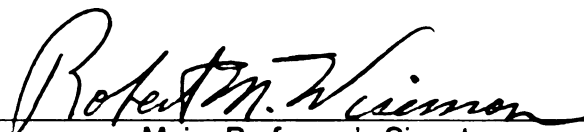This is to certify that the
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THE DIMENSIONS OF EXECUTIVE PAY

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DECONSTRUCTING COMPENSATION: THE DIMENSIONS OF EXECUTIVE PAY

By

Cynthia Elizabeth Devers

A DISSERTATION

Submitted to
Michigan State University
in partial fulfillment of the requirements
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ABSTRACT

DECONSTRUCTING COMPENSATION: THE DIMENSIONS OF EXECUTIVE PAY

By

Cynthia Elizabeth Devers

Past research has essentially resulted in equivocal findings regarding the
relationships among compensation schemes and executive behavior or firm performance.
In response to this problem, I propose that the current operationalization of compensation
measures (i.e. pay mix or pay risk) in extant research may be responsible for the inability
to find meaningful relationships, as the manner in which these measures are constructed
largely ignores their effects on executive's perceptions of wealth. Consequently, I
develop a model that distinguishes among the objective dimensions embedded in the
compensation contract (implicit risk, horizon length, horizon flexibility, and performance
standards) and the perceptual constructs (projected value of compensation, endowed
wealth, problem framing, perceptions of control, and wealth orientation) that emerge in
response to these dimensions, in order to disentangle the potential incentive properties of
various forms of compensation.

I then derive and test hypotheses from this model regarding the manner in which
executives actually value, and hence, perceive (frame) future incentive pay and how these
perceptions affect executives' wealth orientation. Findings demonstrate general support
for the model and suggest that executives' perceptions of and responses to their
contingent pay can be dynamic, and that although incentive alignment may initially be
achieved via the inclusion of contingent pay in the compensation package, this alignment
may not hold constant throughout the compensation horizon. Results also reveal that the

sense of control executives' perceive they have over a form of incentive compensation moderates the influence of framing on their wealth orientation. These findings and implications for future research are discussed.

I dedicate this dissertation to my family. I thank my parents for their past and present guidance and for supporting me in any endeavor I pursue. I also thank Lisa, Kylie, and Kenna for their encouragement and patience throughout my time in the doctoral program, during the completion of this dissertation, and always. Without such support, this would have never been possible.

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CHAPTER 1

INTRODUCTION

If the system worked perfectly, executive pay would rise when the boss delivered the goods for shareholders. And it would fall when corporate performance declined. But it doesn't always happen that way (BusinessWeek Online, 2000).

The quote above exemplifies the manner in which executive compensation is currently portrayed in the popular press. In fact, rarely a day goes by without hearing condemnation of the excessive compensation awarded to high profile leaders of poor performers such as Kmart and AT&T. These stories along with the WorldCom, Tyco, and Enron scandals have spawned vociferous calls for compensation reform in Corporate America. More specifically, much of this rhetoric contains the notion that the design of executive compensation packages played a primary role in propagating such scandals. For example, Brandon Rees, a research analyst with the AFL-CIO's office of investment states, "it seems like every company that had accounting problems also had troublesome compensation practices" (BusinessWeek Online, 2002). In addition, Stone (2002) charges that compensation practices offer executives incentives to manipulate numbers to offset downturns in business. All this has some scholars questioning whether incentive compensation motivates executives to do more harm than good (Abowd & Kaplan, 1999).

Although many believe executives are unduly overpaid, there are others who claim executive compensation works as intended (Loewenstein, 2000; Perry & Zenner, 2000). These advocates argue that a fairly strong link exists between executive pay and firm performance (Murphy, 1999). In fact, Hall and Liebman (1998) find empirical

1

evidence that "CEO compensation is highly responsive to firm performance" (pg. 685).

Nonetheless, the effects of executive compensation remain a hotly contested issue in the popular press, with shareholders crying foul while compensation committees scramble to defend the pay packages awarded to executives.

In response to this debate Abowd and Kaplan (1999) raised several questions that that they claim remain unanswered regarding executive compensation:

1) How much does executive compensation cost the firm?
2) How much is executive compensation worth to the recipient?
3) How well does executive compensation work?
4) What are the effects of executive compensation?
5) How much executive compensation is enough?
6) Could executive compensation be improved?

Taking the stance that the purpose behind the study of executive compensation is to ultimately design efficient and effective incentive systems, it would first seem important to examine how executives actually perceive and respond to their compensation packages. However, it is surprising how little we know about the motivating properties of executive compensation. Consequently, in an attempt to determine how executives do perceive and respond to compensation, this study is designed to answer three of the questions raised in Abowd and Kaplan (1999): how well does compensation work?, how do executives value compensation? and what are the effects of executive compensation?

CHAPTER 2

COMPENSATION RESEARCH

One of the factors complicating the study of compensation is that executive pay packages can contain several different types of pay (e.g., base salary, cash bonus awards, stock options, restricted stock grants, long-term incentive pay, deferred compensation, etc), which are generally combined into unique pay packages. Further, each type of pay can take on several different designs. Stock options, for instance, have many variations including fixed-price, performance-based, indexed, fixed value, fixed grant, and mega-grant, to name just a few (c.f., Hall, 2000). Consequently, stock options can vary in how and when they are awarded, how and when they become vested, and how the exercise price is determined. Though stock options may have the most flexibility in their designs, all types of pay can be designed in different ways. Even base salary can be paid in the year it was earned or deferred to a future year. Thus, each type of pay can exhibit a variety of designs, and when combined with other types of pay in unique ways, can create very unique solutions to the problem of risk sharing between executives and principals. As such each executive's particular pay scheme is one intended to serve the needs of the executive, the shareholders, the particular circumstances of the executive's employment situation, and the restrictions imposed on the compensation agreement by exogenous factors. Consequently, considerable differences exist in compensation contracts among executives (Murphy, 1999) making compensation research more difficult.

We currently have evidence to show that executives respond to stock options differently than they respond to equity ownership (Sanders, 2001), yet much research still fails to recognize variation within pay type. When the differences in risk properties

among different forms of pay are acknowledged, one of two measures of compensation risk are typically used: pay mix - the proportion of (contingent) variable pay to total compensation, often referred to as "the mix of fixed and incentive components" (Gray & Cannella 1997, pg. 518), or the proportion of long-term to short-term or cash compensation (Finkelstein & Boyd, 1998). Consequently, many studies have empirically examined the influence of one or the other of these variables on various executive decisions, including but not limited to capital investment (Chakraborty, Kazarosian, & Trahan, 1999), acquisitions and divestitures (Sanders, 2001), or firm performance (Lambert, Larcker, & Baker, 1987).

These two variables are attractive to researchers, as they are easily constructed using widely available secondary data sources. However; these data are generally produced from proxy statement data that classifies pay too broadly, thus allowing examination of only a narrow set of compensation design configurations (c.f., Wiseman, Gomez-Mejia, & Fugate, 2000). Consequently, discrete forms of compensation are routinely aggregated into coarsely constructed categories that largely obscure the effects of pay risk on executive decisions.

To illustrate, using pay mix as a variable requires the researcher to split total compensation into two general categories: contingent (variable) and non-contingent pay (fixed). Consequently, many scholars, investigating the incentive propensity of compensation routinely group restricted stock, stock options, long-term performance plans, stock ownership, and long-term bonuses into a single measure of contingent pay or long-term pay since these forms of pay are considered to have substitutable incentive effects (Agrawal & Mandelker, 1987; Jensen & Murphy, 1990, Mehran, 1995) and

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subsequently examine the effects of these ratios on executive decisions and/or firm performance.

Several challenges to the use of coarse-grained measures of compensation have arisen. In general these arguments suggest that coarse-grained measures ignore differences in the incentive properties of the individual forms of pay, and thus obscure dissimilar or even contradictory effects of different forms of pay on executives' perceptions and ultimately, executive behavior (c.f. Wiseman, Gomez-Mejia & Fugate, 2000). For example, Bryan, Hwang, and Lilien suggest stock options and restricted stock each have differential payoff functions and that in high growth firms restricted stock awards "can exacerbate executives' aversion to risk taking" and that stock option awards will act as a more efficient incentive than restricted stock (2000: 663). Their argument notes that these two stock-based forms of pay have differential payoff functions and which may result in opposing influences on agents' decisions. Similarly, Sanders (2001) found stock option value (measured at award) and stock ownership to have differential effects on executives' acquisition and divestiture decisions. This empirical evidence suggests that executives may attach separate values to each form of pay contained in their compensation packages, perhaps viewing the package not in aggregate, but as a portfolio of distinct, potential pay opportunities, in which each have varying value and risk potential. Sanders' evidence further questions the wisdom of combining superficially similar forms of pay into one measure.

In sum, using coarse-grained categories of pay fail to account for the manner in which executives perceive each particular type of pay, especially when the forms of pay being combined have competing risk characteristics. Specifically, broad measures, such

as pay mix, combine multiple forms of pay into a single measure and hence exaggerate potential noise in the associations between these measures and other variables of interest. In addition, these measures confound two critical dimensions of risk: the value at risk and the probability of receiving this value. This is problematic as it can undermine empirical tests of theory, adversely affect the predictability of models of compensation, and, as Hall and Murphy (2002) find, lead researchers to draw misleading conclusions. In other words, traditional measures of executive compensation may hinder our ability to identify robust influences on behavior and performance, and thus prevent researchers from observing important differences that, if recognized explicitly, might provide stronger predictions of how executive pay influences behavior.

In this study I suggest that measures of compensation should reflect executives' projected value of future pay for each form of compensation in the pay package, rather than *ex ante* estimates of shareholder cost. For example, executives' projected value of stock options and option-like pay forms can vary depending upon the point in the horizon and/or type of measurement. To illustrate, at award, a set of options given "at the money" will be assigned some positive recorded value based typically on the Black-Scholes (1973) formula. The Black-Scholes valuation is based on the assumption that options will held until expiration - generally 10 years; however, in practice, the majority of executives exercise their options well before expiration, many immediately upon vesting (Huddart & Lang, 1996). This causes some to argue that option grants will encourage risk-seeking behavior (Sanders, 2001) as they offer upside potential without downside risk. However, consistent with the concept of instant endowment (Thaler, 1980; Thaler & Johnson, 1990), others have argued that once the market price of options

exceeds the strike price, and agents endow this value, the options take on perceived (real) value (Wiseman & Gomez-Mejia, 1998). In fact, Hall and Murphy suggest that the proclivity of executives to exercise options early (three to fours years in) results from risk aversion on the part of executives who are attempting to "lock in" gains following increases in market price (2000: 28). Therefore, when options achieve a positive spread, and that potential value is acknowledged executives' will sense downside risk to that value, which most likely intensify, as the vesting date grows closer. Consequently, I suggest that options can have differential risk characteristics, depending and when they are measured. However, there is no standard measurement period employed by compensation researchers investigating the influence of stock options on executive behavior. Empirically this is problematic as the perceived value of options, hence the effects of options on executives' perceptions can change, depending upon the time period of the horizon researchers are using to construct their measures. Consequently, if we wish to truly test how executives respond to various compensation schemes, we must use executives' measures of their projected value of compensation rather than *ex ante* cost to shareholder figures in our models.

CHAPTER 3

COMPENSATION DESIGN

Compensation design involves the construction of a contract between the agent and the principal. As such, compensation designs contain several features that are typically required of any contractual relation (MacNeil, 1978). Specifically, this includes the amounts of compensation that may be awarded, the performance standards (internal or external) used in awarding different forms of compensation, the implicit risk associated with a particular form of compensation, and the length and the flexibility of the time horizon, including when performance will be assessed and compensation awarded. Using these as a guide, I argue that the various forms of executive compensation can be modeled along these elements and that these elements give rise to five perceptual dimensions (projected value of compensation, endowed wealth, problem framing, perceptions of control, and wealth orientation) that affect executives' perceptions of compensation.

It is widely accepted that compensation schemes specify the degree of risk sharing between agents and principals (Coffee, 1988). That is, compensation contracts specify the amount of risk that each party to the contract will bear as a result of the compensation agreement between the agent and the principal (Holmstrom, 1979; Shavell, 1979). When an agent's compensation is contractually guaranteed over a specified time regardless of his/her performance (e.g., base salary), the agent perceives little risk, while the principal bears all the risk associated with the cost of that contract. That is, the principal is obligated to pay regardless of agent efforts on behalf of the principal. Conversely, if agents are paid solely on a contingent basis such that the agent's compensation is

dependent upon achieving certain performance objectives important to the principal, then the agent bears all of the risk in the contract. Generally, the majority of compensation contracts involve risk sharing by both parties. This risk sharing property is a key element in debates over the efficacy of executive compensation design (c.f, Beatty & Zajac, 1994; Gomez-Mejia & Wiseman, 1997). The concept of risk within a principal-agent relation generally recognizes two dimensions. First, that something of value to the agent is "at risk" of being lost, and second, the likelihood that this value could be lost (see Wiseman, et al., 2000, for a review of compensation risk). Whether the executive expects to receive this value would therefore appear to be a critical factor in examining how a given compensation design is perceived by the agent and how this well this design works (Wiseman & Gomez-Mejia, 1998).

Wealth Orientation – How Well Does Executive Compensation Work?

Agency theory proposes that principals and agents have competing attitudes toward risk. Principals can diversify their stake across firms, thus are considered risk neutral (Eisenhardt, 1989). On the other hand, agents are overinvested in the firm (they cannot diversify away employment and income concerns) and are considered opportunistic, thus, as a means of protecting personal wealth (defined as current income, current assets, and fully anticipated future income, Shefrin & Thaler, 1988), will act in a risk averse manner (Donaldson, 1961; Eisenhardt, 1989), "preferring lower risk options at the expense of returns" (Wiseman and Gomez-Mejia, 1998: 136) when making decisions that affect the future performance of the firm. Consequently, in order to re-channel opportunism and influence agents' actions, agency theory advocates the use of performance-contingent pay components in compensation contracts that align the

orientation of the agent with that of the principle (Tosi & Gomez-Mejia, 1989). Or in other words, in order for compensation to work properly incentives are necessary to force a shift in agents' orientation from wealth maintenance (risk aversion) to one of increasing wealth (focusing on the upside potential).

On the other hand, behavioral decision literature proposes that decision-makers are loss averse; hence, their orientations will shift from wealth maintenance to wealth enhancement throughout the compensation contract, in accordance to where performance lies relative to a salient reference point. To illustrate, prospect theory (Kahneman & Tversky, 1979) suggests decision makers frame decisions around a wealth reference point of current wealth (the status quo) and that prospects for positive changes to the status quo create positive (gain) frames, triggering risk aversion, while prospects for losses of current wealth create a negative (loss) frame, triggering risk-seeking behavior (Kahneman & Tversky, 1979; Hodgkinson, et al, 1999; Sitkin & Pablo, 1992). Hence, performance-based incentives may work differently on executives' wealth orientations (i.e. whether they are concerned with increasing personal wealth or maintaining the current level) throughout the compensation contract.

Both agency theory (incentive alignment hypotheses) and behavioral theory (effects of problem framing) suggest that at any given time decision makers' wealth orientation (focus) runs along a single continuum (the intention to protect vs. the intention to increase), which is consistent with cognitive theories that propose decision makers have limited cognitive capacity to process information and thus favor the use of simple heuristics and search "for rapid adequate solutions" (Fiske & Taylor, 1991: 13). However, they both differ in their proposed antecedents of executives' behavior (risk

aversion vs. loss aversion). In response, Wiseman and Gomez-Mejia (1998) developed

the behavioral agency model (BAM) of executive risk-taking in an attempt to integrate

both views by proposing compensation affects executive decisions through the risk

executives bear (perceive) from various forms of pay. In this paper we take the BAM

back a step to focus on executives' wealth orientation rather than risk bearing as it moves

us closer to understanding whether incentive alignment actually does occur (i.e. are

executives focusing on maintaining or increasing wealth).

<u>Why Wealth Orientation?</u>

A number of empirical tests have supported prospect theory predictions

(Kahnemen & Tversky, 1974; Tversky and Kahneman, 1986, 1992; Thaler & Johnson,

1990; March & Shapira, 1992; Sullivan & Kida, 1995; Loehman, 1998; Kühberger,

Schulte-Mecklenbeck, & Perner, 1999). Although prospect theory has been a dominant

theory in behavioral risk-taking literature, some empirical evidence finds behavior that

directly contradicts its predictions (i.e. the house money effect, Thaler & Johnson, 1990;

threat-ridgity, Staw, et al, 1983).

