

# The Effective Design of Managerial Incentive Systems: Combining Theoretical Principles and Practical Trade-offs

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## Abstract

This article describes how theoretical developments in the fields of agency and contract economics may be of great inspiration for the practical design of incentive- and performance-based compensation systems. Principles and stylized facts arising from the analysis of the principal-agent framework and the economic theory of teams are presented by means of trade-offs that human resource practitioners should take into account when tailoring compensation systems to the specific needs of a particular organization.

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## 1 Introduction

The issue of effectively designing incentives for managers has considerably gained attention in the past years both within scholars of organizational economics and among human resource practitioners.

As pointed some years ago by Hölmstrom [1987],

“It is rare that economic theorists . . . become excited about the same subject at the same time as “practitioners”. It could be a happy coincidence, but the fact is that incentive issues are presently high on the agenda both in economic theory and in practice”.

Despite this common interest, to our view, cross-fertilization efforts between economic theorists and the community of practitioners still remain quite

unsatisfactory. This article draws upon the economic literature on incentive design and describes its relevance for the problem of effectively designing and setting incentives in real organizations. Our approach will mainly consist in discussing aspects of practical incentives design from the viewpoint of the contract and agency theory framework and to suggest to what extent these organizational economics theories can bring useful insights and hints for compensation and HR (human resource) practitioners and, more generally, for everyone interested in the actual design of incentive compensation plans.

It is far for the aims of this article to give a complete survey of the large body of organizational economics literature on compensation. As a matter of fact, many interesting topics different from incentive provision, such as human capital acquisition, bargaining problems, vertical integration issues, property and control rights, incomplete contracting, although being related to our topic will not be discussed here.<sup>1</sup> Equally disregarded in this survey will be those studies supporting the existence of components and drivers of motivation different from economic incentives, such as empowerment, job enrichment, and many other nonmonetary source of rewards.<sup>2</sup> Thus, the article will focus on issues of managerial incentive provision and on will suggest how HR practitioners may effectively make use of the stylized facts of agency theory as guiding principles for the design of components and determinants of managerial incentive pay schemes.<sup>3</sup>

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<sup>1</sup>See, for instance, Hart and Moore [1989] and Grossman and Hart [1986] for fundamental reference on control rights literature.

<sup>2</sup>A useful introduction to these topics can be found, for instance, in Leavitt [1978] and Simon [1957]).

<sup>3</sup>This article builds largely on theoretical evidence about agency models (see, for in-

The present article is organized as follows: Sections 2 and 2.2 introduce the basic concepts of agency theory and Section 3 gives a collection of practical design criteria suggested by agency theory. Finally, Section 4 suggests some concluding remarks on the use of theoretical prescriptions for the practical design of incentives in real organizations.

## 2 The theoretical framework on incentive provision

### 2.1 The agency relationship

The fundamental question that inspires the literature on contract design is the following: how can we make another person acting on our behalf and performing the actions that we want? Clearly, this question has a neat parallel in the field of HR practitioners: how to design a compensation plan so that managers would exert higher levels of effort on the job and would pursue those activities which are in the full interest of my organization?

In terms of agency theory, whenever, for any reason, we depend on someone else's action in order to reach some goal, an *agency relationship* arises.<sup>4</sup> In 

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stance, Arrow [1985], Fama [1980], Grossman and Hart [1983], Hart and Hölmstrom [1987], Hölmstrom and Tirole [1987], Myerson [1982], Pratt and Zeckhauser [1985], Ross [1973], Levinthal [1988]. It is worth to mention that many insights for the design of incentives may be found also, in the empirical [Prendergast, 1999, Lazear, 1995, 1997, Gibbons and Waldman, 1999, Malcomson, 1999] and in the experimental literature [Rossi, 1999, Gächter and Fehr, 1999] on incentive pay.

<sup>4</sup>The convenience to delegate to someone else the fulfillment of one's interest within or-

the following we will define as “principal” the person designing the terms of the relationship between him and another person acting on his behalf, defined as “agent”. Typically, when an agency relationship occurs, the principal’s welfare (outcome) depends on actions and decisions directly undertaken by the agent.

Agency relationships are pervasive in organizations (since each worker at a given hierarchical level is both the agent of his superior and the principal of his subordinates) and more generally in business relationships.

