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Subjectivity in Compensation Contracting

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1.0 INTRODUCTION

This paper examines the role of subjectivity in compensation contracting. For the majority of employees, individual contribution to firm value is hard to capture using only objective performance measures. Despite this, researchers have only recently dedicated attention to the role of subjectivity in compensation contracting. Not surprisingly, these studies show that subjectivity is an important characteristic of most incentive contracts [Prendergast, 1999; Gibbs et al., 2004]. For example, Murphy and Oyer [2003] illustrate several ways in which firms exercise discretion in awarding annual bonuses to high ranking executives. Yet subjectivity is not only prevalent in top executive bonus plans. In fact, the Bureau of National Affairs[1] [1981] reports that, for all job types, compensation contracts involving subjective assessment are more common than those involving objective measurement.

The main focus of the compensation contracting literature has traditionally been on explicit compensation contracts of workers whose individual contribution is relatively easy to observe. These studies have provided important insights into incentive provision and contract design [e.g., see Prendergast, 1999]. Although many of these insights remain valid when compensation contracts include subjectivity, supervisor discretion introduces many additional issues. The trade-off between risk and incentive, for example, is likely less predictive of contract design when supervisors do not truly differentiate between good and bad performers.

This paper summarizes and synthesizes extant research on subjectivity in compensation contracting, and provides new insights that will help stimulate future research. The discussion is not limited to agency based research, as several studies (e.g., Ittner, Larcker and Meyer [2003]) indicate that behavioral-based explanations may be equally, or more predictive than agency-based explanations when studying the role of subjectivity in compensation contracts.

In the next section, I discuss the different ways in which subjectivity can play a role in compensation contracting. Next, I briefly explain the traditional agency model because most of the economic literature on subjectivity in com-

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[1] The Bureau of National Affairs [1981] as cited by Kahn and Sherer [1990].

pensation contracting builds on the theory of agency. In section four, I examine the benefits of introducing subjectivity into compensation contracts, and I analyze the costs in section five. In section six, I step away from the assumption that the principal controls the contracting process, and examine the relationship between subjectivity and rent extraction. In the final section, I point out several avenues for future research.

2.0 SUBJECTIVITY IN COMPENSATION CONTRACTS

Subjectivity entails judgment based on personal impressions, feelings, and opinions, rather than on external facts. The correctness of a subjective assessment cannot be determined by a third party. This means that, by its very nature, a subjective assessment is unverifiable for contracting purposes.

Subjectivity can play a role in incentive contracting in several ways. The most recognized way of introducing discretion is by allowing (part of) the ex post performance evaluation to be subjective. This can be done in three specific ways: (i) by using subjective performance measures, (ii) by allowing for (ex post) flexibility in the weighting of objective performance measures, and (iii) by allowing for ex post discretional adjustments based on factors other than the performance measures specified ex ante [Gibbs et al., 2004]. These forms of ex post performance assessment are not mutually exclusive; compensation contracts often include a combination of these forms of subjectivity.

Supervisor discretion is not only relevant at the end of the contracting period when performance needs to be assessed. Subjectivity can also play an important role at the beginning of the contracting process, when the contract details are determined. Within a set framework, supervisors are often responsible for choosing the specific performance measures, for attaching weights to the chosen measures, and for setting the performance targets.[2] Agency theory provides detailed predictions on contract design under the maintained assumption that the contracting objective is firm value maximization. Supervisors making the design choices are, however, not necessarily the residual claimants. Therefore, maximizing company value might not be their main concern. There is, for example, no reason to assume that favoritism only influences ex post performance evaluation and not ex ante target setting.

Discretion also plays a role during the contract period. Supervisors often have discretion over matters that influence employee productivity and incentives, e.g. job assignments and training [Prendergast and Topel, 1993]. However, we know little about how supervisors use their discretion throughout the contract period to influence employee incentive.

Finally, supervisor discretion can affect the provision of both short-term and long-term incentives. Research on subjectivity has focused almost exclusively on the role of discretion in determining yearly compensation,[3] even though long-term incentives are often implicit and frequently of paramount

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[2] Murphy [2000], e.g., finds that only 11 percent of the firms in his sample use external performance standards.

[3] A notable exception is the paper by Campbell [2008] in which he provides empirical evidence indicating that employee behavior is affected by the subjective weight placed on non-financial performance measures in promotion decisions.

importance for employee motivation.[4] Promotions, for example, tend to rely on a combination of objective performance measures, subjective performance assessments, and a subjective weighting of these elements' importance [Campbell, 2008]. In spite of the dominant role of subjectivity in providing long-term incentives, we know little about how the costs and benefits of subjectivity differ for long-term incentive provision. Considering that long-term incentive plans often have both an incentive and a matching function, the differences are potentially large.

Because the bulk of the research on subjectivity centers on supervisor discretion in ex post performance evaluation, the discussion in the following sections focuses on the costs and benefits of subjectivity when used in ex post performance assessment. I discuss research that examines the role of subjectivity during other stages of the contracting process when it is available. Because most of the work on subjectivity is based on agency theory, I start off by briefly discussing the traditional agency model.

3.0 OPTIMAL CONTRACTING IN A TRADITIONAL AGENCY SETTING

The main purpose of principal-agent models is to describe the "optimal contract" under various conditions [Rees, 1985]. The factor considered most important in this process is the amount of information possessed by both parties. In most contracting situations the agent possesses better information with respect to his actions, and/or the "state of nature," than the principal, because complete observation of the agent's actions is often either impossible, or prohibitively costly. In order to provide the agents with incentives in this information asymmetry condition, the principal writes a compensation contract that links the agent's compensation to his performance. This, however, is only a second-best solution. Linking pay to performance transfers risk from the principal to the agent as outcome measures are imperfect indicators of effort. The principal has to compensate the agent for bearing this risk. The optimal compensation contract is, therefore, contingent on finding the right trade-off between inducing unobservable effort, and minimizing the amount of risk the agent is required to bear. In order to maximize this trade-off, the principal will try to capture the agent's effort to the best extent possible. This leads to the prediction that a particular performance measure will be included in a portfolio of performance measures if, and only if, it has information content about the agent's actions over and above other measures upon which the compensation is based [Holmström, 1979]. The relative weight assigned to each performance measure is then determined by its sensitivity and precision (with sensitivity being the extent to which the expected value of a performance measure changes with the agent's actions, and precision being the lack of noise in the performance measure) [Banker and Datar, 1989]. Moreover, an additional performance

[4] Several empirical papers [e.g., Medoff and Abraham, 1980] show that the biggest compensation improvements can be traced to promotions instead of being the result of continued performance within a certain position.

measure proves to be valuable when it induces actions that are more congruent with the principal's gross payoff [Feltham and Xie, 1994].

