentrates on those equilibria which maximize the expected profits of high profit principals. This approach seems to me to be particularly relevant for the kind of setting we are interested in. Since there is direct communication between the principal and the agent in the course of employment negotiations, the principal can actually explain to the agent why she chooses one type of contract rather than another. The approach is thus much more easily justified in the present context than, say, in signaling models of advertising.\(^4\)

Each principal's aim is thus to choose $w$ and $\alpha$ so as to maximize her expected net profit, given the values chosen by the other principals. The precise algebraic formulation of this problem will, of course, depend on whether we end up having a pooling or separating equilibrium.

In the third stage the agents will accept (or refuse) a contract offered by one of the principals and decide to provide a certain amount of effort \( e \). Nature chooses the realization of the state of nature \( s \in [\bar{s}, s] \). The agent has to decide on his amount of effort before knowing which state of the world will be realized. He knows only that the probability density of state of nature \( s \) occurring is given by some function \( f(s) \).

For simplicity we assume that the marginal productivity of effort is the same in both types of firms. Moreover we normalize the units of measurement of effort such that the expected marginal productivity of effort is constant equal to \( k \).

The gross profit of a firm of type \( i \) can thus be written\(^5\)

\[
P_i(e) = \bar{P}_i + ke + \varepsilon \quad i = L, H
\]

\( \varepsilon \) is a random variable with mean zero. \( \bar{P}_i \) has two interpretations: First, it is the profit the principal would obtain even without employing a manager (the principal's outside option), and second it is the expected gross profit for a principal of type \( i \), if the agent supplies minimal effort (normalized to equal zero). When it is convenient we will sometimes refer to a principal as being of type \( \bar{P}_i \). The difference in expected gross profits between a type \( H \) and a type \( L \) principal for any given level of effort \( e \) is denoted

\[
\Delta P \equiv P_H(e) - P_L(e) \equiv \bar{P}_H - \bar{P}_L
\]

In terms of the actual realizations equation (5) can be rewritten (lower case \( p \)'s denote realizations, upper case \( P \)'s are expected values):

\[
P_H(e) \equiv \int f(s)p_H(e, s) ds = \int f(s)p_L(e, s) ds + \Delta P \equiv P_L(e) + \Delta P
\]

Most of the time we shall be working in terms of expected values. Equation (6) is written down explicitly only to emphasise that behind these expected values are realisations, whose variances may be quite large. It is for this reason, that the principal cannot observe the agent's effort, and it is also for this reason that it may be quite difficult for an agent to determine the principal's type from her past history.

Given that the agent has accepted to work for a principal, he will fix his level of effort so as to maximize his expected utility. The standard first order condition yields:

\[
e = \alpha k
\]

i.e. effort increases linearly with profit participation.

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5. This specification implies that a manager making zero effort has zero productivity. The model can easily be adapted, if one prefers the assumption that even lazy managers have a positive productivity.
For later purposes it is useful to remember that the increase in gross profits due to the agent's effort is equal to \( \alpha^2 k \) [substitute (7) into (4)], and the cost of effort is equal to \( (\alpha k)^2 / 2 \) [substitute (7) into (1)]. The net surplus generated by the agent's effort is thus equal to

\[
S(\alpha) = \alpha k^2 - (\alpha k)^2 / 2 \tag{8}
\]

The fourth stage:

In the fourth stage the agent produces his level of effort. The principals and agents obtain their pay-offs as determined by the state of the world that was realized and the employment contract they signed.

The equilibrium concept used is that of Perfect Bayesian Equilibrium. The game is solved by analyzing the last stages first. Since we are in presence of a signaling game, we have to distinguish between the case of pooling equilibria and separating equilibria. We shall start off with the separating equilibria.

3. EQUILIBRIA

3.1. Separating equilibria

In the case of a separating equilibrium the strategy chosen by the \( L \)-type principals is straightforward. Since agents are risk-neutral, they will make their agents residual claimants to the firm i.e. they will set \( \alpha = 1 \). They will then set the wage so that the agent's expected utility is equal to \( U^* \).