To deal with these inconsistencies, I suggest that it is critical that we uncover

executives' wealth orientation, an antecedent of choice behavior, rather than simply

measuring executives' perceptions of risk of the behavior or the behavior directly. To

illustrate, empirical tests of prospect theory have primarily used risk-taking behaviors

(i.e. gambling choices, Kahneman & Tversky, 1979; Thaler & Johnson, 1990, investment

decisions, Sullivan and Kida, 1995, or acquisitions and divestitures, Sanders, 2001) or

perceptions of risk of a particular choice (Weber & Milliman, 1997; Sitkin & Weingart,

1995) as a dependent variable. I suggest that this is problematic, as we cannot

automatically assume that behavior labeled as risky by the researcher is perceived as equally risky by the subjects under study (McNamara & Bromiley, 1997, 1999). For example, we truly do not know how risky executives consider acquisitions or divestitures to be (Sanders 2001), or if they perceive them as risky at all (see Hayward's and Hambrick' 1997 discussion of managerial hubris). This is in line with March and Shapira who state that "[f]rom a behavioral point of view, this contextual variation in risk-taking seems to stem less from the revision of a coherent preference for risk (March, 1988) then from a change in focus among a set of inconsistent and ambiguous preferences" (1987: 88). In fact, empirical evidence has shown that individuals vary in the manner in which they perceive risks presented to them (Weber & Milliman, 1997; Cooper, Woo, and Dunkelberg, 1988). Consequently, a behavior labeled as risky by one may actually be perceived very differently by another, perhaps leading to the conflicting results we have seen in empirical tests of prospect theory. Hence, we cannot be assured that researchers' interpretations accurately match executives' perceptions of their own behavior (i.e. is it risk seeking or risk averse?). Nor can we extrapolate the wealth orientation that emerges from a particular incentive or situation regardless of the choices before executives by examining choice behavior or perceptions of risk of a particular choice.

Although referred to by various labels, the wealth orientation of decision makers contemplating risky decisions across contexts has been a topic of discussion for several years (see March & Shapira, 1987, 1992; Lopes, 1987; Sitkin & Pablo, 1992; Sitkin & Weingart, 1995). Predictions here are generally patterned after prospect theory in that they center on the idea that when performance is ahead of a salient reference point (a positively framed or gain situation), the desire to maintain those gains dominate decision

makers' concerns, thus, decision makers fear the danger of performance falling below that reference point. Conversely, when performance is behind the salient reference point (a negatively framed or loss situation), decision makers' concerns shift toward locating opportunities that will increase performance to meet aspirations (March & Shapira, 1987; Lopes, 1987; Sitkin & Weingart, 1995). Although these predictions mirror prospect theory, as stated earlier, empirical tests of prospect theory have resulted in contradictory results. As such, I suggest that to more accurately assess how well various dynamic compensation contexts work we must directly examine executives' wealth orientation to determine if and when changes occur and under which situations.

I suggest that wealth orientation influences risk behavior as previously predicted. I also suggest that wealth orientation influences how executives may perceive each of the options available to them under various situations, such that one will focus on either the dangers or the opportunities inherent in each choice, depending on where performance lies relative to target (March & Shapira, 1987). In addition, understanding changes in the wealth orientation of executives may allow us to better predict the level or type of search behavior executives may engage in response to various incentives and situations or if they will search at all (i.e., an orientation toward increase would be likely to result in greater search than an orientation toward maintenance). Finally, I propose that understanding wealth orientation will allow us to move closer to integrating agency and behavioral theory and help us better understand how executives perceive and are considering responding to various compensation contexts and to better gauge the effectiveness of compensation forms and the compensation contract.

Since the concern here is with the design of compensation as opposed to the context surrounding a compensation agreement (e.g., Bloom and Milkovich, 1998), I focus on the elements of the compensation agreement that can affect the agent's perception of both the value of the compensation at risk, and the agent's perceived control over receiving this value. Although, I believe that context plays an important role in influencing the design of compensation, the purpose here is to understand how manipulating the elements of compensation design may influence agents' reactions to compensation.

Figure 1
The Full Model

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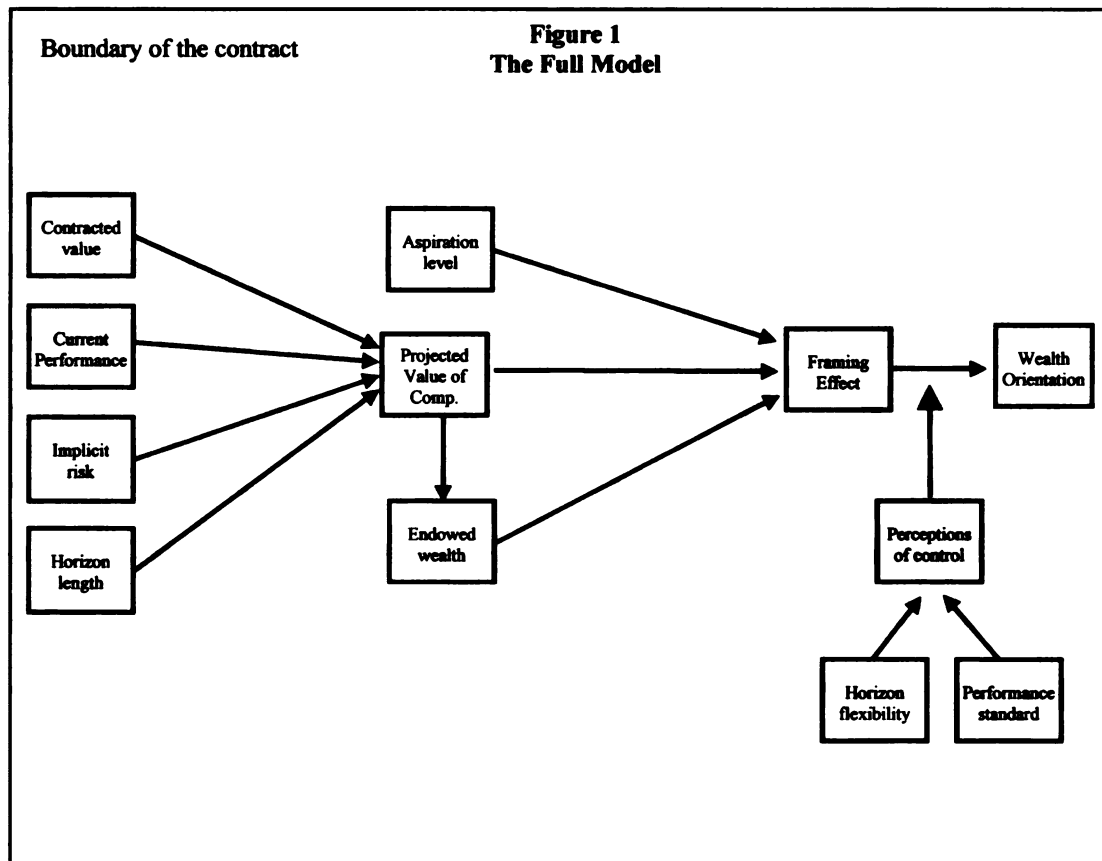
To this end, I argue that within the compensation contract, wealth orientation is a result of two distinct influences. The first is the comparison of the projected value of future compensation at risk to a reference point of either endowed wealth or an aspiration for wealth (both will be explained in a subsequent section). The second is the perceived control over receiving that compensation (see Figure 1 for the full model).

The next section will address the manner in which agents calculate the projected value of various forms of compensation and examine the effects of this value on two perceptual constructs that affect wealth orientation through a reference point comparison process.

How Do Executives Value Compensation?

Typically, models of compensation segregate variable forms of pay, such as cash bonuses, from fixed forms of pay, such as base pay, under the assumption that variable forms are more at risk than fixed pay. On the surface this split seems reasonable since by definition, the amount of variable forms of pay awarded should vary from period to period, as it is generally made contingent upon the agent satisfying certain performance requirements specified in the contract. In other words, unlike base salary, the precise amount of money agents may ultimately realize from variable forms of pay is not assured[1]. Using this view, in our analyses, we must treat incentive pay such as stock options as just that, a carrot, or an incentive, that *may* be received contingent upon performance, as opposed to a sure reward for past performance. However, it is common that researchers operationalize the proportion of pay considered "at risk" within the contract into a single variable by combining the amount of ex post awards (e.g, prior cash bonus awards) with ex ante estimates of long term awards (e.g., the Black-Scholes (1973)

model is often used to estimate the future contribution to wealth of stock options at the time of award, which occurs several years prior to vesting). I argue that this practice is problematic for several reasons. The most obvious is that combining ex ante pay estimates and ex post amounts into a one variable confounds its meaning, causing one to question whether it is an estimate of potential pay available to the agent, or a measure of actual pay realized. Further, it is not clear that measures of actual pay awarded ever provide reasonable proxies for the amount of potential pay promised in the contract. For example, using cash bonus pay awarded in this manner assumes that this ex post amount provides an accurate proxy for the potential anticipated amount of the bonus contained in the contract at the beginning of the contract period. However, one cannot assume with confidence that all agents regularly reap the maximum award possible, as some will earn the maximum allowable within their contracts, while others will not. Consequently, measures that use *cash bonus pay awarded* likely underestimates the potential bonus pay available to the agent at the start of the compensation contract.

Conversely, the value of stock options is generally operationalized using estimates of the future value of these awards to agents taken at the time of the award. In this sense, these measures are approximations of the value agents *may* later realize, given a set of assumptions about the future (i.e. continued employment and stock price appreciation, etc.), not all of which reflect the nature of stock options[2]. As a result, I suggest that measures of variable pay that combine ex post awards with ex ante estimates of value result in combining pay types that might actually have conflicting risk properties

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[1] Note that employment risk could threaten even fixed forms of pay.
[2] For example, stock options are not exercisable until some future date, and are never tradable in the same sense that financial options may be traded. The lack of a secondary market for stock options calls into question the use of valuation models such as the Black-Scholes (c.f., Hall and Muphy, 2000).

for executives (i.e. there would be risk attached to ex ante estimates of contingent pay; however there would be no risk associated with ex post measure of compensation, as it is already paid). This holds serious implications for the study of the incentive properties of compensation schemes, leading one to question previous empirical findings involving variables constructed in this manner.

Furthermore, I also suggest that traditional measures of compensation value generally do not distinguish between the projected value that an agent perceives s/he will gain from different pay forms and the actual amount of pay that agent may receive or is promised. By consciously lumping all forms of variable pay together, researchers assume that these types of pay are fungible such that agents do not distinguish between different forms of pay. That is, agents perceive and treat these forms of pay the same. However, since, individuals segregate personal wealth into various mental accounts, including current income, current assets, and fully anticipated future income (Shefrin & Thaler, 1988; Thaler, 1980) it is likely that agents make distinctions among various pay forms as well. In fact, research findings are beginning to support this assumption. For example, Larraza-Kintana, Wiseman, Gomez-Mejia, & Welbourne (1999) found that executives of IPO firms primarily use base salary for month to month expenditures, while pay from stock options is primarily put toward savings. This suggests all pay forms may not be fungible; hence, executives may value distinct forms of pay differently depending upon the amount contractually promised and the uncertainty attached to that pay form.

As such, I suggest that the projected value of contingent compensation includes that pay which is contractually obligated (as performance targets are achieved or expected to be achieved), but not yet paid to the agent. This includes cash bonuses and

long-term incentive pay for which the targets that trigger bonus awards, have been achieved (or are expected to be achieved) - but must be maintained, the value (actual spread) of unexercised, not-yet-vested stock options, the current market value of unvested restricted stock awards, and future base pay. Although this projected value is expected, it is not certain to be dispersed as it could eventually be reduced or lost due to termination or declines in performance that jeopardize the award[3].

In sum, I argue that agents calculate a projected value for each form of compensation, which does not necessarily reflect the amount estimated by measures such as the Black-Scholes, past awards, or the amount eventually awarded. Instead, this projected value is driven in large part by characteristics of the pay itself as contained within the compensation contract. That is, the projected value of compensation is the value agents *project* they may eventually receive from a given form of pay at the conclusion of the compensation contract. I argue that this projected value is a function of four influences: the amount of pay promised in the compensation contract, the current performance of the particular form of pay, the implicit risk attached to the particular form of pay, and the length of the time horizon to final award of that form of pay.

For example, the contracted value of contingent compensation reflects the amount that is specified in the contract. In the case of a bonus (long- or short-term), this value will typically fall between a specified floor (the minimum bonus value or threshold) and a specified ceiling (the maximum value or cap) attainable by achieving performance targets. Generally, in the case of options (or similar forms of compensation), this value would have a floor (zero for options "underwater") yet have an unlimited ceiling, unless

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[3] For reasons of simplicity we set aside issues of golden parachutes and other elements of a compensation contract which would protect the agent from losses in the event of termination.

otherwise specified by the contract. Lastly, in the case of restricted stock, this value would again have a floor (zero, prior to vesting as there generally is no strike price or purchase required; however, this value could fall below zero if retained and the market price declines below the taxes paid on the award); however, the ceiling is likely unlimited (as in the case of options).

Current performance influences how executives value each individual form of future compensation in their pay package. For example, in the case of a bonus, if performance targets are met (or appear that they will be met) it is likely that the agent will assign a positive figure to the projected value of the bonus, based upon the amount specified in the contract (see above). In the case of options and restricted stock, it is likely that agents compare the market performance of the stock to the strike price specified in the contract and use this comparison to formulate the projected value of compensation.

In addition, I suggest that executives then adjust their projected value of compensation to accommodate two characteristics of the particular form of pay: its time horizon (time before actual payment) and the inherent variability of the particular form of pay over time (referred to as implicit risk). Gray and Cannella define compensation time horizon "as the extent to which the total compensation package provides financial rewards to the executive based on long-term performance outcomes" and suggest that incentives tied to executive compensation vary with the length of the compensation time horizon. (1997:523). I agree that the time horizon of compensation is an important dimension of compensation design; however, I challenge the view that pay tied to multiyear performance targets will unequivocally encourage executives to act in a

manner that will increase the long-term performance of the firm. In my view, this argument is void of any consideration of the risk properties of the time horizon.

To illustrate, base salary is typically paid beginning with the first month of employment and is paid regularly throughout the time frame of the contract. On the other hand, cash bonuses are generally awarded annually and thus not granted until the end of year. Finally, agents may not benefit from certain long-term forms of compensation for several years. For example, gains from stock options cannot be realized until after those options are vested, often three to four years from award. From a simple recognition of the time value of money compensation received in the present has greater value than an equal amount of compensation to be paid in the future (i.e. agents assign greater value to pay awarded in the current year (e.g., end-of-year bonus) than to pay promised in future years (e.g., multi-year incentive pay).

Additionally, the further into the future a compensation award is promised, the greater the chance that exogenous factors may intervene and prevent the award. For example, if a cash bonus is contingent upon maintaining a specific stock price, the further away the award is made, the greater the possibility that economic conditions could deteriorate lowering stock price and eliminating the promised bonus.

As Shelly and Omer state, "[m]anagers are not indifferent to the timing of compensation. In general, they are impatient (i.e. their discount rates are positive), which makes current receipts more valuable than future receipts of the same size" (1996, pp. 45). Thus, at a minimum, one would expect agents to discount the projected value of future compensation relative to pay awarded in the present.

In addition to the discounting for time, there is empirical evidence that agents recognize and factor the implicit risk (the inherent variability of the outcome), into their projected value of a form of future compensation (Stevenson, 1986; Shelley & Omer, 1996). That is, if variable pay is truly variable (whether due to endogenous or exogenous factors), we expect agents to discount future pay over and above the discount for time, based on their subjective assessment of pay variability and uncertainty of award, or the implicit risk to the compensation that creates a sense of loss for the agent (Shelley, 1993). This risk-adjustment essentially discounts the value of anticipated future pay by its inherent volatility or uncertainty. At one extreme, future base pay exhibits little or no volatility over the length of the contract (holding raises and cost of living adjustments constant) and thus exhibits low implicit risk. At the other extreme, the spread in stock options, being tied directly to stock price, may seem to have the most volatility relative to other forms of pay and thus contain high implicit risk, such as stock options in the dotcom industry craze in the late 1990's. Thus, I suggest that executives further adjust the projected value of compensation by its implicit risk. Forms of pay that exhibit high implicit risk would be discounted more than forms of pay exhibiting less implicit risk. For example, if the value of stock options (i.e., the spread) is rising steadily over time during a period of economic munificence, we would expect agents to assign a much lower discount to their projected value (and may even appreciate its value as agents often did in the dot com industry during the late 1990's) than agents of firms with dismal prospects, a declining stock price, and a hostile economic climate.

In support of this argument, Shelley & Omer (1996) used a laboratory study to manipulate implicit risk and time separately, and found evidence that agents discount

future pay for both time and implicit risk independently. This finding implies that agents are likely to discount highly variable forms of pay (such as pay linked to stock price, i.e., stock options) more heavily than pay that is relatively static (more certain) over time (e.g., base salary or constant annual bonuses). While this discounting may not reflect large differences under conditions of low inflation and short time horizons, it can represent substantial discounts of long-term incentive pay under inflationary conditions. The practical point of this argument is that agents may assign a very low value to currently unexercisable stock options[4], even those with a positive spread, if they are not exercisable for several years, firm performance is volatile, and the economic environment is unstable. This challenges current models of compensation, which assign a positive value to stock options (even under-water options) from the time of award based on simple assumptions about stock price appreciation (e.g. the Black-Scholes assumes 5% growth rate).