In the following section, I discuss the benefits of introducing subjectivity into an incentive contract. The first four benefits discussed below are derived from the traditional agency-model discussed above, while the fifth benefit, reduction of perceived unfairness, originates in the justice literature.

4.0 BENEFITS OF SUBJECTIVITY

Mitigation of Incentive Distortions

Ideally, compensation contracts should incorporate all job dimensions, weighted properly, so that incentives are appropriately balanced across the different dimensions [Holmström, 1979]. However, objective performance measures often inadequately account for, or entirely ignore, some dimensions of the employee's job [Holmström and Milgrom, 1991; Feltham and Xie, 1994]. Placing high incentive weights on incomplete objective measures will make rational agents ignore unmeasured job dimensions. Thus, incomplete measures lead to distorted incentives.

Another weakness of objective measures is that they often do not put enough emphasis on long-term effects. Accounting measures, frequently used objective performance measures, are, by nature, backward-looking. Consequently, they do not accurately reflect the effects of employees' actions or decisions on future firm value [Kaplan and Norton, 1996]. Placing high incentive weights on backward-looking objective measures will give rational agents a short-term focus which will likely destroy long-term company value.

When the available objective performance measures are imperfect, agency theory predicts that the optimal contract provides weak incentives, or even pays out a fixed salary, in order to avoid distorted incentives [Holmström and Milgrom, 1991]. The introduction of subjectivity can then improve incentive contracting because it allows value-enhancing efforts that are not easily quantified to be included. This prevents the agent from directing his effort solely towards the objectively measured tasks, which, in turn, makes high-powered incentives feasible. Hence, subjectivity is beneficial to the principal because it allows for increased incentives in situation where distortions would have otherwise made high powered incentives imprudent. Baker, Gibbons and Murphy [1994] use an analytical model to show that complementing an objective performance measure with a subjective one can improve incentive contracting. They demonstrate that, when the fall-back position is not too positive and the subjective measure provides enough additional information, the use of a contract that is based on an objective and a subjective performance measure is superior to one based solely on an objective measure. Budde [2007] also uses an analytical model to examine whether the introduction of subjective performance measures is beneficial in a situation where multiple performance measures (a scorecard) are used. He shows that, by introducing subjective performance assessments, pure objective compensation contracts can be improved upon.

Using subjectivity to capture value-enhancing activities can also be beneficial to the principal because it can improve the efficiency of job assignments. Holmström and Milgrom [1991] use an analytical model to show that the in-

ability to capture certain dimensions can lead to inefficient task allocations. Activities that cannot be objectively measured are often grouped together in order to avoid distorted incentives, even if this is not the most efficient way to divide labor. Subjectively assessing hard-to-quantify dimensions allows efficiency to be the leading criterion in determining job assignments.

It is the ability to capture value-enhancing efforts that drives the added value of subjectivity when it comes to mitigating incentive distortion. Both subjective performance measures and discretionary adjustments are suitable for capturing value-enhancing efforts because they allow the principal the flexibility to take all relevant information related to the assessed dimension into account.

Several empirical papers have examined the role of subjectivity in mitigating incentive distortions. Murphy and Oyer [2003] provide empirical evidence indicating that subjectivity is more likely to be used when the available objective performance measures are less complete. They show that discretion in allocating bonus pools is significantly more prevalent in non-public firms than in publicly traded companies. Gibbs et al. [2004] examine whether subjectivity is used to encourage employees to adopt a long-term view, and find that subjectivity is positively related to training expenses. Bushman, Indjejikian and Smith [1996] show that the weight placed on personal performance assessment (which they assume to be largely subjective) increases with the importance of actions that affect both present and future firm value. In a very similar test, Murphy and Oyer [2003] examine whether the fraction of the CEO's bonus based on individual performance (which is again assumed to be largely subjectively) is higher for firms with strong growth or investment opportunities. They, however, do not find evidence of the predicted positive relationship.

Risk Reduction

Objective performance measures are often noisy. That is, they provide some information about the agent's effort, but are contaminated by uncontrollable random events. These uncontrollable events can come from outside the firm (e.g., a financial crisis), or from within the firm (e.g., organizational interdependencies), but in both cases they increase the uncertainty the agent faces. A rational agent will require the principal to compensate him for bearing this risk. Subjectivity can therefore be beneficial to the principal because it allows the principal to filter out uncontrollable events, which reduces risk and allows for stronger incentives [Holmström, 1979; Banker and Datar, 1989]. Baker, Gibbons and Murph [1994] use an analytical model to show that compensation contracts written on a noisy objective measure can be improved if the principal has (unverifiable) information about actual noise realizations, and if he uses this information to subjectively determine compensation.

The ability to make ex post adjustments according to the received noise signal is what drives the risk reduction. The most straightforward way to filter out uncontrollable events is to allow the principal the option of making discretionary adjustments. The principal can use the noise signal to increase or decrease the formula based compensation. An alternative way to control for random events would be to include the principal's subjective assessment of the noise realizations in the compensation contract. The main difference between

these two ways of introducing subjectivity is that the adjustment size remains flexible when allowing discretionary adjustments, while including a subjective noise measure fixes the size of the adjustment. Oyer [2004] and Rajgopal, Shevlin and Zamora [2006] point out that this flexibility may be of value to the principal because it allows the principal to meet the agent's reservation wage when uncontrolled events influence his outside employment opportunities. Given the non-negative value of this flexibility, discretionary adjustments are expected to be the preferred way of including subjectivity in the incentive contract when the objective is risk reduction [Höppe and Moers, 2008].