Formally the \( L \)-type principal's problem is to

\[
\max_{w_L, \alpha_L} \Pi_L = (1 - \alpha_L) [\bar{P}_L + ke] - w_L \tag{9}
\]

s.t.

\[
e = \alpha_L k \tag{7}
\]

\[
\alpha_L(\bar{P}_L + ke) + w_L - e^2 / 2 \geq U^* \tag{10}
\]

The first order conditions yield \( \alpha_L = 1 \). Total gross profits thus equal \( P_L = \bar{P}_L + k^2 \). The cost of effort is equal to \( k^2 / 2 \). The fixed "salary" is equal to

\[
w_L = U^* - \bar{P}_L - k^2 / 2 \tag{10}
\]

The principal would not, of course, employ the agent if this meant that her profit would fall below \( \bar{P}_L \). The "salary" in (10) must be negative. Since the agent gets all the profit,
the principal obtains her income from the fixed payment she gets from the agent. The pure incentive contract is thus equivalent to selling the firm to the agent. The negative salary is equivalent to the selling price of the firm.

The \( L \)-type principal’s profit is equal to

\[
\Pi_L = \bar{P}_L + k^2/2 - U^* \tag{11}
\]

For the \( H \)-type principals the problem is slightly more complicated. When choosing \( \alpha_H \) and \( w_H \) the principal must take into account not only the agent’s participation constraint (9) and individual rationality constraint (7), but also see to it that the \( L \)-types have no incentive to disguise themselves as \( H \)-types.

In a separating equilibrium an \( H \)-types profit maximization problem is thus to

\[
\max_{w_H, \alpha_H} \Pi_H = (1 - \alpha_H)[\bar{P}_H + ke] - w_H \tag{12}
\]

s. t.

\[
e = \alpha_H k \tag{7}
\]

\[
\alpha_H(\bar{P}_H + ke) + w_H - e^2/2 \geq U^* \tag{13}
\]

\[
(1 - \alpha_H)(\bar{P}_L + ke) - w_H \leq \bar{P}_L + k^2/2 - U^* \tag{14}
\]

The reader can easily check that all the constraints must be binding. In particular, if constraint (14) were not binding, the \( H \)-type producer would also choose the first best contract and set \( \alpha = 1 \), but then it would always be in the \( L \)-type principal’s interest to disguise themselves as \( H \)-types, i.e. we would not have a separating equilibrium, and the \( H \)-type’s profits would be equal to the \( L \)-type’s profits.

There are 3 endogenous variables and 3 (non-linear) constraints. Replacing the inequalities in the system of equations (7), (13) and (14) and solving yields:

\[
\alpha_H/(1 + \alpha_H^2) = k^2/2(\Delta P + k^2) = [2(\Delta P/k^2 + 1)]^{-1} \tag{15}
\]

The two solutions are:

\[
\alpha^1_H = \frac{1}{k^2} \left( k^2 + \Delta P - \sqrt{\Delta P(2k^2 + \Delta P)} \right) < 1 \tag{15'}
\]

\[
\alpha^2_H = \frac{1}{k^2} \left( k^2 + \Delta P + \sqrt{\Delta P(2k^2 + \Delta P)} \right) > 1 \tag{15''}
\]

6. and that \( H \)-types have no incentive to set \( \alpha = 1 \) and mimick being an \( L \)-type.
The $H$-type principal has two ways of deviating from the optimal incentive contract such that the $L$-type principal will not imitate her. The first is to reduce $\alpha$, the second is to increase $\alpha$. A reduction in requires an increase in $w$ to compensate, an increase in $\alpha$ would allow a reduction in $w$. The cost of an increase in $w$ is the same for both types of principals, the cost of paying out a given fraction of the profits to the agent is higher to the $H$-type principals. Choosing $\alpha_H < 1$ is obviously the more profitable solution for the $H$-type principals.

To interpret equation (15') note that as $\Delta P$ tends to zero $\alpha_H$ tends towards one. The incentive for $H$-type principals to deviate from the first best contract increases with the expected profit differential.