The problem of agency theory is to find a way to induce the agent to act in the interest of the principal, even when some divergence of interests is present. There are many ways that can be employed in order to reach this aim (for instance, brute force and coercion), but the focus of principal–agent theory is in providing non–coercing solutions to the divergence of interests. In other words, the theory suggests that it is possible and convenient for the principal to provide (design) the right incentives for the agent to act in the principal’s interest.

## **2.2 Divergence of interests and monetary incentives**

Organizations typically are made by people characterized by differences in aims and goals. This finding has been theorized long before the development of organizations can be justified employing different explanations; among the ones, the need for specialization and coordination of different tasks and the existence of information asymmetries about which particular patterns of action are more adequate to reach a set of goals [Moe, 1984].

of agency theory<sup>5</sup> but it is within this theoretical framework that it has been possible to formalize in an analytical way the divergence of interests within organizations and to derive formal properties of economic incentives. The basic idea underlying agency theory is that it is possible to set up a system of monetary rewards contingent to actions and/or results (that are in the interest of the principal but under the control of the agent) so to reconcile the difference in aims between the two parties.

Many contributions in organization and HR theory have highlighted the role of many intrinsic devices in fostering motivation and realignment of aims within the organization. These studies highlight in particular that it is possible to promote corporate culture, belief in organizational goals and sense of belonging and loyalty to the organization using motivational instruments such as peer pressure, work ethic, pride in craftsmanship, and so on. On the other side, the focus of agency theory is on the monetary payoffs as a way to realign different aims. For the sake of completeness, it is also true that, more recently, some studies within organizational economics have successfully incorporated in the standard agency framework of reference motivational

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<sup>5</sup>This claim dates back at least to contributions in the economic theory of the firm starting from the 50s, pointing out that, due to the separation from ownership and control, firms may be involved in the (rational) maximization of measures different from profits: Baumol [1958], for instance, suggested revenue as a substitute for profits in maximization efforts undertaken by managers, Williamson [1964] suggested managerial bonuses and discretionary expenses, Marris [1964] suggested growth rates and relative performance measures such as market share. Also, Cyert and March [1972]' behavioral theory of the firm suggested the existence of divergence of interests within organizations and of processes of quasi-negotiation of organizational goals.

devices different from money (in particular peer and group pressure [Barron and Paulson Gjerde, 1997, Kandel and Lazear, 1992], reciprocal behavior, fairness and altruism [Rotemberg, 1994]), enlarging the number of instruments available to the organizational designer for eliciting motivation and influencing workers' goals.<sup>6</sup>

### **3 From theoretical principles to the practical trade-offs of incentive design**

Since we are interested in assessing the practical use of economics-based research on organizational incentives, we should start recognizing that principal-agent models have studied the design of optimal compensation contracts in highly stylized settings, settings somehow just loosely resembling the complexity of those of real organizations. As a matter of fact, much of the research in this field, especially during the early years, pertains to the analysis of optimality conditions of contracts in extremely simplified production environments where a principal has to design the incentives to give out to a single agent which performs a simple production task.

Nevertheless, despite these highly simplified assumptions, agency theory has been able to give strong advice on the design of incentives in real settings because this theory has given a framework to investigate which properties compensation and motivational systems have to meet in order to deal with the many problems that arise within organizations, such as the inability to

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<sup>6</sup>Much of this article will deal with explicit and monetary incentives, even if some references will be made to motivational devices different from monetary payoffs.

measure individual contributions to a group outcome, the opportunistic and self-interest attitude of workers, the existence of differences in disposition towards risk and the existence, inside the principal-agent relationship, of information asymmetries on preferences, ability and other characteristics of the employee, and the nature of those tasks needed to fulfill the organizational goals.

The literature on the provision of incentives has clearly pointed out that there does exist a multitude of motivational instruments – such as piece rates, stock options, discretionary bonuses, promotions and tournament based prizes, profit sharing, efficiency wages, deferred compensation, and many more – that can be used to induce workers to act in the interest of their employers and it has been able to give design advice both on advantages and drawbacks of single incentive devices and on the global “fitness” of a given mix of incentive instruments (evaluated with respect both to corporate aims and exogenous variables such as labor market conditions, workers skills, level of risk, characteristics of the production technology, and so on).