Several papers have empirically examined whether subjectivity is used to filter out uncontrollable events. Bushman, Indjejikian and Smith [1996], and Murphy and Oyer [2003] study the role of subjectivity in limiting the risk imposed by external factors, such a market conditions. However, they fail to find a significant positive relation between their measures of noise, and the weights placed on individual performance evaluation. Höppe and Moers [2008] perform a comparable test, but also take into account how subjectivity is introduced into the compensation contract. They distinguish between the use of discretionary bonus adjustments and subjective weights, and find that noise in accounting earnings, once accounting measures are the sole performance measure used, is positively related to discretionary bonus adjustments. Hayes and Schaefer [2000] provide empirical evidence consistent with principals substituting away from noisier objective performance measures to possibly subjective measures. Gibbs et al. [2004] examine whether the ability to filter out uncontrollable events through subjectivity allows for more aggressive target setting. They find that, when failure to achieve the target is nontrivial for compensation, subjectivity is positively related to the difficulty of meeting the performance target. In addition, Gibbs et al [2004] present empirical evidence indicating that subjectivity is used to deal with interdependencies.

Inducement of Adaptive Behavior

When using a purely explicit incentive contract, it is impossible to include information not foreseen ex ante. The only way to prevent suboptimal incentives when important information becomes available after the contract is finalized is to include the possibility of renegotiating the contract. However, renegotiating formal bonus contracts will likely be expensive [Baker, Jensen and Murphy, 1988]. One way to overcome this limitation is to introduce subjectivity into the incentive contract. Subjectivity allows the principal to take into account any additional relevant information that becomes available during the contract period. Consequently, a rational agent will consider how the new information changes the principal's priorities, and will alter his behavior accordingly. Hence, subjectivity can improve incentive contracting because it prevents suboptimal incentive provision in situations where relevant information cannot be entirely foreseen ex ante.

It is the ability to incorporate information that becomes available during the contract period that allows the principal to stimulate adaptive behavior. Subjective weights and discretionary adjustment are both relatively straightforward ways of providing the principal with this flexibility. When using subjective weights, the principal can adjust the weighting of the different objective (and/or

subjective) measures to reflect the new priorities of the company. A potential downside, however, is that subjective weighting can only change the importance of actions that the ex ante chosen performance measures already motivate; it cannot motivate different actions. Discretionary adjustments provide the principal with more flexibility and, therefore, allow the principal to induce a larger variety of adaptive actions.

Although discretionary adjustments provide more flexibility, empirical evidence shows that it is subjective weightings that are used to induce adaptive behavior. Höppe and Moers [2008] show that subjective weighting is positively related to the extent of environmental unpredictability. A speculative explanation for why we empirically observe extensive use of subjective weightings, even though this way of introducing subjectivity provides only limited flexibility, is that additional flexibility comes at a cost (e.g., more uncertainty about the measurement criteria). Future research should consider both the benefits, and the costs, of specific ways of introducing subjectivity. This will greatly improve our understanding of contract design choices in regards to subjectivity.

Limitation of Vulnerability to Manipulation

Objective performance measures are normally defined in clear numerical terms, which makes them susceptible to manipulation [Holmström and Milgrom, 1991]. Employees often have a better understanding of which (not necessarily desirable) actions increase measured performance. Employees can use this information to "game" the system, that is, to take actions that improve their compensation, but that go against the company's interest [Courty and Marschke, 2004].

Subjectivity can reduce the vulnerability to "gaming" because part of the performance is assessed ex post rather than measured according to measures that are set ex ante. This provides the principal with the possibility of punishing the agent when manipulation is detected, while the threat of being punished diminishes the agent's incentives to manipulate the system in the first place. Hence, subjectivity can be beneficial to the principal because it reduces the costs of manipulation.

The ability to make ex post adjustments is what allows the principal to limit the system's vulnerability to manipulation. A discretionary adjustment to the formula bonus is the most direct way of punishing an employee because it clearly communicates the principal's intention. If, however, the option to make a discretionary adjustment is not available, other forms of discretion (e.g., lowering subjective assessment or changing weights) can be used to ensure that the employee does not benefit from abusing the system.

Several empirical studies have examined the role of subjectivity in limiting the system's vulnerability to manipulation. Gibbs et al. [2004] examine whether the use of subjective performance assessment is positively related to the manipulability of objective performance measures, but they find no such relationship. Woods [2008] also finds no relation between the likelihood of a discretionary adjustment being made, and the manipulability of objective performance measures. However, in their 2007 study, Gibbs et al. do find empirical evidence indicating that implicit rewards are used to deter manipulation.

Reduction of Perceived Unfairness

An aspect that the traditional agency model has not captured, but that social scientists have long recognized, is the importance of justice in compensation contracting. Employee incentives are not solely determined by the relation between pay and performance. The perceived fairness of the compensation plan also influences employees incentives [Akerlof and Yellen, 1988; Blinder and Choi, 1990; Colquitt et al., 2001]. The organizational justice literature distinguishes two types of fairness particularly relevant in compensation contracting: i) the fairness of the outcome distributions, i.e. "distributive justice," and ii) the fairness of the procedures used to determine these outcome distributions, i.e. "procedural justice" [Colquitt et al., 2001]. Lack of procedural and/or distributive justice reduces employee morale, which, in turn, negatively affects incentives [Greenberg, 1987]. A large body of empirical research shows that perceived unfairness leads to negative attitudes, which then results in decreased motivation, and sometimes even in employees acting against the organization [e.g., see Cohen-Charash and Spector, 2001].