In sum, the use of actual (or even estimated) amounts of pay requires researchers to assume that agents assign a projected value to future pay that is commensurate with the cost of that pay to shareholders. Challenging this assumption is evidence that agents under-value some forms of pay (e.g., stock options) relative to the cost of that pay to shareholders (Hall & Murphy, 2000). This differential discounting may explain why different forms of pay are used for different purposes. The implication of this argument is that agents may assign values to some forms of highly variable compensation differently than less variable forms.

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[4] It is likely too difficult computationally for agents to disentangle each stock option award; hence it is likely that they simply categorize options into those that are exercisable and those that are not yet vested.

This argument echoes those by Hall and Murphy (2000, 2002) that agents under-value stock options relative to the value assigned them by models such as Black-Scholes. Consistent with their view, agents appear to discount new stock option awards because they generally cannot be exercised for several years, the stock price (the basis for determining spread and ultimately the realized value) is volatile, and agents generally don't hold options for the entire period assumed in models of valuation (i.e. agents generally cash out options before they reach their theoretical maximum value). In this model, as vesting of an option approaches, the effect of the time horizon diminishes, thus the agent's discounting of that option is reduced. However, I suggest that the discounting of the perceived value of options held never reaches zero, since exercisable options continue to exhibit a positive level of implicit risk. As a result, the relation of perceived value to the actual spread of an option is concave in relation to time. Once stock options are vested, however, agents continue to discount the spread to accommodate for inherent volatility of the stock (implicit risk) similar to what equity owners do in assessing the value of their equity ownership. In sum, I argue that the generally accepted measures of stock-based compensation (i.e. Black-Scholes and other similar measures) do not accurately reflect executives' valuations of pay. Consequently:

> Hypothesis 1: Implicit risk is negatively associated with the projected value of a form of compensation.

> Hypothesis 2: The length of the compensation time horizon is negatively associated with the projected value of a form of compensation.

The valuation process I describe has important implications for executive compensation research as it suggests that incentive properties (the effects of compensation) can be quite different across different forms of contingent pay, raising

questions about the effectiveness of various types of pay as motivational tools for agents. More interestingly, it suggests that these properties can vary within forms of pay at various points during their compensation horizon, particularly in the case of options and restricted stock. This will be addressed below in the discussion of how the projected value of compensation influences the perceptual constructs of endowed wealth and problem framing.

What are the Effects of Executive Compensation?

Problem framing. As discussed above, research in behavioral decision theory finds that across contexts agents' risk preferences and risk taking behaviors are not isomorphic (Shapira, 1995; Wiseman & Gomez-Mejia, 1998). In particular, advocates of prospect theory suggest that decision makers frame decisions around a reference point of current personal wealth in hand (Kahneman & Tversky, 1979) and that prospects for positive changes to this current wealth create a gain context, while prospects for losses to this wealth create a loss context (Kahneman & Tversky, 1979; Hodgkinson, et al, 1999; Sitkin & Pablo, 1992).

In their discussion of problem framing, Wiseman and Gomez-Mejia, (1998), expanded the concept of current personal wealth to include endowed wealth (fully anticipated money, not just money in hand). Building on this definition, I suggest that in relation to contingent compensation, endowed wealth is that portion of the projected value of future compensation contained within the compensation agreement the executive has already factored in to calculations of personal wealth.

This notion of endowed wealth derives from the previously established concepts of mental accounting (Thaler, 1980, 1985; Kahneman & Tversky, 1984) and endowment

(Thaler & Johnson, 1980; Kahneman, Knetsch, & Thaler, 1990). As discussed, empirical research on mental accounting has found that individuals do not view personal wealth as fungible (Shefrin & Thaler, 1988; Thaler, 1980). Combining the mental accounting process with notions of endowment effects (Thaler & Johnson, 1980; Kahneman, Knetsch, & Thaler, 1990), I suggest that executives may endow any or all of their projected value of a particular form of contingent compensation into any one of these three accounts, subsequently raising their current perceived level of personal wealth (Wiseman & Gomez-Mejia, 1998). Although the endowment of future contingent compensation has not been documented empirically, anecdotally, we witnessed many executives and employees endow portions (or all) of the projected value of stock options into their fully anticipated current or future income accounts (hence, personal wealth), during the recent high tech market bubble of the late 1990's. This is evidenced by the fact that in that robust market, many willingly chose to trade salary for stock options. However, when share prices severely declined these individuals began to feel burned, with many demanding (and getting) higher salaries or raises to compensate for their perceived losses of personal wealth.

Although this anecdotal evidence exists, other than Kahneman, Knetsch, and Thaler (1990), there has been little discussion about how the endowment process operates. I suggest that in the case of contingent compensation, endowed wealth is a function of factors both endogenous and exogenous to the contract. For example, I argue that wealth is endowed when executives endow (mentally shift) some or all of the projected value of future compensation into any one of their personal wealth accounts. I also suggest that endowment rises with positive changes in the current projected value of

compensation, although this adjustment process is likely not a one-to-one matching. Following the logic of Kahneman and Tversky (1979), it is doubtful that executives immediately adapt to increases in their projected value of compensation. Consequently, it is likely that this new value is not immediately endowed into personal wealth accounts. Rather, increases in endowed wealth lag increases in projected compensation by some adjustment period. I also suggest that shifts in endowed wealth are asymmetric with changes in the current projected value of compensation. That is, following notions of the life-cycle hypothesis (Shefrin & Thaler, 1988) executives are likely to adapt easily to higher levels of wealth, but will resist negative changes to wealth. As such, executives are unlikely to immediately lower their endowed wealth reference points following decreases in the projected value of compensation (Wiseman & Gomez-Mejia, 1998). Therefore, it is likely that over time, the endowed wealth reference point will increase incrementally with (although lag) increases in the current projected value of compensation; however, it will fail to decrease in the same manner with declines in this value (Kameda and Davis, 1990; Gooding, Goel & Wiseman, 1996)

I also argue that endowed wealth is driven by factors exogenous to the contract. For example, Kahneman, Knetsch, and Thaler (1990) found that the endowment effect seems to largely be driven by individual differences or preferences. As such, this evidence suggests that if executives do endow any portion of the projected value of future compensation, this process will occur at different rates across individuals. For example, it is likely that this endowment is driven by the past performance of executives' own compensation (March & Shapira, 1992) or executives' confidence or hubris, stemming from recent successes, media attention, or self-importance (Hayward & Hambrick, 1997).

However, since these individual level factors are derived external to the compensation contract, a more complete analysis is beyond the scope of this paper. Therefore, I suggest that when wealth is endowed from a particular form of compensation a reference point of endowed wealth, influenced by both changes in the current projected value of that compensation form (Wiseman & Gomez-Mejia, 1998) and individual differences emerges. Hence:

Hypothesis 3a: The current projected value of compensation is positively associated with the endowed wealth reference point.

Hypothesis 3b: When the current performance of a form of compensation declines the endowed wealth reference point will decrease more slowly than the projected value of compensation.

Furthermore, I argue that agents frame decisions made on behalf of principals by the expected effect of those decisions on personal wealth, such that executives compare their current projected value of a form compensation to this reference point of endowed wealth from that same pay form. Furthermore, when the projected value of compensation exceeds the reference point of endowed wealth a gain context is created; conversely, when the projected value of compensation falls below the reference point of endowed wealth a loss context emerges.

Attainment discrepancy. Though occasionally used interchangeably with problem framing as specified in prospect theory (Kahneman and Tversky, 1979), I suggest that attainment discrepancy represents a specific type of problem framing. Attainment discrepancy revolves around an aspiration for performance, and as such, reflects the attainment of a wealth goal that is fixed throughout the compensation contract, rather than an appraisal of prospects for changes to perceptions of contributions to existing personal wealth. The aspiration level reflects the amount of wealth the agent seeks from

a particular form of compensation and is essentially a predetermined goal for wealth. In contrast, the endowed wealth reference point, as discussed previously, rests on counted (endowed) wealth, which I argue includes a portion of the projected value of compensation from current contingent compensation.

As it pertains to the compensation contract, the endowed wealth reference point, does not emerge until this perceived contribution assumes a positive value and can continuously adjust upward with this value throughout the compensation time horizon. However, the formation of the aspiration level is largely driven by factors external to the compensation contract. For example, I suggest that executives use social comparison (O'Reilly, Main, & Crystal, 1988), and peer contingent compensation figures (Gomez-Mejia & Wiseman, 1997) as a basis for determining compensation aspiration levels. To illustrate, equity theory (Adams, 1963, 1965) would suggest that executives regularly compare their compensation to that of a reference group of executives. Consequently, as the compensation figures of referents rise, and this information is made available by compensation consultants and the media, executives' compensation aspirations will also rise to match that figure (Wiseman & Gomez-Mejia, 1998). Furthermore, Lant (1992) finds that there is typically an optimistic bias in the formulation of aspiration levels. This indicates that agents may establish a baseline of expected wealth and then adjust this figure upward to arrive at the final aspiration level (Lant, 1992).

I argue that the aspiration level is vital in determining performance feedback or attainment discrepancy (March & Shapira, 1992) in the case of contingent compensation such that when the current projected value of compensation exceeds the aspiration level a positive discrepancy exists and when the current projected value of compensation is

below the aspiration level a negative discrepancy exists (Lant, 1992). I suggest that discrepancies have important implications for compensation design, as March & Shapira (1992) find that positive attainment discrepancies result in risk avoidance and negative attainment discrepancies result in risk seeking.

However, I suggest that it would be cognitively difficult for executives to explicitly separate and independently evaluate the effects of both problem framing and attainment discrepancy simultaneously. Consequently, I suggest that executives' problem framing (the perception of being either *ahead* or *behind)*, depends upon where current performance lies relative to the reference point that is salient at that particular time (see March & Shapira, 1987, 1992 for a discussion of the shifting focus of attention between multiple reference points). In other words, executives focus on one reference point (endowed wealth or the aspiration level) at a time and this salient reference point drives problem framing; however, the point that is salient may change over time. Hence:

> Hypothesis 4a: Controlling for the endowed wealth reference point and aspiration level, the projected value of compensation will have a positive influence on framing.

> Hypothesis 4b: Controlling for the projected value of compensation and aspiration level, the endowed wealth reference point will have a negative influence on framing.

> Hypothesis 4c: Controlling for the projected value of compensation and the endowed wealth reference point the aspiration level will have a negative influence on framing.

> Hypothesis 5: A maximum of one reference point will drive problem framing.

Perceptions of Control Over Pay

As noted above, executive's wealth orientation is a function of two primary factors, the projected value of compensation that is at risk and the executive's perception

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of control over receiving that value. Having described how executives may value future compensation, I now turn to how they may assess risk to this value. In particular, I look at how dimensions of the compensation agreement influences perceptions of control over receiving anticipated pay. I argue that two dimensions of compensation design influence agent perceptions of control: the performance measures used in gauging agent effort and the flexibility of the time horizon of the particular form of contingent compensation. As I will argue, these two dimensions of the design of a compensation scheme influence agent perceptions of control over the outcomes used by principals to determine whether to award pay or not.

Performance standards. Contingent pay is frequently tied to either internal standards weighting performance relative to some target endogenous to the firm or external standards, weighting performance relative to a target exogenous to the firm. Internal standards are often accounting based, while external standards are generally market based. I argue here that both can have differential effects on executives' perception of control such that internal standards will create greater perceptions of control than external standards. To illustrate, internal standards (i.e. accounting standards) can be highly influenced by executives' actions, while external standards (i.e. market- based standards) contain more noise and are more difficult for executives to directly influence (Lambert, 1993; Wiseman & Gomez-Mejia, 1998; Murphy, 1999), particularly in the recent business environment. In addition, Murphy (2000) recently found that firms adopting internal determined standards are more likely to show evidence of income smoothing than firms with externally determined standards, supporting the view that executives can more easily influence internal standards than external standards.

Finally, internal standards based on accounting measures are more easily manipulated by executives through changes in debt structure, inventory management procedures, accounting procedures and so forth. Consequently, I argue that the use of internally focused measures of performance creates a greater perception of control for the agent than external standards.

> Hypothesis 6: Contingent compensation forms tied to internal standards will create greater perceptions of control than contingent compensation forms tied to external standards.

Compensation time horizon flexibility. Earlier I discussed how the length of the compensation time horizon (the length of the compensation contract for each particular form of pay) influences the manner in which agents derive the projected value of each particular compensation form. Specifically, longer time horizons are likely to reduce the value of projected compensation (c.f., Shelley & Omer, 1996). In addition I suggest that the flexibility of the compensation time horizon has a separate effect that can influence agents' perceived sense of control over the compensation form. For example, although common long-term performance incentives such as stock options vest on a specific future date, once vesting is achieved, their exercisability horizon is flexible as agents can opt to hold options until they expire – usually 10 years (Murphy, 1999). Thus, during this flexible period, agents can exercise at their own discretion, essentially allowing them to "time" the exercise of stock option to when it is most advantageous to do so. Consequently in the event that an agent's action has taken a longer/shorter period of time to achieve success or be rewarded by the market, a flexible horizon allows the executive to strike at the most opportune time, affording him/her an increased perception of control.

On the other hand, different long-term incentives such as long-term performance plans can consist of a fixed horizon, in which the evaluation of performance-to-target occurs on a specific date that is fixed at the start of the compensation contract. Consequently, under this arrangement, the agent has no discretion or control over when the performance evaluation occurs. Hence, the timing of "cashing out" cannot be manipulated as in the case of option-like incentives, thus I expect perceptions of control to be diminished.

> Hypothesis 7: Contingent compensation forms that incorporate a flexible horizon will create greater perceptions of control than contingent compensation forms that incorporate an inflexible horizon.

How Well Does Executive Compensation Work? - Influences on Wealth Orientation

Many compensation scholars, following Shapira's (1995) work on risk taking, have suggested that executives give primary weight to protecting or maintaining gains and therefore, assert that agents are principally concerned with loss aversion and are indifferent to uncertainty (Wiseman & Gomez-Mejia, 1998; Sanders, 2001). Consequently, since agents are loss averse, their wealth orientation will focus on maintaining real or perceived gains at the expense of further increasing (enhancing) wealth (Wiseman and Gomez-Mejia, 1998). As such, I extend this argument to recognize the influence of problem framing on wealth orientation.

For example, in the case of positively framed situations executives perceive they are in a gain situation and the desire to maintain those gains dominate their concerns. Conversely, when in the case of a negatively framed problem, executives' concerns shift toward increasing performance (March & Shapira, 1987; Lopes, 1987; Sitkin & Weingart, 1995). Hence to test the loss aversion perspective:

Hypothesis 8: Problem framing is positively associated with wealth orientation such that positive framing is positively associated with a wealth maintenance orientation and negative framing is negatively associated with a wealth maintenance orientation.

Moderating effects of perceptions of control. Furthermore I suggest that it is only when agents lack the perception of control that wealth maintenance emerges as their primary concern (Shapira, 1995). To illustrate, examining the Shapira study more closely reveals that the subjects in this study viewed risk (the potential for loss) differently from gambling (probability or uncertainty) because they perceived as managers that they had some sense of control over their situation. Implicit in this finding is that the perception of control differentiates potential loss and uncertainty. Extending this, as executives' perception of control increases, the influence of a potential loss on wealth orientation is decreased. In turn, as executives' perception of control decreases, the influence of a potential loss on wealth orientation is heightened. Therefore:

Hypothesis 9: The relationship between problem framing and wealth orientation is moderated by perceptions of control such that high perceptions of control will decrease the influence of problem framing on wealth orientation and low perceptions of control will increase the influence of problem framing on wealth orientation.

CHAPTER 4

METHODOLOGY

As stated earlier, it is difficult to expect that results from previous empirical studies that measure the effects of perceptions by using simple expected value gambling contexts fully generalize to executive decision making contexts, as they over inflate the influence of downside risk on risk-taking behavior thus, they do not reflect typical agent compensation situations. In addition, the majority of risky decision studies have been static in nature involving choices between outcomes with clearly stated probabilities for success (Hollenbeck, Ilgen, Phillips, & Hedlund, 1994). Consequently, I tested the model using two dynamic scenario-based studies (see appendices A – I) consisting of multiple (seven) stages mirroring typical executive compensation contexts as suggested in Hollenbeck et al, 1994. Before testing the complete model I tested the measures in each of the scenarios in two pilot studies. These two pilot studies are detailed below.

Pilot Study 1

Subjects. The subjects in this experiment were 30 senior undergraduate business majors in a capstone management course at Michigan State University.