As a consequence, the main finding of the theory, or perhaps the one more useful for a practitioner in the field of incentive design, is the recognition that there does not exist a single contract being able to reconcile all different aims that traditionally are assigned to incentive pay systems. That is, specific contracts and instruments seem to be particularly suited to address different problems of managerial motivation. As a result, agency theory strongly points out to the incentive designer that, when setting up or revising the managerial incentive system, it is of fundamental importance to recognize and rank the existing problems and to concentrate on those that seem to be



of central concern for the specific organization. Whether the primary aim of incentives is to make individual workers perform at their best, exerting the highest possible level of effort on the job, or it is to foster cooperation within teams of workers; whether it is to align risk preferences of workers with those of the organization or it is to signal and discriminate high performers and highly skilled managers inside group of peers; the actual design of incentive schemes will strongly depend on which of these questions it is thought to be the most relevant [Hölmstrom, 1987].

Thus, which use can be made of agency–theory from the perspective of the practical design of incentive schemes? Recalling the arguments introduced at the beginning of this Section, while it is important to recognize that people’s motivation is not only shaped by extrinsic monetary incentives but also by nonmonetary incentives and rewards and by implicit attitude to adhere to corporate goals, it is our opinion that it is possible to make use of the findings of contract theory to highlight many interesting stylized facts regarding the impact on managers’ behavior of the introduction of incentive compensation systems.

Since we have suggested that the choice of the right mix of incentive instruments is contingent to the kind of organizational problems that incentives are supposed to solve, we will, in the following, try to give a collection of design criteria highlighting the main tradeoffs that the designer has to evaluate in the process of setting up the incentive policies of his organization. In particular we will point out that the incentive designer has to take into account the following tradeoffs:

**Risk-sharing: efficiency vs. insurance.** The “strengthness” of incentives in fostering high levels of effort on the job has to be chosen in order to balance motivational power of incentives and costs of compensation plans;

**Asymmetric information: risk shifting vs. information disclosure.**

It has to be evaluated to what extent incentive schemes are intended as vehicles for the truthful disclosure of information asymmetries, and how to balance this aim with the goal of achieving high levels of effort from workers;

**Relative vs. absolute incentives.** Relative evaluation techniques allow to filter common noise and to treat the observed performance values as more informative, but they also affect the attitude of managers towards cooperation and coordination;

**Long- vs. short-term incentives.** Short-term or long-term concerns can be induced in compensation plans both introducing different compensation instruments and different time spans in compensation formulas. In any case the choice has to reflect the time horizon that the organization wants to promote;

**Continuous vs. discrete incentives.** Compensation plans can use a combination of continuous and discrete incentives. The mix of rewarding instruments has to be carefully chosen with respect to specific goals of incentive plans and keeping an eye on the consequences on manager’s behavior;

**Simple vs. complex rules.** Both rules that are too simple or too complex may result in manipulations and in deceptive behavior by managers “gaming” the incentive scheme against the interest of the organization;

**Objective vs. subjective performance measures.** Performance evaluations based on objective criteria can be intertwined with those based on subjective criteria. In highly complex environments and when there are many source of contractual incompleteness the latter ones can help the evaluation of performance, even if their introduction may foster new kind of dysfunctional responses by principals and agents.

Before to concentrate on these tradeoffs, let us briefly discuss the provision of incentives in a perfect world, that is, as we will see, a world where propensities towards risk of principals and agents do not differ.

### **3.1 The ideal payment scheme in a perfect world**

A common assumption underlying agency theory is that it is impossible to directly measure the contribution (effort) of a single agent performing a productive task, since direct observation by the principal may be impossible or too costly to undertake (as in the case of the individual contribution to a team output) or the principal may even fail to recognize which tasks performed by his agent are more close to his interest. Thus, it is generally assumed that the principal, in evaluating the contribution of the agent to his wealth, has to rely on imperfect and indirect measures such as the agent’s performance.