Subjectivity allows the principal to use his discretion to restore the perceived fairness of the incentive contract. Restoring fairness benefits the principal because it ensures that the negative consequences associated with perceived unfairness are avoided. Moreover, it can enhance the trust employees have in the incentive system. Restoring fairness reinforces employees' beliefs that improved performance will results in higher rewards, which is essential in motivating employees to enhance effort. Moreover, using subjectivity to restore perceived fairness can improve incentive contracting by creating a feeling of reciprocity. The employee receives more from the company than the required minimum, which then makes the employee willing to provide more than the minimum required effort [Hannan, Kagel and Moser, 2002].

It is the ability to make adjustments that allows the principal to increase the perceived fairness of the compensation process. Although restoring perceived fairness benefits the principal, I do not expect fairness considerations to be the main reason underlying the introduction of subjectivity. If the designer of the compensation contract would have foreseen negative reactions triggered by perceived unfairness, he would have designed the contract differently to begin with. This, however, does not mean discretion will not be used to restore fairness. If a feeling of unfairness threatens the effectiveness of the compensation contract, then the principal is expected to use whatever type of discretion he has to improve the perceived fairness.

There is limited empirical evidence that shows that subjectivity is used to reduce perceived unfairness. Bol et al. [2008] study a target-setting process, and find empirical evidence consistent with supervisors using their discretion in the target setting process to mitigate unfairness concerns created by the relative performance evaluation element of the incentive system.

5.0 COSTS OF SUBJECTIVITY

Although there are several benefits to introducing discretion into incentive contracting, it can also be quite costly. Subjectivity influences the behavior of both principal and agent, and these behavioral changes can be so strong that they destroy firm value. In the following sections I discuss the different drawbacks of subjectivity. The problem of reneging, discussed first, has long been recognized in agency theory [e.g., see Bull, 1983; Macleod and Malcomson, 1989; Baker, Gibbons and Murphy, 1994]. The other drawbacks of subjectivity originate in the behavioral literature, but have more recently also gained attention in behavioral economics [e.g., see Milgrom, 1988; Prendergast and Topel, 1996; MacLeod, 2003].

Reneging

The most pronounced problem with subjectivity is that it provides supervisors with the possibility to assess performance untruthfully. The mere fact that performance evaluation is subject to the supervisor's discretion makes it impossible for a court of law to enforce the contract. This lack of third party enforcement provides the principal the possibility to renege on his pledges. If the principal is the residual claimant, then additional compensation rewarded to the agent will decrease his own wealth. This gives the principal incentives to underreport performance in order to keep costs down. As a consequence, a rational agent will not provide effort because he will not believe that his effort will be appropriately rewarded. The fact that the agent expects the principal to renege on his compensation promise is therefore costly to the principal because it reduces the incentive effect of the compensation contract.

The underlying reason for the reduction in incentives is the agent's belief that the principal will act opportunistically. For a compensation contract to keep its motivational value, the agent must believe that the principal will keep his promise. The agent will trust the principal if he believes that the principal has either nothing to gain or something to lose by reneging. Therefore, the only way for the contract not to break down is to have an enforcing mechanism that ensures that neither party has an incentive to renege [MacLeod and Malcomson, 1989]

Reputational concerns can make a compensation contract enforceable. That is, the firm's concerns for its labor market reputation can induce it to honor its compensation promises, even when it has contemporaneous incentives to cheat [Carmichael, 1989]. A firm's reputation is valuable in a compensation contracting setting because it influences the agent's (and potential future agents') expectations of the firm's future behavior. A firm's reputation indicates how it has treated its agents in the past. Agents use this information to build their expectations, and to act accordingly in the next contracting period. Consequently, a firm with a bad labor market reputation will have difficulties inducing effort with a contract containing subjectivity. A survey among ninety-two companies indicates that a bad labor market reputation is indeed a concern; nearly two-thirds of the surveyed companies say that their management's lack of credibility has been an obstacle in their relationship with employees [The Conference

Board, 1997 as cited by Portales, Ricart and Rosanas, 1998]. Bertrand [2004] examines whether reputational concerns induce firms to honor its compensation promises. Her empirical evidence shows that a firm expecting to gain little in the future from its reputation is indeed more likely to renege on its pledges.

Setting up a fixed bonus pool is another potential way to eliminate a firm's incentive to renege. When using a bonus pool, the principal objectively determines the size of the total employee compensation pool, but does not commit to a particular allocation. Since the total bonus is determined by contractible objective performance measures, individual performance evaluation can be based on both subjective and objective performance measures, because the residual claimant will no longer have incentives to renege. Baiman and Rajan [1995] use an analytical model to investigate the characteristics of a bonus pool that uses a subjective performance measure to allocate the pool between two agents. They show that, as long as the subjective assessment is informative about at least one agent, bonus pool arrangements are strict Pareto improvements. Rajan and Reichelstein [2008] extend these results by establishing conditions under which bonus pools that are jointly determined by objective and subjective performance measures are optimal. Fisher et al. [2005] provide empirical support for the benefits of having an objectively determined bonus pool and allowing the principal discretion to then allocate it across employees.

Although bonus pools improve employee incentives by removing the principal's incentive to renege, the use of bonus pools also entails additional agency costs [Rajan and Reichelstein, 2006]. Bonus pools are zero-sum games. Each agent's compensation depends on the performance of the other agents covered by the arrangement. These interdependencies make performance pay more risky as the amount of money received by the agent is no longer solely based on his own performance. Rajan and Reichelstein [2006] use an analytical model to show that these costs can be substantial if the bonus pool covers only two agents; however, the risk premium declines as the number of agents covered by the bonus pool increases.

Another mechanism to stop the principal from reneging on compensation pledges is the use of an "up-or-out" contract [Kahn and Huberman, 1988]. Under an "up-or-out" contract, the principal has no incentives to underreport performance because the contract specifies that employees who, after a set period of time, are found to be unqualified for promotion must leave the firm. Without this requirement, the principal would have incentives to understate performance because he could keep the employee in a lower paying position and thus save on compensation costs. An "up-or-out" contract forces the agent to report performance truthfully because the alternative is losing an adequately performing employee.