Design and procedures. Subjects voluntarily participated in the study during a single class session. Subjects were given a packet containing a scenario-based questionnaire and scenario background information. The scenario-based questionnaire was a 2 (High Implicit Risk vs. Low Implicit Risk) x 2 (Long Horizon - 3 year vs. Short Horizon – 18 months) x 7 (seven decision periods) factorial design stock option scenario. Subjects were randomly assigned to conditions, completed background information, and were instructed to read the scenario and complete the questionnaire by answering

questions at seven different time periods that varied the current performance of the stock

throughout the compensation time horizon (see below).

Variables

      Contracted value of stock options. For this stock option test, contracted value is

the strike price of the options awarded to the subject ($29.00).

      Current performance. Current performance is the spread between the market

price and the strike price at each of the seven decision points. Current performance by

decision:

> decision 1 = $4.00 per share; decisions 2 – 4 = $13.00 per share; decision
> 5 = $7.00 per share; decision 6 = $4.00 per share; decision 7 = $0.00 per
> share (underwater).

Figure 2
Decision Points
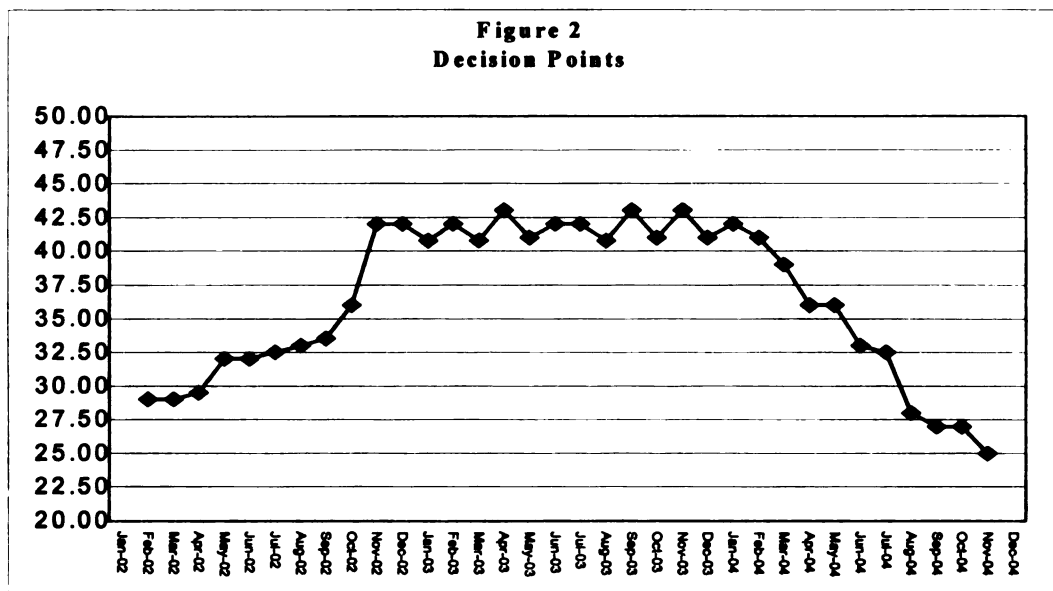
These decision points plotted on the three year horizon are illustrated in Figure 2 (the 18

month horizon is identical other than the differing dates).

      Implicit risk. Following Shelly and Omer (1996), implicit risk was manipulated

in the scenario via the macroeconomic certainty/uncertainty that is attached to the

particular form of compensation (in this case stock options) was chosen to induce

implicit risk. Subjects in the high implicit risk condition read the following:

> Your firm manufactures nonessential components for your customers. As a result, economic conditions directly affect your firm's stock price. Current economic conditions are quite unstable. In addition, your stock price and others in your industry have been quite volatile (rising and falling dramatically) over the last decade. This pattern is projected to continue over the next few years. As such, industry analysts consider your stock to be a <u>high risk</u> investment.

Subjects in the no implicit risk condition read:

> Your firm manufactures critical components for your customers. As a result, your firm's stock price is sheltered from any negative effects of the economy. Current economic conditions are quite stable. In addition, your stock price and others in your industry have generally continued to rise over the last decade. This pattern is projected to continue over the next few years. As such, industry analysts consider your stock to be a <u>very safe</u> investment.

The phrases high risk and very safe were chosen as they reflect the manner in

which analysts rate stocks and bonds. Safe was used rather than no risk as it better

reflects the manner in which no risk is referred to in the investment community and

popular business press. For example: thestreet.com, a popular investment website, uses

the terms safety vs. risk when referring to how to balance your stock portfolio (Seymour,

2002); Standard and Poor's fund ratings assess the *safety* of invested principal.

Morningstar.com discusses risky investments and states, "A bond fund with a risk score

of 1.2 may be riskier than the typical bond offering, but it is probably less risky than a

safe stock fund which has a risk score of 0.8. In addition, bonds rated A and above are

considered quite *safe*, while those just above default (CC) are referred to as highly risky.

In the Ask the Expert segment of CNNmoney.com discusses bonds in their *safe* category.

The implicit risk manipulation was checked via the following measure:

On the scale below please indicate your perception of the likelihood of making your profit goal...

Subjects indicated their response on a seven point scale with the following anchors: 1 = low likelihood and 7 = high likelihood. The t-test results (see Table 1) between conditions were significant (t = 3.873, p<.01) and in the predicted direction (no implicit risk, x = 6.1429, s.d. = .6901; high implicit risk, M = 4.00, s.d. = 1.29). Consequently, the implicit risk manipulation performed as expected.

TABLE 1
Pilot Study 1 - t-test Results

	IMPLICIT RISK				
	No Implicit Risk/18mos		High Implicit Risk/18mos		
Variable	Mean	s.d.	Mean	s.d.	T
Likelihood	6.14	.69	4.00	1.29	3.87, p<.01

Horizon length. Two horizon length conditions (three years and 18 months) are presented. A recent survey by management consultant firm Hewitt Associates reports stock option vesting generally varies from 1-5 years, with 45% of companies using a three-year vesting schedule; only 26% use a four year vesting schedule (Zall, 2000). The three-year horizon was used, as it is the most common vesting period. In order to use a shorter time horizon, yet match the proportion through the time horizon and still remain in the typical vesting period of 1 – 5 years, an 18-month horizon was used.

Subjects in the long horizon condition read:

> In three years (on December 31, 2004) you may purchase any or all of the 10,000 shares for $29.00 per share.

Subjects in the short horizon condition read:

In 18 months (on June 30, 2003) you may purchase any or all of the 10,000 shares for $29.00 per share.

In addition each decision provides the subjects with the current date and time until exercise.

Projected value of compensation (PVC). Following Shelly and Omer (1996), subjects' expectations measured the projected (expected future, but at risk) outcome (in this case future compensation). During each decision period the projected value of compensation was measured using the following question:

At this point in time, what is the profit per share you expect to earn at exercise (when you are able to purchase and resell these shares) in XX years (months)?: $_____ per share.

Endowed wealth. During each decision period subjects' level of endowed wealth was measured using the following question:

At this point in time, what is the profit per share you are confident enough to use to secure financing on a purchase you really want to make?: $_____ per share.

To my knowledge this is the first explicit empirical test of the difference between projected (expected) and endowed wealth. Consequently, the term secure financing was used to illustrate subjects' confidence in the imminent addition to personal wealth and the finality of the decision.

Aspiration level. The same aspiration level was assigned to subjects in all conditions. Subjects in all conditions read:

YOUR GOAL
Your goal, set by the board of directors, is to increase your firm's stock price to $35.00 a share (by December 31, 2004/June 30, 2003).

The following question, asked prior to beginning the scenario, serves a manipulation check:

What is your profit per share goal at exercise (when you are able to purchase and resell these shares?: $_____ per share.

Problem framing (PF). As discussed above, it is cognitively difficult for agents to explicitly separate and independently evaluate what actually drives their feelings completely (Fiske & Taylor, 1991). As such, a general perception of subjects' feelings (perceptions) of being ahead or behind (a framing effect) was measured with a single scale, via the following measure:

At this point in time I feel as though the shares are performing...

Subjects indicated their response on a seven point scale with the following anchors: 1 = behind where I'd like them to be and 7 = ahead of where I'd like them to be.

Wealth orientation. The following scale was constructed to assess subjects' wealth orientation specific to this stock option scenario. In addition, the anchors of maintaining the current stock price and increasing the current stock price specifically addressed and tested the wealth maintenance (loss aversion) assumption of behavioral decision theory. As such, wealth orientation was measured using the following item:

At this point in time I am more concerned about...

Subjects indicated their response on a seven point scale with the following anchors: 1= increasing price and 7 = maintaining price (wealth orientation was reverse coded).

The PF measure and the wealth orientation measures are correlated. To test for multicollinearity, a multiple regression equation that regressed wealth orientation on the PF variable and a lagged wealth orientation (from the prior decision) was significant (both IVs were also significant). The variance inflation factor for this equation was 1.78,

which is well below the recommended cutoff of 10.0. The actual spread and means for

problem framing and wealth orientation are shown in Figures 3 & 4.

Figure 3
Actual Spread

Figure 4
Problem Framing and Wealth Orientation
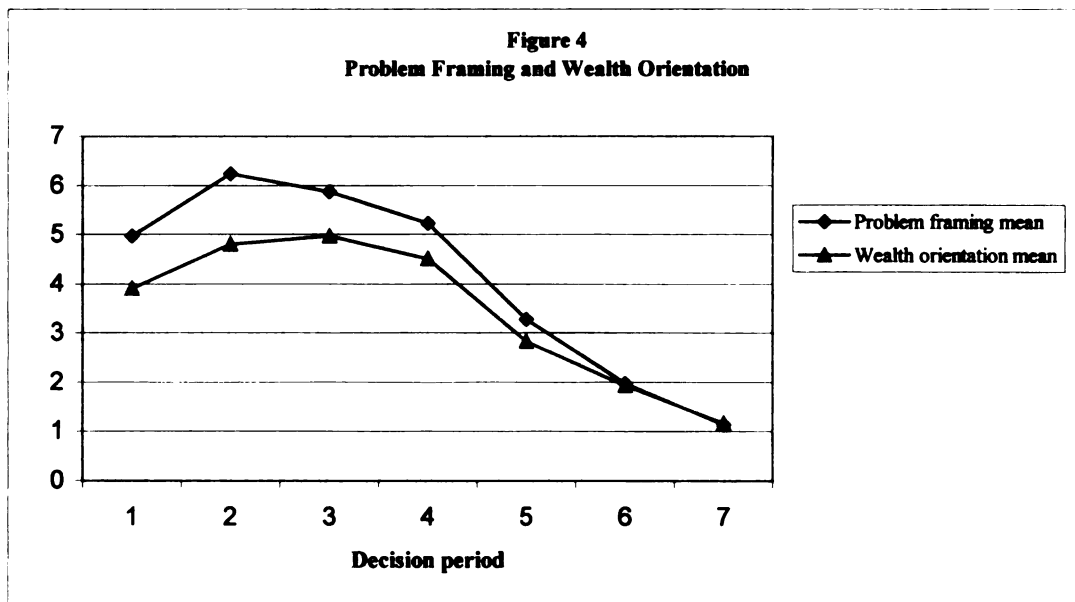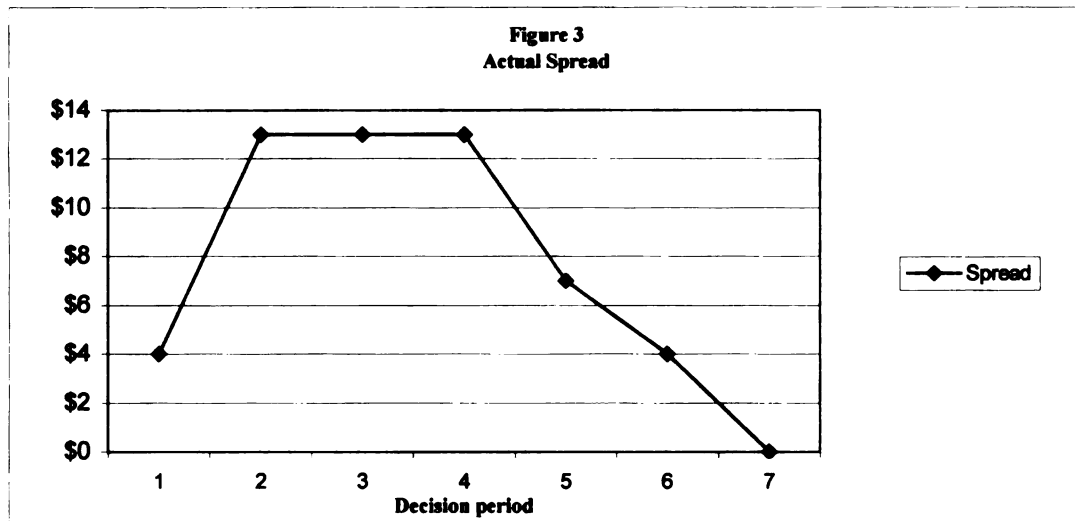
Pilot Study 2

This study was designed to test the effects of performance standards and horizon

flexibility on subjects' perception of control.

Subjects. The subjects in this experiment were 33 senior undergraduate business majors in a capstone management course at a large Michigan State University.

Measures

Design and procedures. Subjects voluntarily participated in the study during a single class session. Subjects were given a packet containing a scenario-based questionnaire and scenario background information. The scenario-based questionnaire was a 2 (Internal vs. External Performance Standard) x 2 (Flexible vs. Non-Flexible horizon) x 7 (seven decision periods) factorial design bonus scenario (see appendix 2). Subjects were randomly assigned to conditions, completed background information, and were instructed to read the scenario and complete the questionnaire across seven different decision periods that varied the current performance of the bonus compensation throughout the compensation time horizon (see below).

Perceptions of control. Subjects' perceptions of control were measured via the following measure:

> On the scale below please indicate the level of control you feel you have over the structure of this bonus (how much control do you feel you have over your firm exceeding last period's (the industry average) sales in the allotted time frame?).

Subjects indicated their response on a seven point scale with the following anchors: 1 = low control and 7 = high control. T-test results between internal and external standard conditions (see Table 2) were significant (t = 4.51, p<.001) and in the predicted direction (internal standard, M = 6.33, s.d. = .7071; external standard, M = 4.25, s.d. = 1.17). T-test results between the flexible and non-flexible time horizon conditions (see Table 2)

were significant (t = 2.92, p<.05) and in the predicted direction (flexible horizon M = 6.33, s.d. = .71; non-flexible standard, M = 5.13, s.d. = .35).

TABLE 2
Pilot Study 2 - t-test Results

INTERNAL VS EXTERNAL STANDARD

Variable	Internal/flexible		External/flexible		
	Mean	s.d.	Mean	s.d.	t
Perception of control	6.33	.71	4.25	1.17	4.51, p<.001

FLEXIBLE VS NON-FLEXIBLE HORIZON

	Flexible/Internal		Non-Flexible/Internal		
	Mean	s.d.	Mean	s.d.	t
Perception of control	6.33	.71	5.13	.35	2.92, p<.05

Consequently, the internal/external measure and horizon flexibility manipulations performed as expected. All other variables used were constructed identically to pilot study 1.

The measures tested in pilot study one and pilot study two were used in two studies that tested the complete model. These studies are described below.

Study 1

Methods

Subjects. Subjects in this experiment were 137 executive and weekend master of business administration students in a management class at Michigan State University.

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Over 95% of these students had received some form of contingent pay, with 55% having direct experience with stock options. Eighty-two percent of the subjects were men.

Design and procedures. Subjects voluntarily participated in the study during a single class session. Subjects were given a packet containing a scenario-based questionnaire and scenario background information. The scenario-based questionnaire was a 2 (High Implicit Risk vs. No Implicit Risk) x 2 (Long Horizon – 3 years vs. Short Horizon – 18 months) x 7 (seven decision periods) factorial design stock option scenario (see appendix 1). Subjects were randomly assigned to conditions, completed background information, and were instructed to read the scenario and complete the questionnaire by answering questions at seven different time periods that varied the current performance of the stock throughout the compensation time horizon (see below).

Measures

Contracted value of stock options. For the stock option scenario, contracted value is the strike price of the options awarded to subjects ($29.00).

Current performance. Current performance is measured as the spread between the market price and the strike price at each of the seven decision points. Current performance by decision:

> decision 1 = $4.00 per share; decisions 2 through 4 = $13.00 per share; decision 5 = $7.00 per share; decision 6 = $4.00 per share; decision 7 = $0.00 per share (these numbers are identical to those used in pilot study 1).

Implicit risk. Following Shelly and Omer (1996), implicit risk was manipulated as a between groups factor identically to pilot study 1.

Subjects in the high implicit risk condition read the following:

Your firm manufactures nonessential components for your customers. As a result, economic conditions directly affect your firm's stock price. Current economic conditions are quite unstable. In addition, your stock price and others in your industry have been quite volatile (rising and falling dramatically) over the last decade. This pattern is projected to continue over the next few years. As such, industry analysts consider your stock to be a <u>high risk</u> investment.