Following Gibbons [1998], let's assume that the agent may take an unobservable action (or effort)  $a$  to produce the output (or performance)  $y = a + \varepsilon$ . The noise term  $\varepsilon$ , inside this production function, can be interpreted either as the measurement error of the principal trying to evaluating the agent's action using an imperfect monitoring technology, or, alternatively, as an external randomness in the market blurring the link between agent's action and agent's performance.<sup>7</sup> The wage contract might be linear as well and equal to  $w = s + by$ , where  $s$  is a fixed salary and  $b$  is the piece rate. Thus, the agent's payoff is  $w - c(a)$ , where  $c(a)$  is the disutility for taking action  $a$  and the principal's payoff, under the nonrestrictive hypothesis that each produced unit is worth 1 monetary unit in the market, is equal to  $y - w$ .

Within this extremely simplified framework it is possible to appreciate the effectiveness of incentives in hierarchical relationships: clearly the piece rate  $b$  has strongly consequences on the agent's motivation: the extreme case of full incentives, when  $b = 1$ , gives the agent full title to the output  $y$  and so enhances greatly his motivation, while also imposing on him all risk (expressed by the variability of the random term  $\varepsilon$ ). On the other extreme, when  $b = 0$ , the compensation plan offers to the agent full insurance but no incentive to produce at all, since, no matter how large his effort, his payoff is fixed and equal to  $s$ .

Thus, under the hypothesis of risk neutrality, it is easy to derive the optimal

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<sup>7</sup>Following the former interpretation, the principal commits misjudgments in observing the action undertaken by the agent while, according to the latter one, the principal directly observes the agent's performance, that is only partial influenced by the agent's action.

conditions of the contract, that state that incentives are fixed to the maximum level  $b = 1$  and in equilibrium the effort the agent puts on the job is so to make marginal costs of effort equal to marginal return from effort. In opposition to what we have just stated, we will see below that the key hypothesis of agency theory is that the agent (manager) is risk averse rather than risk neutral, and that this has strong implications on the shape of compensation plan, since the principal, in providing incentives, has to carefully evaluate a tradeoff between productive efficiency and cost of compensation plan.<sup>8</sup>

### 3.2 Risk-sharing: efficiency vs. insurance

We have just shown that, whenever the only goal of the compensation scheme is to provide the agent with the maximum incentive to exert the highest possible effort on the job, the principal can fully solve the agency problem by setting the agent's marginal payment rate (for instance in terms of piece rate) equal to 100%. The rationale for this lies in recognizing that the agent can be made fully induced to promote the principal's interest if he is made the residual claimant of the principal's benefits. This way, the principal "sell" to the manager the right to act as the principal and to retain all the benefits of his actions (in terms of the model introduced in the previous subsection this means that  $s$  is negative).

Setting marginal incentive rates equal to 100% corresponds to the ideal

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<sup>8</sup>More precisely the same optimality conditions still hold introducing risk-aversion, when the agent and the principal are characterized by the same level of risk-aversion (see also further in the next subsection).

situation in which efficiency is maximized, since in this way it is possible to generate the largest “pie” that then can be divided between the principal and the agent. While marginal incentive rates equal to 100% are observed in real settings (a famous example of them are compensation schedules of New York City cab–drivers[McMillan, 1992]), as a matter of fact piece rates are commonly set to much lower levels.

It has been argued that the reason for that stems from the existence of equity concerns that have to be traded off with efficiency: while full incentives may maximize the expected size of the pie to be shared, compensation plans should avoid to shift all risks of the size of the pie to one side of the relationship.

As a matter of fact, this claim of equity is not even necessary, because assuming differences in propensities towards risk between the principal and his agent, more precisely assuming that the latter is more risk averse than the former, it is possible to show that it is mutually beneficial to both parties not to completely shift risk from the firm (principal) to the agent.

Thus, it may simply be too costly for the principal to shift completely risk to the agent, that is to give him the highest powered incentives, because, since a manager is assumed to be not as efficient a risk–bearer as is the capital market, his reward for bearing the risk may be too higher than the risk prize of the principal, or, in other words, the manager would be willing to accept a smaller average payment from the principal if the latter would bear some risk, and the latter would find this exchange profitable.