Inaccurate Assessments

In most principal-agent relationships the principal is not the residual claimant because companies are generally multi-layered [Prendergast, 1999]. As a result, the financial incentive to renege on compensation promises is limited or non-existent; however, this does not mean that the principal has no incentive to use his discretion for his own benefit. Supervisors are still expected to take their own preferences into account when appraising performance. Therefore, it

is still rational for employees to not trust the principal's subjective assessment [Prendergast and Topel, 1993]. Empirical research presents considerable evidence indicating that supervisors do not always evaluate employees accurately, but instead rate them to serve their self-interest [Ferris and Judge, 1991; Bol, 2008].

Inaccurate performance assessments are costly for several reasons. First, inaccurate assessments lower productivity by reducing the effectiveness of the incentives in the organization [Baker, Jensen and Murphy, 1988]. Incentive contracts motivate employees as long as employee efforts are translated into increased compensation. If subjective performance assessments result in inaccuracies, then this translation does not take place consistently. This, in turn, negatively affects incentives because employees are not willing to increase effort when they fear their work will go unrewarded. Hence, inaccuracies cloud the link between pay and performance, and thereby affect the incentive provision of the compensation plan. Bol [2008] provides empirical evidence consistent with a negative relationship between rating inaccuracies and employee incentives. She shows that centrality bias has a negative effect on employee performance.[5]

Second, inaccuracies in subjective assessments are costly because they can negatively affect the perceived fairness of the compensation contract. As discussed in the previous section, perceived unfairness has a negative effect on employee incentives and is thus costly to the principal.

Third, inaccurate assessments can be costly to the principal because they can stimulate suboptimal behavior. Performance evaluations provide employees with information about how the supervisor perceives their performance. Inaccurate assessments may lead employees to falsely conclude that they are proficiently performing their tasks. Providing employees with this mistaken impression will have a negative effect on performance because it will motivate employees to continue their suboptimal actions. Moreover, information on how the supervisor perceives the employee's performance affects the employee's self-perceived marginal productivity of effort, which influences his incentives [Fang and Moscarini, 2002]. An understated subjective performance assessment lowers the employee's perceived productivity, which decreases his incentives by affecting the expected result of effort [Bénabou and Tirole, 2002]. Thus, inaccuracies in subjective assessments can be costly to the principal as providing an incorrect information signal can have negative effects on employee motivation.

Finally, inaccurate performance evaluations are of dubious value for personnel decisions [Jawahar and Williams, 1997]. The wrong employees may be promoted, while employees with real training needs might not be identified [Prendergast, 1999]. Moreover, inaccurate assessment may lead employees who feel discriminated against to resign, which will result in high turnover costs, and loss of human capital.

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[5] Although inaccuracies are, in general, predicted to have a negative effect on incentives, one should not assume that all biases are *per se* negative. Bol [2008] provides empirical evidence indicating that leniency bias has a positive performance effect.

Several reasons underlie supervisors' tendency to assess performance inaccurately. First, supervisors must work with their employees on a day-to-day basis; providing employees with negative feedback might therefore simply be unpleasant [Harris, 1994]. Offering employees harsh but accurate assessments is likely to damage personal relationships, and may lead to discussions and criticism [Bernardin and Buckley, 1981]. Supervisors might choose to avoid the real and psychological cost of communicating evaluations by providing inaccurate performance assessments. Empirical evidence, e.g., Varma, Denisi and Peters [1996], shows that this defensive behavior is more likely when the expected consequences of providing negative feedback are more pronounced. Jawahar and Williams [1997] find that the intended use of the performance ratings also affects the likelihood of rating inaccuracy. They find that ratings used for compensation or promotion decisions are more lenient and compressed than ratings obtained for training or employee development purposes.

Second, favoritism leads to inaccurate assessments. Supervisors are utility-maximizing agents who take their personal preferences into account when appraising employees [Prendergast and Topel, 1996]. For instance, supervisors might inflate ratings to reward appreciated employees, to encourage loyalty, or to promote their personal agendas. On the other hand, supervisors may deflate ratings to punish rebellious employees [Longenecker, Sims and Gioia, 1987].

Third, high information gathering costs regularly result in inaccurate performance assessments. The agency literature often assumes that the principal receives signals on the agents' actions constantly, and without cost. This simplifying assumption is unrealistic because in most cases monitoring is costly, and is performed only sporadically [Prendergast, 2002]. Supervisors have no incentive to invest time in gathering information if they bear all information gathering costs, but receive little of the benefit from conducting more accurate evaluations [Baker, Jensen and Murphy, 1988]. Hence, high information-gathering costs make supervisors less willing to invest the required time in information collection, which will likely result in less accurate performance assessments. Bol [2008] provides empirical evidence indicating that high information gathering costs lead to inaccurate performance ratings. Höppe and Moers [2008] show that information gathering costs negatively affect the introduction of subjectivity. They provide empirical evidence indicating that companies that are expected to benefit from discretion are less likely to actually introduce subjectivity if the monitoring intensity of the board is low.

Finally, inaccurate performance assessments might be a consequence of the supervisor's cognitive limitations. Divergence from "true" performance is not necessarily intentional. Cognitive limitations prevent supervisors from fully exploiting all information on employee performance. For example, supervisors have a tendency to base their ratings on general impressions. They attend to a global impression rather than carefully distinguishing between different performance dimensions, the so called "halo effect" [Fox, Bizman and Herrmann, 1983]. Another example of supervisors' cognitive limitations is the tendency to unconsciously focus more on some performance dimensions than on others, without regard to their importance. Lipe and Salterio [2000] show that, when supervisors have discretion in weighting different performance measures, they appear to disregard unique measures and overemphasize common measures. Ittner, Larcker and Meyer [2003] provide empirical evidence on the outcome

effect: they show that supervisors put greater weight on financial outcome measures than on the drivers of financial results. In a similar vein, Bailey, Hecht and Towry [2006] show that supervisors are unable to fully incorporate the non-contracted information when making discretionary bonus pool allocations. They find that supervisors have a tendency to choose a subset of available information as an anchor point, and then insufficiently adjust for other relevant information clues.