Subjects in the no implicit risk condition read:

Your firm manufactures critical components for your customers. As a result, your firm's stock price is sheltered from any negative effects of the economy. Current economic conditions are quite stable. In addition, your stock price and others in your industry have generally continued to rise over the last decade. This pattern is projected to continue over the next few years. As such, industry analysts consider your stock to be a **very safe** investment.

Subjects indicated their response on a seven point scale with the following anchors: 1 = risky form of compensation and 7 = safe form of compensation.

The implicit risk manipulation was checked via the following measure:

On the scale below please indicate your perception of the likelihood of making your profit goal...

Subjects indicated their response on a seven point scale with the following anchors: 1 = low likelihood and 7 = high likelihood. The t-test results between conditions (see Table 3) were significant (t = 5.23, p<.001) and in the predicted direction (no implicit risk, M = 5.67, s.d. = .98; high implicit risk, M = 4.66, s.d. = 1.26).

TABLE 3
Implicit Risk [a]

Variable	No Implicit Risk		High Implicit Risk		
	Mean	s.d.	Mean	s.d.	T
Likelihood	5.67	.98	4.66	1.26	5.23, p<.001

1= low & 7 = high

In order to ensure that implicit risk manipulation was driving subjects' responses above it was necessary to ensure that subjects' perceptions of implicit risk (their general beliefs about the risk of stock options as a form of compensation) were replaced with the level of the implicit risk inherent in each condition. As such, prior to the manipulation, subjects were asked to provide their general assessment of the risk of stock options as a form of compensation with the following item:

> Please rate your feelings about the risk of stock options as a form of compensation

Subjects' indicated their response on a seven point scale with the following anchors: 1 = risky form of compensation and 7 = safe form of compensation. This assessment of the risk of stock options and the dichotomous variable implicit risk were entered into a regression equation. The implicit risk manipulation demonstrated a significant and negative influence on likelihood responses ($p<.001$); however, subjects prior beliefs had no significant influence indicating that subject's prior beliefs had no significant influence on the results of this study (see Table 4).

TABLE 4
Likelihood[a]

	Model 1		Model 2	
Riskiness of options (prior belief)	.02	(.07)	.02	(.06)
Implicit risk			-1.00***	(.19)
Adjusted R^2	-.01		.16***	
Increase in adjusted R^2			.16***	
Df	135		134	

[a] N= 137. ***p<.001

Horizon length. Two horizon length conditions (three years and 18 months) were presented.

Subjects in the long horizon condition read:

> In three years (on December 31, 2004) you may purchase any or all of the 10,000 shares for $29.00 per share.

Subjects in the short horizon condition read:

> In 18 months (on June 30, 2003) you may purchase any or all of the 10,000 shares for $29.00 per share.

In addition each decision provides the subjects with the current date and time until exercise.

Projected value of compensation (PVC). Following Shelly and Omer (1996), subjects' expectations measured the projected (expected future, but at risk) outcome (in this case future compensation). During each decision period subjects' projected value of compensation was collected using the following question:

> At this point in time, what is the profit per share you expect to earn at exercise (when you are able to purchase and resell these shares) in XX years (months)?: $_____ per share.

Endowed wealth. During each decision period subjects' level of endowed wealth was measured using the following question[5].

> At this point in time, what is the profit per share you are confident enough to use to secure financing on a purchase you really want to make?: $_____ per share.

Aspiration level. Subjects' aspiration level was manipulated in the scenario.

Subjects in all conditions will read:

---

[5] The following question was also used with the EMBA sample to measure the amount subjects had endowed into their perceptions of personal wealth: *Defining personal wealth to include both current income and fully anticipated future income, at this point in time, what profit per share would you include in your calculations of personal wealth?* The two questions were significantly and highly correlated (above .84, p<.01, for each decision) and the average measure intraclass correlations were all above .90). One question was desired to reduce subject fatigue; as such, the endowed wealth question above was chosen.

YOUR GOAL.
Your goal, set by the board of directors, is to increase your firm's stock
price to **$35.00 a share** (by December 31, 2004/June 30, 2003).

Subjects were asked to complete the following item prior to beginning the

scenario as a manipulation check:

What is your profit per share goal at exercise (when you are able to
purchase and resell these shares?: $_____ per share.

Interestingly less than half (48.6%) of subjects set a profit per share goal of $6.00

per share at exercise; while 51.4% varied from the intended manipulation. As such,

subjects' reported goals are used in the analysis as the aspiration level. More specifically,

consistent with Lant, 1992, 40.9% indicated that their goal exceeded $6.00 per share

(range $7.00 to $35.00), while 10.2% set a goal lower than $6.00 (range $0.00 to $5.90)

reflecting a positive bias in the setting of aspiration levels. This finding will be elaborated

on in the discussion section.

Problem framing (PF). As discussed above, it is cognitively difficult for agents to

explicitly separate and independently evaluate what actually drives their feelings

completely (Fiske & Taylor, 1991). As such, problem framing was measured with a

single scale, via the following measure:

At this point in time I feel as though the shares are performing...

Subjects indicated their response on a seven point scale with the following

anchors: 1 = behind where I'd like them to be and 7 = ahead of where I'd like them to be.

Wealth orientation. The following scale was constructed to assess subjects'

wealth orientation specific to this stock option scenario:

At this point in time I am more concerned about....

Subjects indicated their response on a seven point scale with the following anchors: 1= increasing price and 7 = maintaining price (wealth orientation was reverse coded)

Controls. I controlled for subjects' gender and group membership (EMBA vs. weekend MBA group). Group membership demonstrated a significant positive influence on endowed wealth and a significant negative influence on wealth orientation. Group membership was not significant in any of the other the models and its removal did not affect the results. Consequently, in the interest of parsimony, the results I report include group membership only in models in which it was a significant influence. Further, gender did not demonstrate a significant influence in any of the analyses and its removal did not affect the results; hence, for it was dropped. In my initial estimations I also controlled for subjects' self-rating of risk (their propensity to take risk) using the item:

> Please rate your willingness to undertake risky business propositions as
> compared to others at or near your level in your firm.

Subjects indicated their responses on a seven-point scale with the anchors 1= much less willing to accept risk and 7 = much more willing to accept risk (MacCrimmmon and Wehrung, 1986). This variable was not significant in any of the models; further, its removal did not affect the results. Again, for the sake of parsimony, the results I report do not include subjects' self-rating of risk.

Finally, I calculated variance inflation factors to test for the possibility of multicollinearity across the independent variables and found no violations in the analyses.

Results

Hypothesis 1 was tested using multiple regression analysis using data from individual decision periods and Hypothesis 3b, was tested with multiple regression across

decisions 1 – 4 (see explanations below). Repeated measures regression was used to test

all other hypotheses (see Cohen & Cohen, 1983, Chapter 11 and Hollenbeck, Ilgen, &

Sego, 1994 for thorough discussions of repeated measures regression). Tables 5 & 6

include the descriptive statistics and correlation matrix for variables included in the

study.

TABLE 5
Descriptive Statistics and Correlations[a]

	Mean	s.d.	1	2
1 Implicit Risk	.50	.50		
2 Time Horizon Length	.50	.50	-.02	
3 Projected Value of Compensation D#1	8.27	4.71	-.28**	.058

[a] N=137. ** p<.01 (2-tailed).

TABLE 6
Descriptive Statistics and Correlations[a]

	Mean	s.d.	1	2	3	4	5	6	7
1 Group	.35	.48							
2 Projected Value	8.57	6.51	.00						
3 Endowed wealth (lagged)	5.19	4.69	.10**	.47**					
4 Goal	7.97	4.34	-.04	.31**	.29**				
5 Problem framing	4.03	2.19	.02	.54**	.07*	-.09**			
6 Wealth orientation	3.39	2.14	-.14	.23**	.03	-.23**	.53**		
7 Group x PVC	0.00	3.23	.30**	-.03	.06	-.09	.03	.02	
8 Group x problem framing	1.43	2.33	.84**	.19**	.10**	-.08*	.33**	.02	.50**

[a] N=959. * p<.05; ** p<.01 (2-tailed).

Implicit risk and time horizon. Consistent with Hypothesis 1, implicit risk

exhibits a negative association with the PVC (p<.001). However; contrary to Hypothesis

2, the length of the compensation time horizon did not significantly influence PVC. In

addition, although Hypotheses 1 and 2 were tested using data from decision 1. They were also tested using data from each of the other six decision periods individually, via multiple regression analysis. Results were similar across decision periods. Time horizon length exhibited no significant influence on PVC in any period (this was a test of the difference between lengths of two time periods rather than a test of the time left to exercise). However, implicit risk demonstrated a significant and negative influence on PVC in the first four periods. In periods 5 – 7 the influence of implicit risk on PVC was not significant. Results from decision 1 and decision 5 are shown in Table 7.

TABLE 7
Projected Value of Compensation [a]

Independent Variable	Model 1 (decision #1)		Model 2 (decision #5)	
Implicit risk	-2.65**	(.77)	-1.11	(.62)
Time horizon	.51	(.77)	.61	(.62)
Adjusted R^2	.07**		.02	
Df	135		135	

[a] Unstandardized coefficients are shown with standard errors in parentheses. **$p<.01$; *$p<.05$

Endowed wealth. The relationship between PVC and endowed wealth was tested using repeated measures regression based upon 959 observations. Variance was partitioned into two orthogonal sources: between subjects and within subjects variance. As shown in Table 8, between subjects variance accounts for 39.39% of the total variance, while 60.61% of the total variance is attributable to within subject's variance. Consistent with Hypothesis 3a, the reference point of endowed wealth is strongly and positively associated with the current PVC. The PVC was measured during each of the seven decision periods; hence it is a within subjects factor and accounts for 56% of the

total variance and 92% of the within subjects variance ($p<.01$). In addition, although the main effect for group (EMBA) was non-significant, the interaction term of group and projected value was significant ($p<.01$).

TABLE 8
Endowed wealth [a]

Hierarchical Step	Independent Variable	Unstandardized Coefficients	Total R^2	Incremental R^2	Incremental Variance Within Subjects (60.61%)[a]	Incremental Variance Between Subjects (39.39%)[b]
1	Group (EMBA)	.67*	.01	.01		.03*
2	Projected value	.54**	.57**	.56**	.92**	
3	Group x Projected value	.16**	.58**	.01	.02**	

[a] $N=959$ (7 observations per 137 subjects) (df=959-137-k-1). [b] $N=137$ (1 observation per 137 subjects) (df=137-k-1), *$p<.05$;**$p<.01$

Hypothesis 3b predicts that when the current performance of a form of compensation declines the endowed wealth reference point will decrease more slowly than the projected value of compensation.

Current value increases from decision one to decision two, but remains steady over decisions two – four. It begins to decline in decision five. As such, decisions five – seven were used to test hypothesis 3b. To test the hypothesis, three variables were created to reflect the percentage change in endowed wealth from decisions four to five, five to six and six to seven. Three variables were also created to reflect the percentage change of PVC score in the same manner. The percentage change scores between PVC and endowed wealth from decision four to decision five, and decision six to seven are non-significant. Interestingly however, from decision five to decision six endowed wealth decreases at a rate of 40%, while PVC decreases at a rate of only 30%. This difference is in the opposite direction and significant ($t = -3.40$, $p<.001$). The means for PVC and endowed wealth are shown in Table 9 and displayed in graphic form in Figure

5. As such, it appears that when the current performance of a form of compensation declines the endowed wealth reference point does not decrease more slowly than the projected value of compensation. Thus, Hypothesis 3b is not supported.

TABLE 9
Mean PVC & Endowed Wealth[a]

Decisions	Mean % change PVC	Mean % change EW	t value
Dec. 1 to 2	78%	75%	-.74
Dec. 2 to 3	-1%	3%	1.95*
Dec. 3 to 4	-1%	3%	1.29
Dec. 4 to 5	-31%	-34%	-1.14
Dec. 5 to 6	-30%	-40%	-3.40***
Dec. 6 to 7	-87%	-82%	.70

[a] N= 121 (Dec. 1 to 2, 2 to 3), 123 (Dec. 3 to 4), 117, (Dec. 4 to 5), 95 (Dec. 5 to 6) *** p<.001; **p<.01; *p<.05

Figure 5
Mean PVC & Endowed Wealth
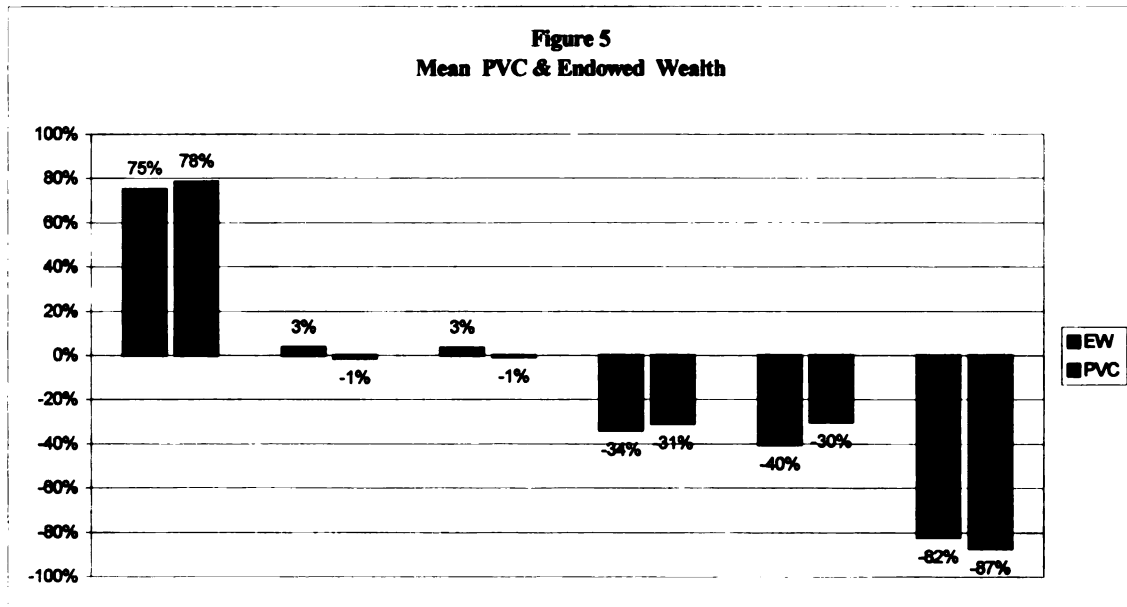
Problem framing and attainment discrepancy. Hypothesis 4a, 4b, 4c, and 5 were tested using repeated measures regression based upon 959 observations. Again, variance was partitioned into two orthogonal sources: between subjects and within subjects

variance. Subjects' aspiration level was measured prior to decision 1 and remains

constant throughout the analysis, hence, it is a between subjects effect. Endowed wealth,

PVC, and problem framing were measured during each decision period; thus, they

account for within subjects variance. As shown in Table 10, between subjects variance

accounts for 11.58% of the total variance, while 88.42% of the total variance is

attributable to within subjects variance.

Hypothesis 4a predicts the projected value of compensation will have a positive

influence on framing. Conversely, Hypotheses 4b and 4c predict that the endowed

wealth reference point and the aspiration level will have a negative influences on

framing.