Hence, the tradeoff that is here discussed here is not between efficiency and

equity but, more precisely, between efficiency and insurance. Incentive designers, then, have to clearly decide how strong to set the link between performance and pay, and, in designing contractual agreements, have to take into account the existence of this fundamental trade-off between incentive gain (increase in performance) and compensation costs (increase in reward for risk bearing). The proper pay–performance link should be thus evaluated by the designer taking into account external factors such as the attitude towards risk of managers, general economic conditions and firm– and industry–specific risk levels, and the amount of risk–taking behavior that the organization want to transfer to managers. Moreover, the decision on the strength of incentives has to clearly take into account how much discretionary is the behavior of the manager, that is how much performance is responsive to change in the level of effort put out by the manager on the job.

The result is risk sharing or partial risk shifting, where, since it is mutually beneficial that the principal still bears some risk, the incentives for the agent are reduced and the latter is made only partially accountable for the results of his actions.

We have argued in this subsection that contracts have to be designed not only in order to promote high levels of effort on the job, but they have as well to take into account equity and insurance constraints on the side of the manager.

There is one more justification for designing contracts that give to managers less than full empowered incentives. One point that will be made clear below is that, whenever the manager owns private information on the determinants

of his performance, the principal may have the convenience to set the incentives not only to promote high levels of effort but also to make the agent reveal his private information, diminishing the magnitude of information asymmetries between the parties involved in the contractual agreement.

### **3.3 Asymmetric information: risk shifting vs. information disclosure**

In many working environments it is the norm for the manager to own private information on various elements affecting his performance on the job and eventually his incentive payment. Typically, the principal may not be completely aware of the manager's capabilities and skills, and of which level of performance is reasonable to expect, given those skills and other contingent elements, such as market conditions. As a result, the principal may find difficult to set incentives in the contractual agreement, and may risk to design a contract with very low motivational strength or, conversely, to impose too much risk on the agent. In both cases, the outcome would be inferior than the optimal case where information is completely and freely available to the principal. Such bad outcomes may be successfully avoided if the principal were able to uncover the private information owned by his manager.

Agency theory findings suggest that it is possible for the principal to induce the agent to truthfully reveal his private information, linking the compensation plan of the latter to information that is explicitly disclosed by him. For instance, in the case of imperfect information on skills and capabilities of the manager, the trick is to set up a series of incentive plans



among which the latter is asked to choose, so that high performance agents, and only them, are better off choosing a high performance compensation plan and, vice versa, low performance managers, and just them, are better off choosing a low performance plan. As a result, the compensation plan is structured offering alternative reward packages that are meant to make managers signal their “type” and to truthfully disclose information relevant for evaluating observed performance. Usually this kind of compensation policies are focused on mechanisms based on two performance indicators: predicted (ex-ante) performance (measured as forecasts elicited from managers), and actual (ex-post) performance.

Once again, this principle of agency theory recalls the existence of a tradeoff between truthful revelation of information and efficiency of the system, since the principal has to set lower than full incentives as a way to induce the agent to truthfully reveal his private information.

It is also worth to mention what can represent a strong advantage of the above described bottom-up method of compensation plan design over traditionally top-down methods of targets assessment by superiors. As a matter of fact, the introduction into managers’ compensation plans of mechanisms of self-assessments of potential performance, assure the incentive designer that agents will voluntarily disclose to superiors all the relevant information available. This will happen because their pay at the end of the period will depend on information revealed at the beginning of it, during the process of setting up targets, goals and similar variable elements of the compensation plan. Then, while this method is undoubtedly more difficult to implement and sustain overtime than others, it also has the unvaluable

advantage that, if the plan is overall specified correctly, there is no space for strategic manipulation by managers. Conversely, traditional top-down attribution of targets and benchmarks in evaluating performance, especially when compensation plans are revised very often, may result in deceptive strategic behavior. If the principal cannot commit, for instance, to a long-term contract, the agent may not want to perform at his best for fear of raised objectives in the early future (this phenomenon, also known as “ratchet effect”, has been proved to be of relevant magnitude in job evaluation and incentive design of both organizations [Ickes and Samuelson, 1987, Dearden et al., 1990, Gibbons, 1987] and central planned economies [Berliner, 1976, Weitzman, 1980]).