When employees realize that supervisors put more emphasis on certain dimensions of performance, they will themselves emphasize these same dimensions. Thus, even though subjective weights on objective performance measures can be used to "back out" unintended dysfunctional behavior created by objective measurement [Baker, Gibbons and Murphy, 1994], supervisors' cognitive limitations might still prevent the compensation contract from striking the right balance between different performance dimensions.

In order to understand the implications of introducing subjectivity into compensation contracts, future research should consider both supervisors' incentives to assess performance inaccurately, and their inability to avoid doing so.

Influence Activities

The fact that the supervisor can take his own preferences into account when assessing performance invites employees to engage in rent-seeking behavior. For instance, the employee may intend to influence the supervisor's decision by ingratiation[6] [Higgins, Judge and Ferris, 2003], or by currying favors [Milgrom, 1988]. Likewise, employees might exert excessive effort on visible tasks, or work "too hard" in order to signal worker quality.[7] These rent-seeking activities are costly to the principal because agents devote time and energy trying to influence the supervisor's decision that would have been better spent on productive activities.[8]

The underlying driver of influence activities is the opportunistic nature of the agent. An agent who is concerned with financial gain will engage in influence activities so long as efforts devoted to influence activities lead to more compensation than do efforts devoted to firm value-enhancing activities. Several empirical studies in the psychology literature examine the effectiveness of rent-seeking behavior, and find that influence activities, especially ingratiation, do indeed lead to higher performance assessments [e.g., see Ferris and Judge, 1991]. By using an analytical model, Milgrom [1988] shows that, in certain circumstances, the costs of these influence activities actually make it efficient to restrict the use of discretion in compensation contracting. No empirical

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[6] Ingratiation is behavior designed to increase the supervisor's liking of oneself or to make oneself appear friendly in order to get what one wants [Higgins, Judge and Ferris, 2003].

[7] This indicates that subjectivity might not be as effective in dealing with multi-tasking problems as suggested earlier. Subjectivity might prevent employees from spending time solely on measurable job dimensions; it does not keep employees from focusing on more visible job dimensions, nor from spending time on rent-seeking activities.

[8] Despite the deadweight costs of rent-seeking behavior, the company may choose to tolerate favoritism to some extent because supervisors derive utility from exercising bias. This allows firms to charge supervisors a price for exercising their preferences [Prendergast and Topel, 1996].

study, however, has examined the circumstances under which the deadweight loss caused by the influence activities would outweigh the benefits of subjectivity, nor whether this depends on the way subjectivity is introduced. This would be an interesting area for future research.

Uncertainty about Measurement Criteria

Subjectivity in compensation contracting introduces uncertainty about the measurement criteria that are used to determine performance. Objective performance assessment has the advantage of setting clear measurement criteria. This provides employees with a certain amount of "control" as they know which actions/outcomes are expected to lead to increased compensation. When performance is assessed subjectively, it is often less clear how performance can be improved. Since rational agents will not be motivated to increase effort unless they understand how improved effort translates into increased compensation, uncertainty about measurement criteria has a negative effect on incentive.[9] Hence, uncertainty about measurement criteria is costly to the principal because it reduces the incentive effect of the compensation contract.

It is the lack of understanding about what leads to improved performance that is driving this incentive problem. Not every way of introducing subjectivity will create the same amount of uncertainty. In general, both subjective performance measures and subjective weightings provide the agent with a reasonable understanding of what is expected of him. Discretionary adjustments, on the other hand, create a lot of uncertainty because they allow the principal to consider factors other than the performance dimensions specified ex ante. This flexibility is what makes discretionary adjustments so well suited for dealing with uncontrollable events, and with information that was not foreseen ex ante; however, this flexibility is also what creates uncertainty because it provides the employee no guidelines on expectations. The company's implementation efforts also affect how high the uncertainty about measurement criteria will be.[10] For example, subjective performance measures can be accompanied by complete guidelines that explain what type of behavior/actions are expected, or it can be left solely to the agent to determine what the desired behaviors/actions are. Lastly, the amount of trust the agent has in the principal will influence the extent to which a lack of clear guidelines bothers the agent. If the agent trusts the principal, he will expect not only a fair performance assessment, but also timely information about what is expected of him.

Some empirical evidence on the negative consequences of uncertainty about measurement criteria, and on the importance of trust in compensation contracts, exists. Ittner, Larcker and Meyer [2003] analyze the implementation of a compensation plan with subjectively determined weights, and find that the

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[9] In expectancy theory [Vroom, 1964; Heneman and Schwab, 1972] this is referred to as the degree to which performance is instrumental for the attainment of certain outcomes. Research shows that it is important in motivating individuals.

[10] The implementation and management of compensation system has been extensively studied in the human resource literature. There is a large body of research that studies how implementation issues, such as rating scale construction and frequency of performance assessment, can improve compensation contracting [e.g., see Murphy and Cleveland, 1995].

subjectivity led many employees to complain about favoritism and about uncertainty in the criteria used to determine rewards. Gibbs et al. [2004] examine the role of trust when compensation contracts include subjective assessment. Their empirical evidence indicates that the relation between subjectivity, and pay satisfaction and performance is more positive the greater the manager's tenure (i.e. their proxy for trust).