In order to formally test Hypotheses 4a, 4b, 4c, the problem framing variable was

regressed on subjects' PVC, reference point of endowed wealth (lagged one period), and

initial aspiration level in a repeated measures regression equation. To support

Hypotheses 4a and 4b, and 4c the PVC should be positively and significantly related to

problem framing while the endowed wealth reference point and the aspiration should be

TABLE 10
Problem Framing [a]

Hierarchical Step	Independent Variable	Unstandardized Coefficients	Total R^2	Incremental R^2	Incremental Variance Within Subjects (88.42%)[a]	Incremental Variance Between Subjects (11.58%)[b]
1	Projected value	.24**	.29**	.29	.33**	
2	Endowed wealth lagged	-.09**	.33**	.04	.05**	
3	Aspiration	-.13**	.39**	.06		.51**

[a] $N=959$ (7 observations per 137 subjects) (df=959-137-k-1). [b] $N=137$ (1 observation per 137 subjects) (df=137-k-1), **$p<.01$;

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significantly and negatively related to problem framing. In support of Hypotheses 4a, 4b, and 4c, problem framing is significantly and positively influenced by the PVC (p<.01)

Figure 6
Problem Framing and Wealth Orientation Means

Legend:
- Problem framing mean
- Wealth orientation mean

X-axis: Decision period (1 to 7)
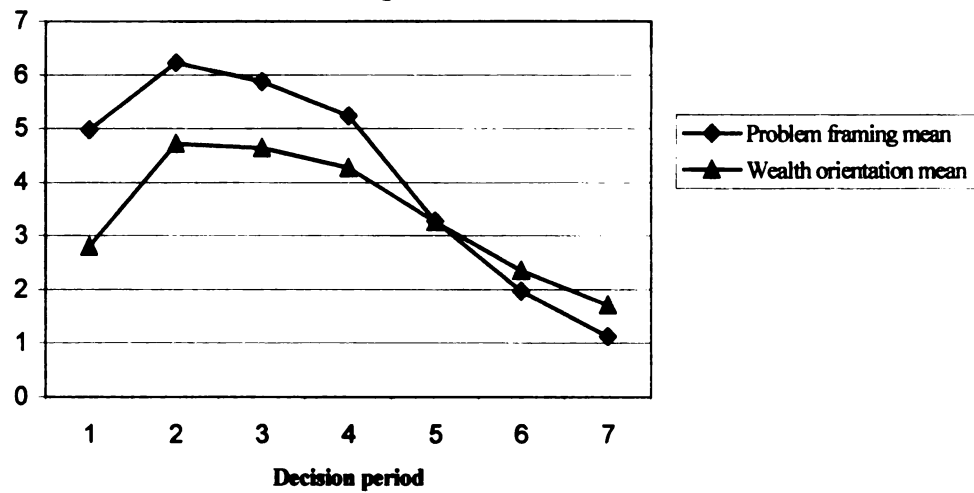
Figure 7
Spread, PVC, Endowed Wealth, & Aspiration

Legend:
- Spread
- PVC
- Endowed wealth
- Aspiration

X-axis: Decision period (1 to 7)
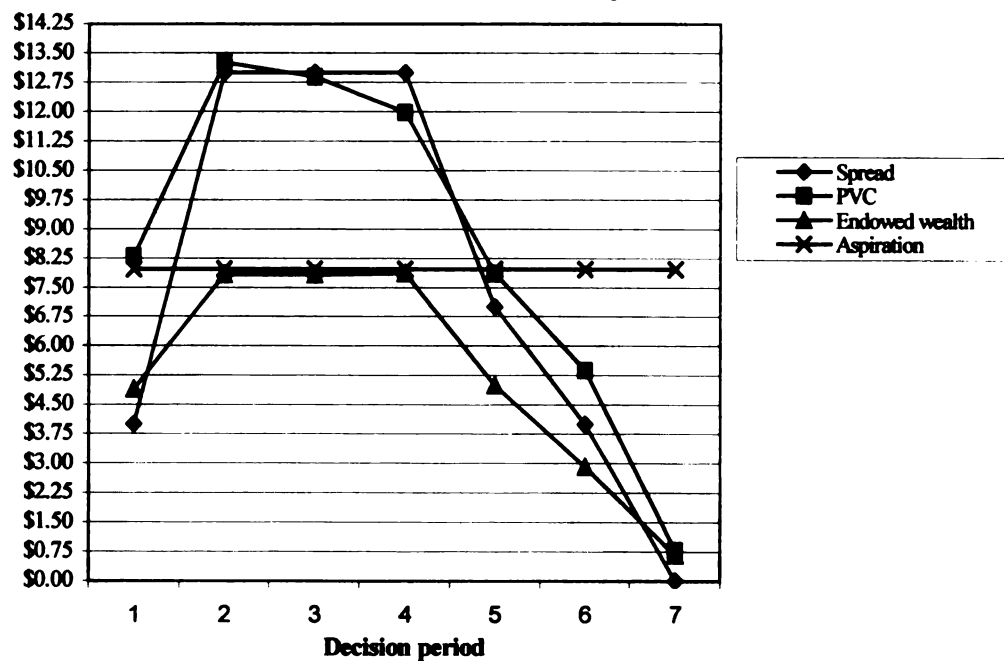
and significantly and negatively influenced by the reference point of endowed wealth ($p<.01$) and aspiration level ($p<.01$). Consequently, Hypotheses 4a and 4b, and 4c are supported. Results of Hypotheses 4a & b and 4c presented in Table 10.

Subjects' problem framing and wealth orientation scores by decision are graphed in Figure 6. The current performance (actual spread), subjects' means for PVC and endowed wealth are graphed in Figure 7.

Regressing problem framing on subjects' PVC, endowed wealth, and initial aspiration level also serves as a test Hypothesis 5, which states a maximum of one reference point drives subjects' problem framing during the seven decision periods. Since both reference points demonstrate significant negative influences on problem framing, more than one reference point is salient during each period. Consequently, Hypothesis 5 is not supported. However, it is interesting to note that it appears that the aspiration level has a much stronger effect on problem framing than the reference point of endowed wealth as it explained over 51% of the between subjects variance (see Table 10).

Wealth orientation. The relationship between problem framing and wealth orientation was tested using repeated measures regression based upon 959 observations. As such, variance was partitioned into two orthogonal sources: between subjects and within subjects variance. As shown in Table 11, between subjects variance accounts for 30.52% of the total variance, while 69.48% of the total variance is attributable to within subjects variance. Wealth orientation and problem framing were measured during each decision period, hence they are within subjects effects. Hypothesis 8 predicts that problem framing demonstrates a positive influence on wealth orientation, such that

positive framing is positively associated with a wealth maintenance orientation and

negative framing is negatively associated with a wealth maintenance orientation. A test of

this hypothesis reveals that subjects' problem framing is positively associated with

wealth orientation, explaining 41% of the within subjects variance (p<.01); thus

confirming Hypothesis 8 (see Table 11).

<div align="center">

TABLE 11
Study 1 -Wealth Orientation [a]

</div>

Hierarchical Step	Independent Variable	Unstandardized Coeffeicents	Total R^2	Incremental R^2	Incremental Variance Within Subjects (69.48)[a]	Incremental Variance Between Subjects (30.52)[b]
1	Group (EMBA)	-.65**	.02	.02		.06**
2	Problem Framing	.52**	.31**	.29**	.41**	
	Group x problem					
3	framing	-.18	.31**	.00	.00	

[a] N=959 (7 observations per 137 subjects) (df=959-137-k-1). [b] N=137 (1 observation per 137 subjects) (df=137-k-1), **p<.01;

<u>Study 2</u>

<u>Methods</u>

<u>Subjects.</u> 102 masters of business administration students in a management class

participated in the study. Subjects' mean age was 28 years and the mean for work

experience was 4.75 years. Over 83% of the subjects had experience with incentive-

based pay forms with 75% having direct experience with annual bonuses.

<u>Design and Procedures.</u> Subjects voluntarily participated in the study during a

single class session. As in pilot study 2, subjects were given a packet containing a

scenario-based questionnaire and scenario background information. The scenario-based

questionnaire was a 2 (Internal vs. External Performance Standard) x 2 (Flexible vs. Non-

Flexible horizon) x 7 (seven decision periods) factorial design bonus scenario. Subjects

were randomly assigned to conditions, completed background information, and were instructed to read the scenario and complete the questionnaire across seven different decision periods that varied the current performance of the bonus compensation throughout the compensation time horizon (see below).

Measures

Problem framing. As in the pilot studies and study 1, problem framing was measured via the following measure:

At this point in time I feel as though the bonus is...

Subjects' indicated their response on a seven point scale with the following anchors: 1 = behind where I'd like it to be and 7 = ahead of where I'd like it to be.

Wealth orientation. As in the pilot studies and study 1, wealth orientation was measured via the following measure:

At this point in time I am more concerned about...

Subjects indicated their response on a seven point scale with the following anchors: 1= increasing the bonus and 7 = maintaining the bonus (wealth orientation was reverse coded).

Horizon flexibility. Horizon flexibility was manipulated. Subjects in the flexible horizon read:

> In December 2001 a long-term bonus plan was added to your compensation package. The minimum length of the plan is three years, **but you have the option to extend it to four years.** The plan works as follows:

> On December 31, 2004 your firm's three-year unit sales figure will be compared to the unit sales figure of the last three-year period. The plan rewards you for achieving percentage increases in the three-year unit sales according to the following schedule:

OPTION
If you wish, you can extend your plan for up to one additional year, in the event sales are not performing to plan on December 31, 2004. This allows you to the opportunity to cash out your bonus anytime between December 31, 2004 and December 31, 2005 – at the time most advantageous to you.

Subjects in the non-flexible horizon read:

In December 2001 a long-term bonus plan was added to your compensation package. The length of the plan is three years. The plan works as follows:

On December 31, 2004 your firm's three-year unit sales figure will be compared to the unit sales figure of the last three-year period. The plan rewards you for achieving percentage increases in the three-year unit sales according to the following schedule:

Performance standards. Performance standards were manipulated. Subjects in

the internal standard condition read:

On December 31, 2004 your firm's three-year unit sales figure will be compared to the unit sales figure of the last three-year period. The plan rewards you for achieving percentage increases in three-year unit sales according to the following schedule:

Subjects in the external standard condition read:

On December 31, 2004 your firm's three-year unit sales will be compared with the average industry unit sales for the same period. Most of your competitors also have bonus plans that are based on exceeding the industry average unit sales. Consequently, you are unsure what the period industry average unit sales figure will be on December 31, 2004. The plan rewards you for achieving percentage increases over the three-year industry average unit sales according to the following schedule:

Perceptions of control. Subjects' perceptions of control were measured via the

following measure:

On the scale below please indicate the level of control you feel you have over the structure of this bonus (how much control do you feel you have over your firm exceeding last period's (the industry average) sales in the allotted time frame?). Subjects' indicated their response on a seven point scale with the following anchors: 1 = low control and 7 = high control.

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Controls. In my initial estimations I controlled for subjects' gender and subjects' self-rating of risk (their propensity to take risk) using the item:

> Please rate your willingness to undertake risky business propositions as compared to others at or near your level in your firm.

Subjects indicated their responses on a seven-point scale with the anchors 1= much less willing to accept risk and 7 = much more willing to accept risk (MacCrimmmon and Wehrung, 1986). Neither the gender or subjects' self-rating of risk were significant in any of the models; further, their removal did not affect the results. Thus, for the sake of parsimony, the results I report do not include subjects' self-rating of risk.

Finally, I calculated variance inflation factors to test for the possibility of multicollinearity across the independent variables and found no violations in the analyses.

Results

Table 12 includes the descriptive statistics and correlation matrix for variables included in the study.

TABLE 12
Study 2 -Descriptive Statistics and Correlations [a]

	Mean	s.d.	1	2
1 Problem Framing	3.78	1.83		
2 Perceptions of Control (POC)	4.71	1.46	.03	
3 Problem framing x POC	.07	2.64	.00	-.01

[a] N=714. * p<.05; ** p<.01 (2-tailed).

Hypotheses 6 & 7 were tested via t-tests. These tests are described below.

Performance standards. Hypothesis 6 predicts that contingent compensation forms tied to internal standards will create greater perceptions of control than contingent compensation forms tied to external standards. T-test results between internal and

external standard conditions (see Table 13) were significant (t = 3.57, p<.001) and in the predicted direction (internal standard, M = 5.20, s.d. = 1.37, external standard, M = 4.22, s.d. = 1.41). Consequently, Hypothesis 6 received strong support.

Horizon flexibility. Similarly, Hypotheses 7 states that contingent compensation forms that incorporate a flexible horizon will create greater perceptions of control than contingent compensation forms that incorporate an inflexible horizon. T-test results between the flexible and non-flexible time horizon conditions (see Table 13) were marginally significant (t = 1.86, p<.10) and in the predicted direction (flexible horizon M = 4.96, s.d. = 1.49; non-flexible standard, M = 4.43, s.d. = 1.40). Consequently, Hypothesis 7 is also supported. Results of Hypotheses 6 & 7 are presented in Table 13.

TABLE 13
Study 2 - t-test Results

INTERNAL VS EXTERNAL STANDARD					
	Internal		External		
Variable	Mean	s.d.	Mean	s.d.	T
Perception of control	5.20	1.37	4.22	1.41	3.57 p<.001

FLEXIBLE VS NON-FLEXIBLE HORIZON

	Flexible		Non-Flexible		
	Mean	s.d.	Mean	s.d.	t
Perception of control	4.96	1.49	4.43	1.40	1.86 p<.10

Moderated repeated measures regression was used to test Hypothesis 9.

Moderation. The moderation effect was tested using repeated measures regression based upon 714 observations. Variance was partitioned into two orthogonal sources: between subjects and within subjects. As shown in Table 13, between subjects

variance accounts for 44.51% of the total variance, while 55.49% of the total variance is attributable to within subjects variance. Hypothesis 9 predicts that relationship between problem framing and wealth orientation is moderated by perceptions of control. Problem framing and wealth orientation are within subject factors, while perceptions of control (measured once at the start of the exercise) is a between subjects effect. Hypothesis 9 was tested by regressing subjects' wealth orientation score on their problem framing score, perceptions of control score, and the product term of both using hierarchical repeated measures regression. This test reveals that the main effect of problem framing on wealth orientation is positive and significant ($p<.01$). It also shows that the product term of problem framing and perceptions of control has a negative and significant influence on wealth orientation explaining 2% of the within subjects variance ($p<.01$).

TABLE 14
Study 2 -Wealth Orientation [a]

Hierarchical Step	Unstandardized Coeffeicients	Independent Variable	Total R^2	Incremental R^2	Incremental Variance Within Subjects (55.49) [a]	Incremental Variance Between Subjects (44.51) [b]
1	.27**	Problem Framing	.06**	.06**	.12**	
2	-.09	Perceptions of Control	.06	.00		.00
3	-.07**	Problem Framing x Perceptions of Control	.08**	.01**	.02**	

[a] *N=714 (7 observations per 102 subjects) (df=959-102-k-1).* [b] *N=102 (1 observation per 102 subjects) (df=102-k-1),* **$p<.01$;

This indicates that perceptions of control moderates the influence of problem framing on wealth orientation such that high perceptions of control decrease the influence of problem framing on wealth orientation and low perceptions of control increase the influence of problem framing on wealth orientation. Table 14 displays the results of the moderated

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relationships and the effects of the control variable. The interaction effect is illustrated in

Figure 8.

Figure 8
Interaction Effect
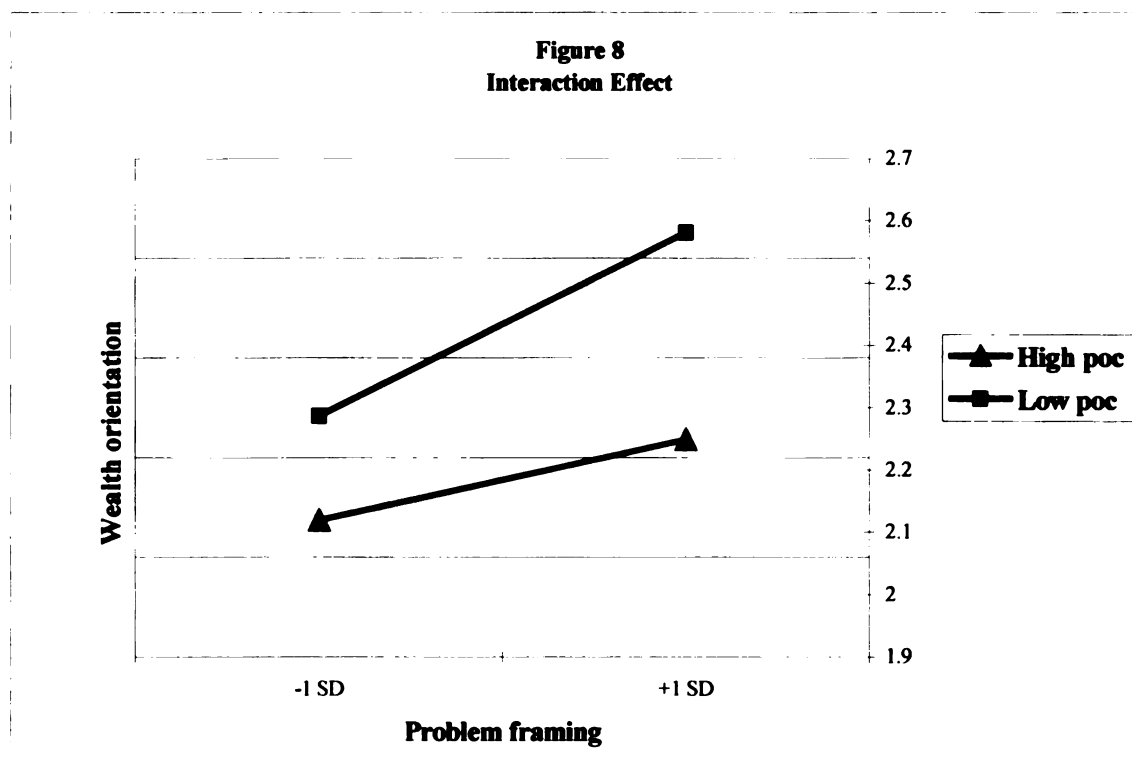
CHAPTER 5

DISCUSSION

I have developed and tested a model that disentangles the incentive properties of various forms of compensation in an attempt to better understand how well compensation works, how executives value compensation, and the effects of executive compensation on executives' wealth orientation. Drawing on behavioral decision theory and research on corporate governance and compensation I distinguish between elements that are embedded in the compensation contract and perceptual dimensions that emerge in response to these elements and test how these dimensions can differentially effect executives' perceptions (c.f. Wiseman et al, 2000). The results presented above confirm broad support of the model and provide further empirical evidence that, as Wiseman and Gomez-Mejia (1998) suggest, integrating behavioral decision theory and agency theory can help us better understand executives' perceptions of and responses to various compensation schemes.