In the previous subsection we have shown that one major issue of an agency relationship, both from the theoretical perspective and the practical design of incentives in organizations, is that it is possible to evaluate the contribution of the manager to the principal’s wealth only using an imperfect measurement technology. Since the manager’s effort on the job is not directly observable, the principal has to infer the contribution of the agent from actual performance, that is on the consequences of the agent’s actions. We have also argued that it is favorable for the principal to collect all the possible information in order to improve the process of the managerial performance evaluation. We have suggested that a common way to reach this is represented by eliciting the disclosure of asymmetric information that pertains to the manager. However, other instruments are available as well. Among them, as we will see next, indexation of contracts and subjective assessment of performance are extensively used as a way to take into account the impact

on performance of unforeseen events. Hence, let us turn our attention, now, to another instrument that can be equally useful in improving the evaluation of managerial performance: relative performance assessment.

### **3.4 Relative vs. absolute incentives**

One of the main claims of agency theory, since the early years, has been the recognition that the provision of incentives and their effects on managerial behavior are constrained by randomness and errors in measuring individual performance. The less the performance indicator represents the quality of the action undertaken by the agent, the less the motivational power of performance pay, since compensation is made dependent on variables that are beyond the influence of the agent. As a result, it has been advanced that relative performance evaluation can be effectively used in order to filter out common noise in the measurement of performance of managers carrying out similar jobs or undertaking similar activities [Lazear and Rosen, 1981, Lazear, 1995].

The drawback of relative compensation is that, since the manager is paid on the basis of a comparison between his own performance and the performance of peers within the organization, it may foster more competition among groups of workers than what it could be considered as optimal and may elicit self-interested behavioral responses, such as restraining from cooperation and “helping on the job” efforts. This may be particularly dysfunctional for the purposes of the organization when groups of workers are characterized by highly interdependent tasks (as in the case of team production), or, more

generally, when specialization of skills and knowledge asks for efforts of managers to be coordinated.

Since compensation packages are usually made by many different components, the incentive designer has to carefully evaluate the tradeoff between magnitude of absolute and relative evaluations since they may affect the degree of trust within the organization and result in attitudes towards cooperation incompatible with the goals of the organization. Agency theory suggests that the weight of relative compensation should be higher in working settings characterized, on the one hand, by common factors affecting individual performance and, on the other hand, by high levels of turnover and organizational mobility and by strongly competitive, rather than cooperative, dynamics among managers engaged in similar jobs.

### **3.5 Long– vs. short–term incentives**

Short–sightedness of managers is often cited as one of the major determinants of the conflict in goals between property and control within organizations. As a matter of fact long– or short–term perspectives of managers can be elicited by the incentive designer both acting at the level of performance measures and at the level of the explicit time span considered by the compensation plan. The former argument suggests that different performance measures elicit different attitudes towards time; for instance linking pay to market data, when available, seems to foster long–time concerns, while accounting–based indicators seem, at least when used alone, to induce much more short–sight

behavior of managers.<sup>9</sup>

The advice of agency theory for the designer of incentive plans is to carefully choose among the available measures of performance, taking into account the tradeoff between market vs. accounting indicators. While it is true that the former are closely connected to the shareholders wealth and are more robust and less sensitive to deceptive manipulation or extraneous and temporary changes, it is also to be recognized that, the lower the hierarchical level the manager belongs to, the lower the link between his actions and the overall performance of the organization, blurring, as a consequence, the motivational power of incentives.

Moreover, the choice of the time horizon that has to be induced to managers has to take into account structural factors pertaining to the technology used by the organization, the pace of return from investments and of depreciation of capital assets, and many more.

### **3.6 Continuous vs. discrete incentives**

Discrete incentives, rather than continuous ones, are characterized by providing monetary or nonmonetary rewards contingent with step-level measures of performance and/or probabilistic monitoring of performance. Bonuses, prizes, promotions, on the one side, fines and loss of job, on the other side, can be made part of the compensation plan and can elicit the same behavioral response of continuous incentives.

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<sup>9</sup>See below also for a discussion of deceptive activities carried on through manipulation of accounting data.

It has to be recognized that in this case the incentive designer is not facing a real tradeoff, since often discrete and continuous incentives are not used as substitute but rather they can be treated as complements. In this sense, discrete incentives reinforce the effect of continuous ones and can be especially helpful when the motivational strength of the latter category has to be set to low levels due to risk-sharing concerns.