$\alpha_H$ is also an increasing function of $k$. If the marginal product of effort is large, the $H$-type principals obviously do not want to deviate far from the optimal incentive contract ($\alpha = 1$). Fortunately for them, they do not have to do so, because even a small reduction in $k$ is sufficient to dissuade the $L$-type principals from imitating them.

The essential point to note is that the $H$-type principals will choose a level of profit participation lower than unity in spite of the fact that agents are risk neutral. This loss in efficiency is the price they have to pay for distinguishing themselves from the $L$-types.

3.2. Pooling equilibria

This section is concerned with the characterization of potential pooling equilibria. We will show that there cannot exist a pooling equilibria which satisfies the Intuitive Criterion in this model. To do so we proceed as follows: We first give the characteristics of a potential pooling equilibrium (part A). We then show that the $L$-type principals can sometimes profitably deviate from the pooling equilibrium, and that the $H$-type principals can always deviate from the pooling equilibrium (part B). This establishes that there cannot exist a pooling equilibrium.

a) Characterizing the pooling equilibrium

When the agents accept a job in a pooling equilibrium they know that they have a chance of only $q$ of working for an $H$-type and a chance of $(1 - q)$ of working for an $L$-type.

Their participation constraint can thus be written:

$$\alpha_P[q \bar{P}_H + (1 - q) \bar{P}_L] - \frac{e^2}{2} + w_P \geq U^*$$

Their individual rationality constraint once again tells us that they will determine their level of effort according to equation (7).

Since we concentrate on those potential equilibria which satisfy the Intuitive Criter-
ion, we study only those equilibrium candidates which maximise the $H$-types profits. The $H$-type principals will set the fixed salary $w_P$ and the profit share $\alpha_P$ with the aim of:

$$\max_{w_P, \alpha_P} \Pi_H = (1 - \alpha_P)[P_H + ke] - w_P$$

s.t.

$$e = \alpha_P k$$

$$\alpha_P[qP_H + (1 - q)P_L] - e^2/2 + w_P \geq U^*$$

The first order conditions yield:

$$\alpha_P = 1 - [(1 - q)(\Delta P)]/k^2 \iff (1 - \alpha_P)/(1 - q) = \Delta P/k^2$$

Once again one notes that $\alpha_P$ is a decreasing function of $\Delta P$. If $\Delta P$ is close to zero, $\alpha_P$ is close to 1. Unsurprisingly the rate at which $\alpha_P$ decreases with $\Delta P$ depends on $k$. If $k$ is large, i.e. if the marginal product of effort is large, then the $H$-type principals will decrease $\alpha_P$ only slowly as $\Delta P$ increases. Finally one notes that the pooling contract chosen by the $H$-type principals depends on the fraction of type $L$ principals. The greater is $(1 - q)$, i.e. the greater is the fraction of type $L$ principals, the lower is the agents' profit participation $\alpha_P$ (and the higher their fixed salary $w_P$).

b) Deviation strategies

In the preceding section we have computed and discussed the properties of a pooling equilibrium, on the assumption that such an equilibrium does exist. We will now check, whether the different types of principals would have an incentive to deviate from such an equilibrium, i.e. we study, whether one type of principal might not try to credibly reveal her type to the agents. We start off with the $L$-type principals.

ba) Low profit principals

For $L$-type principals the optimal strategy, if they do wish to separate themselves form the $H$-type $H$ principals, is to offer the agents the first best incentive contract, i.e. set $\alpha$ equal to one and then set the agents utility level to $U^*$ by an appropriate choice of the wage rate $w$.

Equation (11) tells us that that this would yield the $L$-type principals an expected profit of:

$$\Pi_L = \tilde{P}_L + k^2/2 - U^*$$
They are therefore willing to participate in the pooling equilibrium only as long as their expected profits are at least as great, i.e. as long as:

$$P_L + k^2\alpha_P - (k\alpha_P)^2/2 - q\alpha_P(P_H - P_L) - U^* > P_L + k^2/2 - U^* .$$  

Substituting (18) and simplifying we obtain:

$$q/(1 - q^2) > \Delta P/(2k^2)$$  

Equation (20) states, that the L-type producers will participate in a pooling equilibrium only if the proportion of H-type principals is sufficiently large. This is due to the fact, that an increase in the proportion of H-type principals reduces the fixed salary that has to be paid for any given level of $\alpha$.