Implications and Future Research

The findings here suggest that executives calculate a value for each type of compensation that is influenced by the implicit risk of that form of pay. This process differs from valuation methods such as the Black-Scholes, which provide us with ex ante estimates of shareholder cost. This finding has important implications for executive compensation research as it suggests that the incentive properties can be quite different across different forms of contingent pay and different risk conditions, which raises questions about the effectiveness of our current methods of compensation valuation.

Endowed wealth. In line with the BAM (Wiseman and Gomez-Mejia, 1998) I also find that executives actually do endow a portion of their future compensation (stock options and bonuses) into calculations of personal wealth. This is an important finding as it demonstrates that contingent pay forms, including stock-options, actually can assume downside risk characteristics. This finding directly contradicts the agency theory assumption that stock-options contain no downside risk and call for revising the way we view the risk properties of contingent pay in executive compensation research.

In addition, I find that factors defined as lying outside the compensation agreement can also play a significant role in how executives endow wealth. In particular, I find that over 56% of the total variance in endowed wealth is between subjects variance, confirming the Kahneman, Knetsch, and Thaler (1990) finding that the endowment effect seems, in large part, to be driven by individual differences or preferences. Consequently, a more specific and thorough examination of how compensation is perceived by executives should incorporate individual-level factors.

Optimistic aspirations. Although the results of this study demonstrate that executives do endow a portion of the value of future compensation, as Lant, (1992) finds they also indicate that executives are quite optimistic in the manner in which they set future aspirations for wealth accumulation. In addition, in both studies the aspiration level seems to have acted as a ceiling for the amount of wealth an executive endowed (see Figure 6 for an illustration of this relationship from study 1). As such, in this study it appears that the aspiration level may have influenced the amount of wealth executives endowed. Perhaps future research can better isolate the effects of the aspiration level on

endowment in order to understand what actually drives this process in dynamic compensation situations.

Multiple reference points. I also suggested that it is particularly important to distinguish between the reference points executives use to frame decisions. The findings here reveal that managers use both their reference point of endowed and an aspiration level to frame decisions. Recognizing these reference points separately is critical as it is possible for the current projected value of compensation to exceed the aspiration level (initial wealth goal from a form of compensation) but to have fallen below the endowed wealth reference point (e.g. option value had risen in excess of the aspiration level substantially and this value is endowed, the spread subsequently falls below that reference point, yet it remains above the aspiration level).

This situation would create competing influences, as the former would result in a positive frame, creating concern for wealth maintenance; however, the later would create a loss frame, invoking concern for increasing wealth. This is important as Sullivan and Kida (1995) find that typical reference dependent research findings do not hold under circumstances in which choice alternatives fall between multiple points of reference (i.e. managers exhibit both risk taking and risk avoidance behavior in these conditions). This has major implications for the study of how compensation forms influence executive choice behavior, and calls for new research that examines the effects of multiple points of reference and their combined influences on executives' wealth orientation and risk taking behaviors.

Wealth orientation. The findings of this study also show that problem framing significantly influences executives' wealth orientation. This is another important finding

as understanding the changes in the wealth orientation of executives should allow us to better predict the type of options executives are likely to search for in response to various incentives and situations (i.e. an orientation toward increasing wealth would likely result in a bias toward searching for more risk-laden choices than an orientation toward wealth maintenance). In addition, it should allow us to move closer understanding how executives perceive and are considering responding to various compensation contexts and to better gauge the effectiveness of compensation forms and the compensation contract.

Perceptions of control. This study also reveals that executives' perceptions of control are an important moderating influence on the effect of problem framing on wealth orientation. This is important, as the majority of recent studies examining decision making have been conducted using models of probability in simple gambling situations (chance events). However, I suggest that simple gambling contexts are quite different from executives' decision contexts, as in gambling, perceptions of control are largely discounted (Shapira, 1995). Although some studies have shown that individuals believe that they can exert some degree of control in chance events, research indicates that these perceptions of control are due to the introduction of "manipulations that are suggestive of skill, such as competition, choice, familiarity, and involvement" (Taylor & Brown, 1988).

Hence, I suggest that results from simple expected value gambling contexts that offer no skill-like manipulation, such as those that involve subjects choosing between a sure win or some less than sure "chance" they will win some amount much larger than the sure win, or betting on the results of a coin flipped by someone else, do not fully generalize to executive decision making contexts, as they over inflate the influence of downside risk on risk-taking behavior and are not reflective of how executives view their

situations (Shapira, 1995). As such, it is likely that the results of this research may not generalize to executive compensation and decision making situations. Consequently, in order to account for executives' perceptions of control, I argue that we must examine the effects of various types of compensation forms in dynamic situations that more closely mirror executive compensation contexts.

Conclusion

Finally, I suggest that wealth orientation influences how executives may perceive each of the options available to them, such that they may focus on either the dangers or the opportunities inherent in each choice, depending on their wealth orientation at the time of consideration. Hence, I suggest that wealth orientation influences executive risk preferences in making decisions on behalf of principals, when those decisions hold implications for the executive's personal wealth. Specifically, as executives' wealth orientation shifts toward maintenance their risk preferences should become more conservative, as they seek to protect personal wealth (real or projected). Consequently, I suggest that future research should specifically examine the relationship between wealth orientation and risk taking under various compensation contexts.

The results of these studies raise important questions about the practice of mixing different forms of pay with varying wealth prospects into a single measure, as this is likely to create variables that contain contrasting influences on executives. This is problematic for the interpretation of research as it presents measurement problems that hinder the capability to understand these influences on executives' perceptions, behavior, and/or firm performance. I hope that the findings of these studies will prompt compensation researchers to revise the manner in which we create our measures, which

should allow us to better understand the incentive properties of pay forms in various contexts and help us to more thoroughly investigate the relationship between compensation and executive behavior.

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APPENDIX A

COMPENSATION SCENARIO COVER PAGE FOR ALL SURVEYS

Please complete the following information regarding your current or previous job(s):

I. The largest budget that I have been responsible for managing (in U.S. dollars) is

$_____ .

II. The largest expenditure I have had the authority to make without supervisory approval

(in U.S. dollars) is $_____ .

II. Please rate the current performance of the firm in which you work:

Poor Performance						Excellent Performance
1	2	3	4	5	6	7

III. Please rate your willingness to undertake risky business propositions as compared to

others at or near your level in your firm:

Much less willing to accept risks						Much more willing to accept risks
1	2	3	4	5	6	7

IV. Please rate your feelings about the risk of stock options as a form of compensation:

		Stock options are a very...				
risky form of compensation						safe form of compensation
1	2	3	4	5	6	7

V. Please indicate which of the following compensation forms have been a part of your

current or past compensation packages (circle yes or no).

    a.   Salary.. Yes   No

    b.   Annual bonus....................................... Yes   No

    c.   Stock options...................................... Yes   No

    d.   Long-term performance plan/bonus.................. Yes   No

    e.   Restricted stock................................. Yes   No

The following pages contain background information and a set of scenarios. Please read and answer all questions.

IMPORTANT

Once you have turned the page, please do not go back and change any of your previous answers.

We are investigating responses to compensation forms. There are no right or wrong answers.

APPENDIX B

NO IMPLICIT RISK – 18 MONTH CONDITION

18NIR-1

BACKGROUND
You are the CEO of a small public firm. Since the firm is small, *your actions directly impact the stock price.*

> In December 2002 you were awarded the option to purchase 10,000 shares of
>
> your firm's stock for $29.00; however, you cannot exercise (purchase, sell, or
>
> trade these shares) for 18 months. If you do not exercise the option on June
>
> 30, 2004 it will expire. *This is an option to purchase shares - you are not*
>
> *obligated in any way to make the purchase.*

YOUR GOAL
Your goal, set by the board of directors, is to increase your firm's stock price to **$35.00 a share** (by June 30, 2004).

In 18 months (on June 30, 2004) you may purchase any or all of the 10,000 shares for $29.00 per share. At that time you can immediately sell the stock at the current market price for a profit or keep the stock. *Your firm will pay all of your fees and taxes associated with any gain–* The following is a hypothetical situation to illustrate:

Example

On June 30, 2004 the market price of your firm's stock is $35.00 per share. At that time you can purchase your shares at $29.00 and immediately resell the stock and earn a $6.00 per share profit ($60,000).

INDUSTRY
Your firm manufactures critical components for your customers. As a result, your firm's stock price is sheltered from any negative effects of the economy.   Current conditions are quite stable.   In addition, your stock price and others in your industry have generally continued to rise over the last decade. This pattern is projected to continue over the next few years. As such, industry analysts consider your stock to be a **very safe** investment.

High Implicit Risk – 18 month condition

18HIR-3

BACKGROUND

You are the CEO of a small public firm. Since the firm is small, *your actions directly impact the stock price.*

> **In December 2002 you were awarded the option to purchase 10,000 shares of your firm's stock for $29.00; however, you cannot exercise (purchase, sell, or trade these shares) for 18 months. If you do not exercise the option on June 30, 2004 it will expire.** *This is an option to purchase shares - you are not obligated in any way to make the purchase.*

YOUR GOAL

Your goal, set by the board of directors, is to increase your firm's stock price to **$35.00 a share** (by June 30, 2004).

In 18 months (on June 30, 2004) you may purchase any or all of the 10,000 shares for $29.00 per share. At that time you can immediately sell the stock at the current market price for a profit or keep the stock. *Your firm will pay all of your fees and taxes associated with any gain–* The following is a hypothetical situation to illustrate:

Example

On June 30, 2004 the market price of your firm's stock is $35.00 per share. At that time you can purchase your shares at $29.00 and immediately resell the stock and earn a $6.00 per share profit ($60,000).

INDUSTRY

Your firm manufactures nonessential components for your customers. As a result, economic conditions directly affect your firm's stock price. Current economic conditions are quite unstable. In addition, your stock price and others in your industry have been quite volatile (rising and falling dramatically) over the last decade. This pattern is projected to continue over the next few years. As such, industry analysts consider your stock to be a **high risk** investment.

SURVEY - 18 MONTH CONDITIONS (NO IMPLICIT RISK & HIGH IMPLICIT RISK)

Please answer the following questions:

1. What is your **profit per share goal** at exercise (when you are able to purchase and resell these shares)?: $_____ **per share.**

2. How much of an impact do your actions have on the firm's stock price?

No impact						Direct impact
1	2	3	4	5	6	7

3. On the scale below please indicate your perception of the likelihood of making your profit goal:

Low likelihood						High likelihood
1	2	3	4	5	6	7

DECISION 1 - It is now April 15, 2003
Current market price = $33.00.
The exercise price in ONE YEAR AND TWO 1/2 MONTHS (JUNE 30, 2004) = $29.00
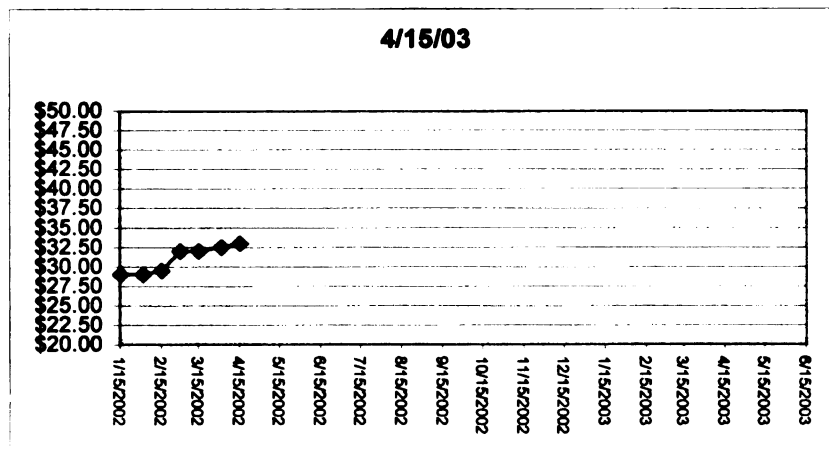
1/15/03	29.00
2/1/03	29.00
2/15/03	29.50
3/1/02	32.00
3/15/03	32.00
4/1/03	32.50
4/15/03	33.00

4. At this point in time, what is the **profit per share** you expect to earn at exercise (when you are able to purchase and resell these shares) in 14 and 1/2 months?: $_____ **per share**.

5. Defining personal wealth to include both current income and fully anticipated future income, at this point in time, what profit per share would you include in your calculations of personal wealth?: $_____**per share**.

6. At this point in time I feel as though the shares are performing......

			Circle one number			
Behind of where I'd like them to be						Ahead of where I'd like them to be
1	2	3	4	5	6	7

7. At this point in time I am more concerned about......

			Circle one number			
Maintaining the current stock price						Increasing the stock price
1	2	3	4	5	6	7

8. At this point in time, what is the **profit per share** you are confident enough to use to secure financing on a purchase you really want to make?: $_____**per share**.

DECISION 2 - It is now June 1, 2003
Current market price = $42.00.
The exercise price in 1 YEAR AND 29 DAYS (JUNE 30, 2004) = $29.00
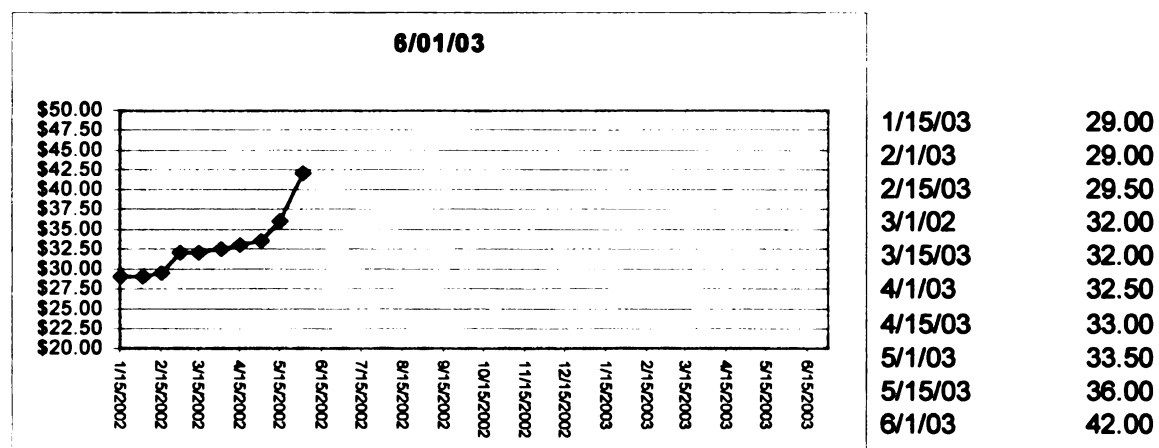
6/01/03

Date	Price
1/15/03	29.00
2/1/03	29.00
2/15/03	29.50
3/1/02	32.00
3/15/03	32.00
4/1/03	32.50
4/15/03	33.00
5/1/03	33.50
5/15/03	36.00
6/1/03	42.00

9. At this point in time, what is the **profit per share** you expect to earn at exercise (when you are able to purchase and resell these shares)?: $_____ **per share.**

10. Defining personal wealth to include both current income and fully anticipated future income, at this point in time, what profit per share would you include in your calculations of personal wealth?: $_____**per share.**

11. At this point in time I feel as though the shares are performing......

Circle one number						
Behind of where I'd like them to be					Ahead of where I'd like them to be	
1	2	3	4	5	6	7

12. At this point in time I am more concerned about......

Circle one number						
Maintaining the current stock price					Increasing the stock price	
1	2	3	4	5	6	7

13. At this point in time, what is the **profit per share** you are confident enough to use to secure financing on a purchase you really want to make?: $_____**per share.**