In any case the designer has to clearly state the relative strength of those components in the compensation plan to avoid that the saliency of single elements is too diminished. This advice is strongly connected with another crucial evaluation that has to be pondered in setting up incentive plans, that is which level of complexity of the plan is optimal for the organization, to which we turn now.

### **3.7 Simple vs. complex rules**

We have argued above that there does exist a multiplicity of tradeoffs that have to be taken into account in the design of incentives for managers in real organizations. In setting up compensation plans, it is necessary to decide how much risk is to be shared between parties involved in the organization, how to deal with asymmetrical information, whether to use relative or absolute, long-term or short-term, continuous or discrete incentives.

While it has been argued that some tradeoffs call for the designer to choose exactly among alternative design options, on the basis of the prominent objective that the compensation plan is meant to address and solve, in other cases it is possible to overcome the tradeoff between competing properties of

different class of incentives, designing more complex compensation plans, by composition of different types of incentive schemes in large rewarding rules.

In a similar way, contract theory suggests that all factors that are correlated with performance should be included in the incentive scheme (this is the so called Informativeness Principle [Hölmstrom, 1979]), because it is thus possible, as we have already seen, to rule out more noise in the measurement of performance, and so to increase the motivational power of incentives on managerial conduct.

Despite this, it is very often observed in real organizational settings that contracts build only on a subset of the available measures of performance and that simple rewarding rules are commonly used in compensation plans.

As a matter of fact, both contracts based on too complex and too simple incentive rules may induce dysfunctional behavior of managers and may introduce similar, although of different nature, source of manipulation by managers. Consequently, the attention of the incentive designer is one more time call upon the existence of a tradeoff between simplicity and complexity of the rewarding rule to implement.

First of all, let's focus on simplicity. While simple rules of reward have the advantage of being easy to communicate, it has also been shown by contract theory that in multi-task settings simple compensation rules may have negative effects of managerial behavior: since contracts cannot specify all the relevant aspects of behavior of the manager, simple incentive rules can give rise to dysfunctional behavioral responses, where agents focus only on activities and aspects of their task that are explicitly rewarded and disregard

those activities that are not compensated [Milgrom and Roberts, 1988]. This is particularly true if we consider the provision of incentives as a dynamic process, rather than a static one. It can even be argued that the variability of compensation policies overtime in real organizations can be explained, to some non-negligible extent, to strategic reactions of incentive designers to managers learning to “game” the current compensation system to their advantage. As a matter of fact some empirical studies have addressed this hypothesis of dysfunctional responses to incentive scheme too narrowly defined and overall reinforce the idea that the HR unit within the organization has to clearly rely on multiple rewarding instruments and design balanced compensation packages if dysfunctional effects of incentives are to be minimized.

However, also compensation plans that are too complex may lead to dysfunctional outcomes. Clearly, the introduction of mix of different compensation elements (such as continuous and discrete incentives, long-term and short-term incentives, and so on), if the total expected cost of compensation plan is assumed to be constant, results in a loss of absolute motivational power of each single component. Moreover, deceptive behavior and distortion may be due to complexity of single elements inside a rewarding rule, such in the case of non-linearity. This is particularly true of those rewarding rules based on accounting data. For instance, whenever non-linearity is introduced in terms of upper or lower bound caps or step-level functions, this may induce end-of-period manipulation of investment decision and transfer across periods of accounting data to maximize the monetary rewards in both periods, regardless of the impact of



these manipulations on organizational performance.

Again, agency theory provide to the incentive designer the tools to understand the terms of the tradeoff between complexity and simplicity and is left free to decide the position to take within the tradeoff, contingent to the aims he attaches to the compensation plan.

Finally, it has also been suggested that, in order to avoid distortions of behavior (such as in multi-tasking), the stress on objective measures of performance should be lessened and the organizational designer should introduce also subjective, rather than only objective, performance evaluation. This is the topic of our last tradeoff.

### **3.8 Objective vs. subjective performance measures**

Subjective measures of performance introduce the issue of discretionary role of superiors in evaluating the contribution of subordinates within the organization. The basic point in making use of these techniques is that they may be more suitable for the evaluation of observed performance in settings characterized by highly multidimensional tasks and by strong difficulties in setting ex-ante objective benchmarks of managerial conduct.