6.0 THE LINK BETWEEN SUBJECTIVITY AND RENT EXTRACTION

In the former sections, the maintained assumption was that the principal has full control over the design and implementation of the compensation contract. However, as suggested by managerial power theory, this is not necessarily the case. When governance is weak, the agent might have de facto control over the contracting process, and might use this power to his own benefit. Consistent with this claim, several studies have provided empirical evidence indicating that the compensation of powerful CEOs is significantly higher than predicted by standard economic determinants such as firm size, financial performance, and risk [e.g., see Lambert, Larcker and Weigelt, 1993; Boyd, 1994; Core, Holthausen and Larcker, 1999].

Controlling the compensation process does not mean that the agent can raise his own salary indefinitely. The amount of rent extraction is limited by the "outrage" that a proposed pay package would create [Bertrand and Mullainathan, 2001]. The agent does not want to use a compensation contract that would make otherwise passive shareholders take notice because such actions would expose him to reputational costs that could damage his human capital.

One way to extract rents while limiting the amount of "outrage" is to use a compensation contract that creates the illusion of a link between pay and performance. A compensation contract with supervisor discretion is therefore an excellent vehicle for rent extraction. The agent can use his power over the principal to increase his compensation while maintaining the illusion that the compensation is the results of high performance (or, at least, ensure that the rent extraction cannot be easily and distinctly identified). Therefore, managerial power theory [e.g., Bebchuk and Fried, 2002] considers subjectivity in compensation contracts to be a means by which powerful agents can increase their compensation. The view that subjectivity in compensation contracts is a form of rent extraction has also been expressed in the popular press [e.g., Morgenson, 2006].

Although the popular press makes strong claims, the empirical evidence on the relationship between discretion and rent extraction is mixed. Ederhof [2007] examines whether discretionary bonus payments occur more frequently in companies where executives have substantial power over the board of directors, and over the compensation committee, but finds almost no support for the hypothesized positive relationship. Ittner, Larcker and Rajan [1997] investigate whether CEOs use their power to influence contract design choices. They predict that non-financial performance measures allow for additional rents, as they are easier to manipulate. Contrary to their predictions, they do not find a positive relationship between CEO power and the use of non-financial performance measures. Davila and Penalva [2004], on the other hand, do find empirical evi-

dence for their prediction that the weight on more controllable accounting measures increases when governance quality deteriorates. Morse, Nanda and Seru [2007] find empirical evidence consistent with powerful CEOs inducing their board of directors to shift performance measure weight to measures on which they perform better. Anderson, Dekker and Sedatole [2008] and Bol et al. [2008] examine the role of power in target setting. They both provide empirical evidence indicating a positive relationship between supervisor discretion and rent extraction, i.e. they find that powerful agents are able to negotiate easier targets.

A speculative explanation for these empirical findings is that, with the increased media focus on discretionary bonuses, discretionary adjustments create "outrage" even though rent extraction cannot be clearly identified, and might not even be taking place. Because the role of discretion in e.g., target setting has not received a lot of media attention, influencing the target setting process might be a more efficient way of extracting rents.

7.0 FUTURE RESEARCH OPPORTUNITIES

There is a small but growing body of literature that investigates the role of subjectivity in compensation contracts. These studies show that the introduction of subjectivity can have both benefits and costs [Baker, Gibbons and Murphy, 1994; Baiman and Rajan, 1995; Ittner, Larcker and Meyer, 2003; Gibbs et al., 2004]. Although these studies provide us with some valuable insights, research that explains the role of subjectivity in compensation contracting is still in the early stages of development. The biggest limitation of the research to date is that most studies refer to subjectivity in a very general sense without acknowledging that many different types of supervisor discretion influence the compensation process. As such, creating a theory-informed typology of the major variants of subjectivity within compensation contracting is likely to advance the research frontier in this area. Below I discuss future research opportunities that flow from acknowledging the existence of different types of subjectivity.

One way to distinguish between varying forms of supervisor discretion is by analyzing the role of subjectivity in the different stages of the contracting process. The focus of research has been almost exclusively on subjectivity in ex post performance assessment. Although subjectivity in performance assessment is arguably the most dominant form of subjectivity, future research should also recognize the role of supervisor discretion in the contract design stage. Agency theory assumes that the main objective of the contract designer is maximizing firm value. However, most agency relationships are multi-layered, which means that personal preferences drive all design choices made at the lower levels of the organization. We also know little about how supervisors use their discretion throughout the contracting period. Discretionary decisions, such as job assignment and training opportunities, can have a large impact on the employee's productivity and incentives, and therefore should not be overlooked in future research. An especially interesting avenue for future investigations would be to examine how these different forms of subjectivity are interrelated. Only by analyzing the role of subjectivity throughout the entire contracting

process can we really understand the impact subjectivity has on compensation contracting.

As mentioned above, subjectivity in the performance assessment stage has received significant attention, yet even here our understanding of the role of subjectivity would be much improved if future research did a better job of distinguishing between different forms of subjective performance evaluation. Höppe and Moers [2008] take the first step toward empirically analyzing the specific characteristics of different forms of subjectivity. They examine which characteristics make different types of subjectivity more or less suitable for reducing risk, and for inducing adaptive behavior. They have, however, focused only on two potential benefits of subjectivity, and have not considered how specific characteristic can increase the costs of introducing subjectivity. Costs and benefits must be considered because compensation contract design choices are driven by both. In addition, considering the specific characteristics of different types of subjectivity could help shed more light on the question of whether the introduction of subjectivity is driven by optimal contracting, or driven by the desire of powerful agents to extract rents without creating too much "outrage."

Another area of interest is the relationship between the objective and the subjective elements of the compensation contract. The different components of a compensation contract are likely interrelated; therefore, research should not be limited to studying subjectivity in isolation. To understand the interrelation we should examine such questions as: How does the rating behavior of the supervisor differ when both objective and subjective performance measures are used? Does subjectivity act as a complement or as a substitute in incentive provision? How does the design of the total compensation contract change when subjectivity is added? And which external and internal factors drive these results? Research, thus far, has not been able to answer these questions because studies usually do not take the entire compensation contract into consideration when studying the role of subjectivity. A notable exception is the paper by Gibbs et al. [2007] that examines how different incentive instruments, including subjectivity, are related to each other.