More surprisingly, for any given level of $q$ the L-type principals are willing to participate in the pooling equilibrium only if the profit differential is sufficiently low. This may be explained by the fact, that a high profit differential means that the H-type principals will choose a low level of profit participation $\alpha$ and this decreases expected gross profits.

To summarize, one might have expected an increase in the fraction of H-type principals to have a similar effect as an increase in the profit differential. The opposite is true. This can be explained by the fact that there are two opposing forces at work. On the one hand high profit differentials and a high share of H-type principals means that the expected wage bill for the L-type principals grows smaller. On the other hand high profit differentials also imply that the H-type principals offer the agents less incentives to provide work effort. The comparative statics results are determined by these two opposing forces.

**bb) High profit principals**

Let us now turn to the H-type principals. If they wish to deviate from the pooling equilibrium, they have to do so in such a way, that the agents immediately recognize that they are not L-type principals. Their deviation must therefore be such, that the L-type principals’ net profits (if they copy the deviating strategy) are lower than in the pooling equilibrium. We know that in the deviation strategy the H-types must choose a lower participation level $\alpha$ and compensate this with an appropriately higher salary.

Denote by $w_D$ and $\alpha_D$ the fixed salary and profit participation the H-type principals would offer in a hypothetical deviation. $w_D$ and $\alpha_D$ must satisfy two conditions:

First the H-type principals must have an incentive to deviate. This yields

$$(1 - \alpha_D)(\bar{P}_H + \alpha_D k^2) - w_D > (1 - \alpha_P)(\bar{P}_H + \alpha_P k^2) - w_P$$  

(21)
Second no $L$-type principal must want to imitate him, i.e. the deviating principal must be immediately recognizable as an $H$-type. This gives us:

$$(1 - \alpha_D)(\bar{P}_L + \alpha_D k^2) - w_D \leq (1 - \alpha_P)(\bar{P}_L + \alpha_P k^2) - w_P$$  \hspace{1cm} (22)$$

Condition (22) will obviously be binding, so one can replace the inequality by a strict equality.

After some simple manipulations (21) reduces to:

$$\alpha_D k^2 - (\alpha_D k)^2/2 > \alpha_P k^2 - (\alpha_P k)^2/2 - \alpha_P (1 - q)(\Delta P)$$  \hspace{1cm} (23)$$

Equation (23) is easy to interpret: It simply states that with the deviating strategy the net surplus generated by the agent's effort must be greater than this net surplus generated in the pooling equilibrium minus the excess salary the $H$-type principals have to pay (in the pooling equilibrium) because they cannot be distinguished from the $L$-type principals.

Similarly equation (22) reduces to:

$$\alpha_D k^2 - (\alpha_D k)^2/2 = \alpha_P k^2 - (\alpha_P k)^2/2 - (\alpha_D - q\alpha_D)(\Delta P)$$  \hspace{1cm} (24)$$

Equation (24) again is easy to interpret: It tells us that the net surplus with the deviating strategy must be so small, that the $L$-types' net profits decrease, in spite of the fact that with the deviating strategy he is regarded by the agents as being an $H$-type.

One notes first of all, that equation (23) is always satisfied if equation (24) holds. We can therefore concentrate on the analysis of (24). Rewrite equation (24) in the form:

$$\alpha_D k^2 - (\alpha_D k)^2/2 + \alpha_D (\Delta P) = \alpha_P k^2 - (\alpha_P k)^2/2 + q\alpha_P (\Delta P)$$  \hspace{1cm} (24')$$

We wish to establish that there always exists a value of $\alpha_D$ which satisfies (24'). To do so, note that if $\alpha_D$ approaches zero, the LHS must always be smaller than the RHS. Similarly, if $\alpha_D$ approaches $\alpha_P$, the LHS must be greater than the RHS (since $0 < q < 1$). As the LHS is a continuous function of $\alpha_D$, there must always exist a value of $\alpha_D$ which satisfies (24'). We have thus established that there always exists a possibility for the $H$-types to profitably deviate from the hypothetical pooling equilibrium. There cannot exist a pooling equilibrium in which the $H$ type principals maximize their expected profits, i.e. a pooling equilibrium which satisfies the Intuitive Criterion.