Nevertheless, it has to be emphasized that subjective performance evaluation is not completely safe from manipulation and distortion and the incentive designer has to clearly evaluate whether the benefits of the introductions of these instruments outperform their drawbacks, such as, to name a few of them, intentional deceptive behavior of superiors, that may be inclined to underevaluate performance in order to save on wages, non-intentional

evaluation bias of superiors (as it happens in the case of compression of ratings), and rent-seeking activities of agents, carrying out patterns of behavior intentionally aimed to increase the probability of good evaluations from principals, even when this happens in contrast to organizational goals.

## 4 Discussion and concluding remarks

Some final remarks should be added on how to design and provide incentives in real organizational settings. Specifically, some addenda are to be given regarding the selection effects of incentive plans, the relationship between features of compensation plans and hierarchical positions and the explanation of how organizations may pursue efficiency despite the presence of weak incentives for managers.

Regarding the selection effect it has to be noted that the choice of a specific compensation package not only affects the motivation of current employees, but also bears some relevant consequences in attracting on the market specific class of workers [Lazear, 1986]. The incentive designer has then to keep in mind both effects when designing compensation plans.

About the second remark, the tradeoffs introduced in the past pages should be carefully evaluated at each level of the organization and the compensation plan should be made contingent on the kind of position held within the hierarchy. For instance, recalling a principle that has been highlighted above, the use of market data measures of performance, when available, should be especially employed at top level positions while accounting measures should be reserved for mid-level executives and managers. Moreover, high level of

internal job market mobility, that may result in myopic decision-making if incentives were based only on present performance indicators, should be contrasted introducing partial bonuses rewarding manager for their former assignment over a future span of years. Compensation committees may be introduced to enhance the credibility of compensation policies, especially when it is feared that dysfunctional behaviors may be elicited by managers' beliefs about revision and subjective manipulation of targets and benchmarks in subjective evaluations from supervisors [Hölmstrom, 1987].

Finally, it has been pointed out by critics of agency-theory that organization often are successfully managed without relying extensively on incentives, as on the contrary theory would suggest. As a matter of fact, many current critics of the agency framework today are still referring to the classic and old agency model that introduced the tradeoff between incentives and insurance.

In defense of agency-theory, it should be noted that, while much of the early years debate has been focused on the mentioned issue, it is also true that now risk-sharing is recognized as being just one topic among many and that the attention of theoretical analysis has recently shifted to different topics, such as which institutions are more suitable to foster incentive for skill acquisition rather than only for effort provision, which are the incentives for repeated interactions and reputation formation, how to analyze the problem of incentives provision in multiagent or in multilevel settings, and many more. Moreover, we now have many explanations, within the agency framework, of why organizations may favorably rely on weak incentives rather than strong ones. As Hölmstrom and Milgrom [1994] have clearly argued:

“The use of low-powered incentives within the firm, although sometimes lamented as one of the major disadvantages of internal organization, is also an important vehicle for inspiring cooperation and coordination” [Hölmstrom and Milgrom, 1994].

In a very similar fashion, Lazear [1989] proved that, organizations are better off in the case of weak incentives rather than in the case of strong and dysfunctional incentives (incentives that foster managers to engage in sabotaging activities as a means to maximize their incentive pay).

Moreover, many scholars have come to recognize that numerous sources of managerial self-discipline and of monitoring may considerably limit discretionary powers of managers and may act as a direct substitute of full explicit monetary incentives. Managers subject to low-empowered incentives may still act in the interest of the organization to the extent that monitoring committees (such as board of directors) prove to be effective, market pressure fosters the production of attractively priced products, the threat of a takeover elicits preemptive behavior by managers in keeping profits high, long-term career concerns are at work and elicit self-discipline, and so on [Kreps, 1997].

Overall, as we have tried to argue extensively through this article, the mature framework of agency-theory appears to be a powerful tool in the hand of those HR scholars and practitioners interested in the practical design of incentives in organizations since it offers a comprehensive frame of reference that can be effectively used in anticipating the effects of the implementation of incentive compensation plans in real organizational settings and their interactions with the intrinsic motivation of managers.

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