We also lack an understanding of how the role of subjectivity differs in providing long-term versus short-term incentives. This difference is likely to be nontrivial because most long-term incentives have both an incentive and a sorting role. Understanding the link between supervisor discretion in determining compensation, and in determining responsibility, would greatly increase our comprehension of organizational design.

In conclusion, supervisor discretion is an important characteristic of many compensation contracts, yet subjectivity in incentive contracting has only recently received some attention in the management control literature. Data limitations have traditionally been an obstacle as subjective elements are not easily studied using traditional datasets. However, considering how important an understanding of the role of subjectivity in compensation contracting is, management control research must strive to find less traditional ways to tackle these issues.

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1. Baiman, S. and M. V. Rajan. 1995. The informational advantages of discretionary bonus schemes. *The Accounting Review* 70(4): 557-579.

Bonus pool arrangements are incentive plans in which the total compensation amount is determined by contractible information, while discretion is used to determine how the total compensation amount is allocated among the covered employees. The authors show that the use of a bonus pool arrangement allows the owners of the firm to include subjective performance assessments in the compensation contract. Without such an arrangement (or some other enforcing mechanism), non-contractible information cannot be explicitly incorporated in the contract because allowing the principal this discretion would result in opportunistic reneging on the pledge to provide honest performance assessments. The use of a bonus pool arrangement also has negative consequences. It sets up a zero-sum game between the employees covered by the plan, which will likely lead to distortions. Using analytical modeling, the authors show that the use of a bonus pool plan still leads to a strict Pareto improvement as long as the subjective performance assessment is informative about at least one of the covered employees.

2. Baker, G. P., R. Gibbons and K. J. Murphy. 1994. Subjective performance measures in optimal incentive contracts. *Quarterly Journal of Economics* 109(4): 1125-1156.

The authors of this paper use analytical modeling to examine how subjective performance measures can improve, or complement, the available objective performance measures. They assume that objective performance measures are imperfect, and that this leads to distorted incentives. Moreover, they assume that a firm's concern for its reputation in the labor market can make a contract based on subjective performance assessment enforceable. Relying on these assumptions, they show that compensation contracts based on objective performance measures (explicit contracts), and compensation contracts based on subjective assessment (implicit contracts) can work as complements. They show that, in some circumstances, neither an explicit nor an implicit contract by itself can lead to a profitable outcome; however, a contract with both objective and subjective performance measures can result in a profit. They also show that the subjective weighting of objective performance measure can be beneficial because it moderates, or "backs out," the distortions created by the objective performance measures.

3. Gibbs, M., K. A. Merchant, W. A. Van der Stede and M. E. Vargus. 2004. Determinants and effects of subjectivity in incentives. *The Accounting Review* 79(2): 409-436.

Using compensation data from 526 department managers, the authors examine what determines the use of subjectivity in compensation contracting. They find that subjective performance assessments are included in compensation contracts in order to complement the perceived weaknesses of the objective per-

formance measures. Moreover, they show that subjectivity is used to insure employees against downside risk in their compensation. Consequently, the authors conclude that subjectivity can benefit the firm because it improves incentive alignment, and reduces employee risk. The authors also examine the effect of subjective performance evaluation on employee compensation, satisfaction, productivity, and profitability. They find that subjectivity has larger positive effects when trust between the manager and the subordinate is greater.

4. Ittner, C. D., D. F. Larcker and M. W. Meyer. 2003. Subjectivity and the weighting of performance measures: Evidence from a balanced scorecard. *The Accounting Review* 78(3): 725-758.

Using field data from a major financial service provider, the authors of this paper analyze the weight placed on different types of performance measures. They study a balanced scorecard plan in which the weighting of different performance measures is determined subjectively. The paper shows that allowing subjectivity in weighting can have undesirable consequences. More specifically, they find that the introduction of subjective weighting did not lead to a "balanced" scorecard. Measures that were predictive of future financial performance were ignored, while too much weight was placed on non-predictive measures. Moreover, evaluation criteria were changed from one quarter to the next, and factors other than the chosen performance measure were included in the evaluation. The authors find more evidence for their psychology-based predictions than for their economic-based predictions, which leads them to conclude that psychology-based explanations can play a key role in understanding compensation contracting.

5. Prendergast, C. 1999. The provision of incentives in firms. *Journal of Economic Literature* 37(1): 7-63.

This paper provides an overview of the existing research on incentive provision. By analyzing the existing empirical evidence on compensation contracting, the author wants to determine the predictive power of agency theory. In order to do this, he focuses on two questions: First, do agents respond to contracts that reward performance, and is their reaction always in the firm's best interest? And second, do companies write contracts in accordance with the predictions made by agency theory? He finds considerable empirical evidence indicating that agents respond to incentives, but that these responses are not necessarily beneficial to the firm. The literature has been less successful when it comes to providing empirical evidence that indicates that the observed contracts match the theoretical predictions. The author therefore concludes that the available empirical evidence does not provide a complete endorsement of agency theory.

6. Prendergast, C. and R. H. Topel. 1993. Discretion and bias in performance evaluation. *European Economic Review* 37(2-3): 355-365.

This paper discusses some of the potential problems organizations face when implementing incentive schemes that involve supervisor discretion. The au-

thors point out that the agency relationships in most organizations are multi-layered. Therefore, performance evaluations will not be performed by residual claimants, but by supervisors who have their own biases and preferences. Hence, the results of subjective performance evaluation rely heavily on the incentives of the supervisor. The authors argue that supervisor discretion does not lead to reneging on pledges, but that it results in organizational practices such as rent-seeking behavior, bias, and favoritism. They discuss several organizational responses to bias, such as seniority based pay, and monitoring supervisor's decisions. Finally, they argue that it may sometimes be beneficial to the organization to suppress information on the employees' actual performance. If below-average employees know their relative position, they might be discouraged from providing effort in the future.

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