### 3.3. Generalisation

In the separating equilibrium analysed in section III.1 the $L$-type principals offered their managers the strongest possible incentive contract ($\alpha = 1$). In practice such contracts are very rare. There are two simple ways of modifying the model to obtain more realistic
results. The first is to introduce more than two types of principals. It will only be the "lowest" type of principal, who will offer this strongest incentive contract. If one works with a continuum of principals, the mass of principals who offer the strongest incentive contract would be zero. Alternatively, one could increase the realism of the model by working with risk-averse agents. This would give even the lowest type principals to an incentive to bear part of the cost of uncertainty themselves.

4. CONCLUSION

The purpose of our analysis was to show how asymmetric information about a company's expected profitability may influence the kind of employment contracts different types of firms offer their new managers. High profit firms cannot offer high profit participations combined with a very low fixed salary. Their future managers will be afraid that the company knows its future profit outlook to be quite bleak, and that their expected earnings will in fact be quite low in spite of the substantial profit participation. High profit firms are aware of this. In equilibrium they offer their future managers high fixed salaries and low profit participations (incentive payments) while the low profit firms pay low fixed salaries but high profit related bonuses.

One may wonder about the empirical relevance about this kind of effect. I would argue that it may be quite substantial. First of all, the strict laws on insider trading indicate, that there may be substantial informational asymmetries between the insiders in a company and new employees. I see no reason why this inside information should not also be used to offer a new manager a contract that is in fact quite unattractive. The same kind of argument will hold if the profit participation is calculated as a function of the profits of a particular division or department of a company. In that case information available on the stock markets is even less revealing (whole companies are traded, divisions are not).

An alternative way to think about the empirical relevance of the problems analyzed here is to think about the kinds of jobs, where profit participations tend to be particularly important. It is widely believed that the employees operating on financial markets are paid a large fraction of their income in the form of profit participations. As a result their income is also highly variable. Explaining this by arguing that these people are particularly risk-neutral would seem to be a rather ad hoc. The present paper suggests a simple alternative explanation. The performance of people operating on financial markets depends essentially on their own "skills", and they can typically work in fairly small groups. Given the nature of the job, the company owners can have only very limited inside information about the groups expected profitability. In the absence of such asymmetric information it is not surprising that incentive payments and profit participations play a particularly important role.

REFERENCES


SUMMARY

We study managerial compensation schemes for situations, where the current management knows more about the company’s expected profitability than the new employee. When a manager is offered a contract with only a low fixed salary but a high profit participation, he is afraid that the company’s profit outlook may be quite bad. Employers are aware of this. In equilibrium high profit employers offer their new managers high fixed salaries and low profit participations. They thereby credibly signal to their new managers, that they are high profit types. Low profit firms on the other hand will offer contracts with high profit participations and low fixed wages. One can thus easily explain the prevalence of contracts with high fixed salaries, without having to appeal to employee risk aversion.

Nous étudions des mécanismes incitatifs pour des managers dans des situations où la direction connaît mieux la situation de l'entreprise que le manager qui va être engagé. Si elle offre au nouveau manager un contrat avec un salaire fixe bas mais une participation aux bénéfices importante, il pourrait en déduire que la profitabilité de l'entreprise sera faible. La direction de l'entreprise anticipe cette réaction. En équilibre les entreprises profitables offrent à leurs managers des salaires fixes importants et des participations aux bénéfices faibles. Ils signalent ainsi qu'ils sont profitables. Les entreprises moins profitables offrent des contrats avec des salaires fixes plus faibles mais des participations aux bénéfices plus importants. Ce modèle permet d'expliquer pourquoi on observe si souvent des contrats avec des salaires fixes importants, sans faire appel à l'argument de l'aversion contre le risque.