Decision 3 - It is now June 15, 2003
Current market price = $42.00
The exercise price in ONE YEAR AND TWO WEEKS (JUNE 30, 2004) = $29.00
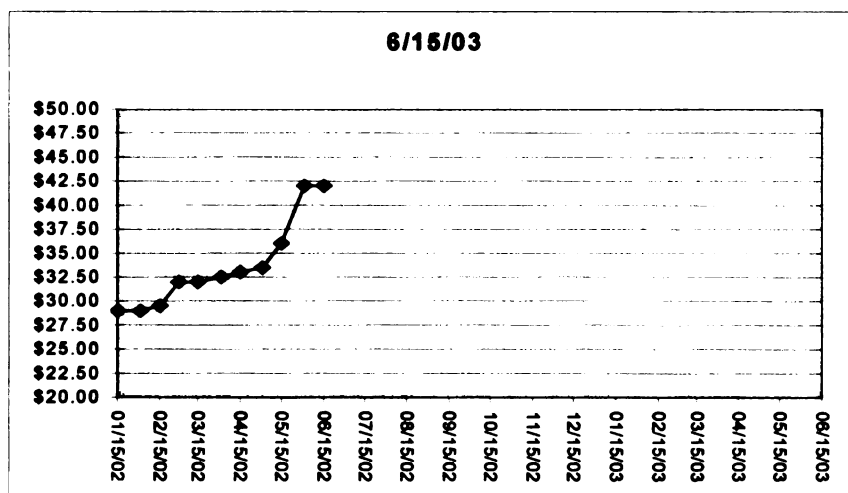
6/15/03

1/15/03	29.00
2/1/03	29.00
2/15/03	29.50
3/1/02	32.00
3/15/03	32.00
4/1/03	32.50
4/15/03	33.00
5/1/03	33.50
5/15/03	36.00
6/1/03	42.00
6/15/03	42.00

14. At this point in time, what is the **profit per share** you expect to earn at exercise (when you are able to purchase and resell these shares)?: $_____ **per share.**

15. Defining personal wealth to include both current income and fully anticipated future income, at this point in time, what profit per share would you include in your calculations of personal wealth?: $_____ **per share.**

16. At this point in time I feel as though the shares are performing......

Circle one number

Behind of where I'd like them to be						Ahead of where I'd like them to be
1	2	3	4	5	6	7

17. At this point in time I am more concerned about......

Circle one number

Maintaining the current stock price						Increasing the stock price
1	2	3	4	5	6	7

18. At this point in time, what is the **profit per share** you are confident enough to use to secure financing on a purchase you really want to make?: $_____ **per share.**

DECISION 4 - It is now January 1, 2004
Current market price = $42.00.
The exercise price in SIX MONTHS (JUNE 30, 2004) = $29.00
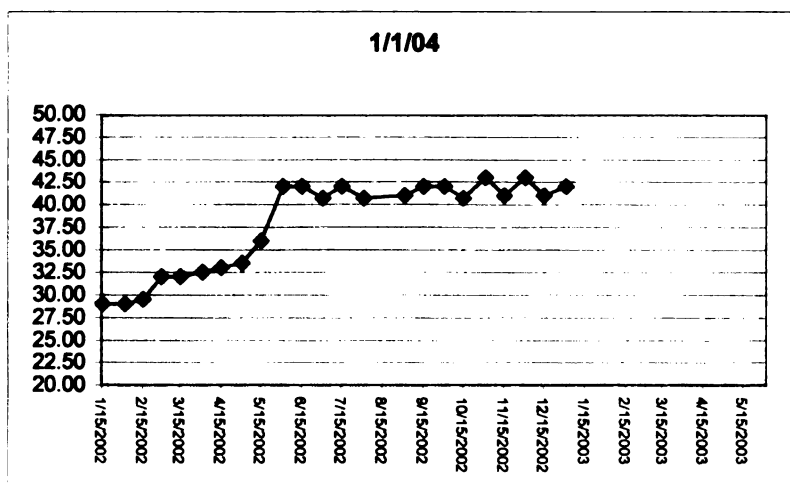
1/1/04

10/1/03	42.00
10/15/03	40.75
11/1/03	43.00
11/15/03	41.00
12/1/03	43.00
12/15/03	41.00
1/1/04	42.00

19. At this point in time, what is the **profit per share** you expect to earn at exercise (when you are able to purchase and resell these shares)?: $_____ **per share.**

20. Defining personal wealth to include both current income and fully anticipated future income, at this point in time, what profit per share would you include in your calculations of personal wealth?: $_____**per share.**

21. At this point in time I feel as though the shares are performing......

			Circle one number			
Behind of where I'd like them to be						Ahead of where I'd like them to be
1	2	3	4	5	6	7

22. At this point in time I am more concerned about......

			Circle one number			
Maintaining the current stock price						Increasing the stock price
1	2	3	4	5	6	7

23. Has your initial profit per share goal changed? **Circle one:**   **yes   no**

If yes please indicate the new figure: **$ per share** _____.

24. At this point in time, what is the **profit per share** you are confident enough to use to secure financing on a purchase you really want to make?: $_____**per share.**

Decision 5 - It is now February 15, 2004
Current market = $36.00.
The exercise price in FOUR 1/2 MONTHS (JUNE 30, 2004) = $29.00
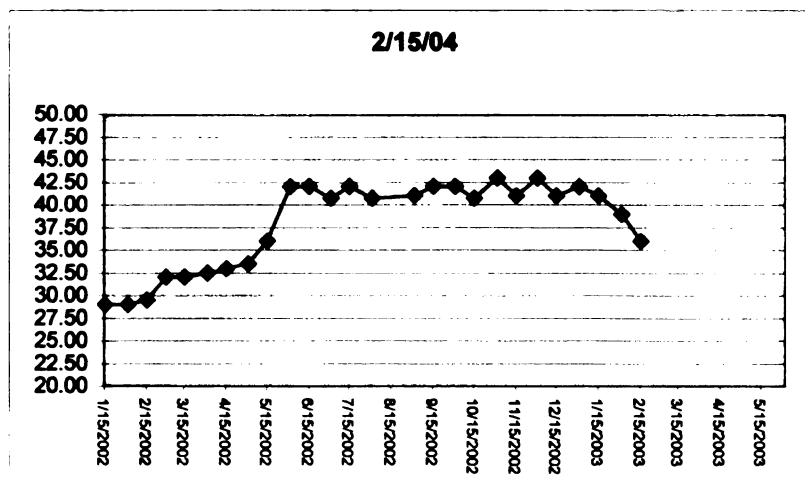
Date	Price
10/1/03	42.00
10/15/03	40.75
11/1/03	43.00
11/15/03	41.00
12/1/03	43.00
12/15/03	41.00
1/1/04	42.00
1/15/04	41.00
2/1/04	39.00
2/15/04	36.00

25. At this point in time, what is the **profit per share** you expect to earn at exercise (when you are able to purchase and resell these shares)?: $_____ **per share.**

26. Defining personal wealth to include both current income and fully anticipated future income, at this point in time, what profit per share would you include in your calculations of personal wealth?: $_____ **per share.**

27. At this point in time I feel as though the shares are performing......

		Circle one number				
Behind of where I'd like them to be						Ahead of where I'd like them to be
1	2	3	4	5	6	7

28. At this point in time I am more concerned about......

		Circle one number				
Maintaining the current stock price						Increasing the stock price
1	2	3	4	5	6	7

29. Please indicate the **profit per share** you would need to earn at exercise in order to feel that you have not lost any wealth you felt you had previously gained?: $_____ **per share.**

30. At this point in time, what is the **profit per share** you are confident enough to use to secure financing on a purchase you really want to make?: $_____ **per share.**

DECISION 6 - It is now March 15, 2004
Current market price = $33.00.
The exercise price in THREE 1/2 MONTHS (JUNE 30, 2004) = $29.00

10/1/03	42.00
10/15/03	40.75
11/1/03	43.00
11/15/03	41.00
12/1/03	43.00
12/15/03	41.00
1/1/04	42.00
1/15/04	41.00
2/1/04	39.00
2/15/04	36.00
3/1/04	36.00
3/15/04	33.00

31. At this point in time, what is the **profit per share** you expect to earn at exercise (when you are able to purchase and resell these shares)?: $_____ **per share.**

32. Defining personal wealth to include both current income and fully anticipated future income, at this point in time, what profit per share would you include in your calculations of personal wealth?: $_____**per share.**

33. At this point in time I feel as though the shares are performing......

			Circle one number			
Behind of where I'd like them to be						Ahead of where I'd like them to be
1	2	3	4	5	6	7

34. At this point in time I am more concerned about......

			Circle one number			
Maintaining the current stock price						Increasing the stock price
1	2	3	4	5	6	7

35. Please indicate the **profit per share** you would need to earn at exercise in order to feel that you have not lost any wealth you felt you had previously gained?: $_____ **per share.**

36. At this point in time, what is the **profit per share** you are confident enough to use to secure financing on a purchase you really want to make?: $_____**per share.**

DECISION 7 - It is now June 1, 2004
Current market price = $25.00.
The exercise price in ONE MONTH (JUNE 30, 2004) = $29.00
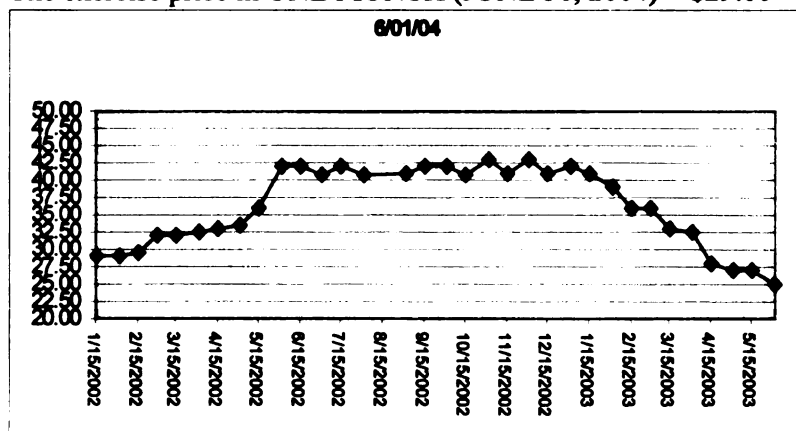
10/1/03	42.00
10/15/03	40.75
11/1/03	43.00
11/15/03	41.00
12/1/03	43.00
12/15/03	41.00
1/1/04	42.00
1/15/04	41.00
2/1/04	39.00
2/15/04	36.00
3/1/04	36.00
3/15/04	33.00
4/1/04	32.50
4/15/04	28.00
5/1/04	27.00
5/15/04	27.00
6/1/04	25.00

37. At this point in time, what is the **profit per share** you expect to earn at exercise (when you are able to purchase and resell these shares)?: $_____ **per share.**

38. Defining personal wealth to include both current income and fully anticipated future income, at this point in time, what profit per share would you include in your calculations of personal wealth?: $_____**per share.**

39. At this point in time I feel as though the shares are performing......

Circle one number

Behind of where I'd like them to be					Ahead of where I'd like them to be	
1	2	3	4	5	6	7

40. At this point in time I am more concerned about......

Circle one number

Maintaining the current stock price					Increasing the stock price	
1	2	3	4	5	6	7

41. Please indicate the **profit per share** you would need to earn at exercise in order to feel that you have not lost any wealth you felt you had previously gained?: $_____ **per share.**
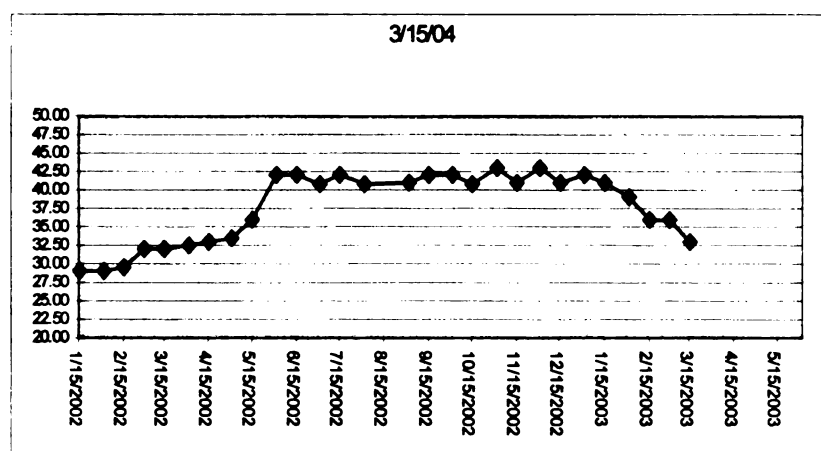
42. At this point in time, what is the **profit per share** you are confident enough to use to secure financing on a purchase you really want to make?: $_____**per share.**

APPENDIX D

No Implicit Risk – 3-year condition

3NIR-2

BACKGROUND

You are the CEO of a small public firm. Since the firm is small, *your actions directly impact the stock price.*

In December 2002 you were awarded the option to purchase 10,000 shares of

your firm's stock for $29.00; however, you cannot exercise (purchase, sell, or

trade these shares) for three years. If you do not exercise the option on

December 31, 2005 it will expire. *This is an option to purchase shares - you*

are not obligated in any way to make the purchase.

YOUR GOAL

Your goal, set by the board of directors, is to increase your firm's stock price to **$35.00 a share** (by December 31, 2005).

In three years (on December 31, 2005) you may purchase any or all of the 10,000 shares for $29.00 per share. At that time you can immediately sell the stock at the current market price for a profit or keep the stock. *Your firm will pay all of your fees and taxes associated with any gain–* The following is a hypothetical situation to illustrate:

Example

On December 31, 2005 the market price of your firm's stock is $35.00 per share. At that time you can purchase your shares at $29.00 and immediately resell the stock and earn a $6.00 per share profit ($60,000).

INDUSTRY

Your firm manufactures critical components for your customers. As a result, your firm's stock price is sheltered from any negative effects of the economy. Current conditions are quite stable. In addition, your stock price and others in your industry have generally continued to rise over the last decade. This pattern is projected to continue over the next few years. As such, industry analysts consider your stock to be a **very safe** investment.

High Implicit Risk – 3-year condition

3HIR-4

BACKGROUND

You are the CEO of a small public firm. Since the firm is small, *your actions directly impact the stock price.*

> **In December 2002 you were awarded the option to purchase 10,000 shares of**
>
> **your firm's stock for $29.00; however, you cannot exercise (purchase, sell, or**
>
> **trade these shares) for three years. If you do not exercise the option on**
>
> **December 31, 2005 it will expire. *This is an option to purchase shares - you***
>
> ***are not obligated in any way to make the purchase.***

YOUR GOAL

Your goal, set by the board of directors, is to increase your firm's stock price to **$35.00 a share** (by December 31, 2005).

In three years (on December 31, 2005) you may purchase any or all of the 10,000 shares for $29.00 per share. At that time you can immediately sell the stock at the current market price for a profit or keep the stock. *Your firm will pay all of your fees and taxes associated with any gain–* The following is a hypothetical situation to illustrate:

Example

On December 31, 2005 the market price of your firm's stock is $35.00 per share. At that time you can purchase your shares at $29.00 and immediately resell the stock and earn a $6.00 per share profit ($60,000).

INDUSTRY

Your firm manufactures nonessential components for your customers. As a result, economic conditions directly affect your firm's stock price. Current economic conditions are quite unstable. In addition, your stock price and others in your industry have been quite volatile (rising and falling dramatically) over the last decade. This pattern is projected to continue over the next few years. As such, industry analysts consider your stock to be a **high risk** investment.

Survey - 3-year conditions (no implicit risk & high implicit risk)

43. What is your **profit per share goal** at exercise (when you are able to purchase and resell

    these shares)?: $_____ **per share.**

44. How much of an impact do your actions have on the firm's stock price?

No impact						Direct impact
1	2	3	4	5	6	7

45. On the scale below please indicate your perception of the likelihood of making your profit
    goal:

Low likelihood						High likelihood
1	2	3	4	5	6	7

DECISION 1 - It is now August 1, 2002
Current market price = $33.00.
The exercise price in TWO YEARS AND FIVE MONTHS (DECEMBER 31, 2004) =
$29.00
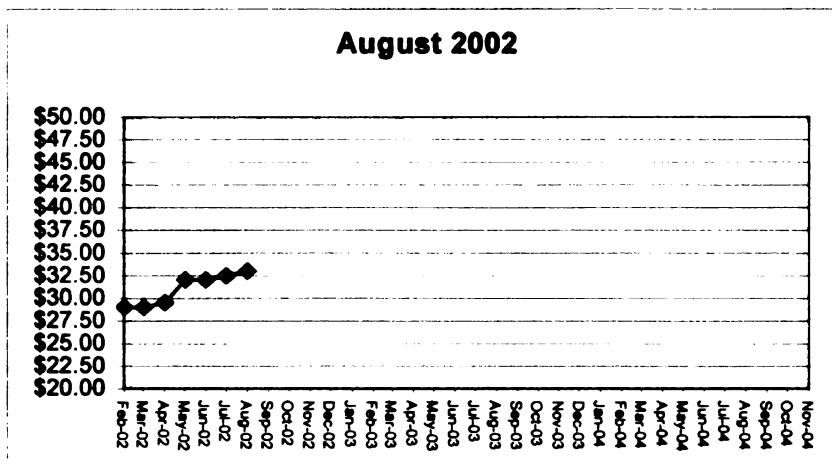
Feb. 2002	29.00
Mar. 2002	29.00
Apr. 2002	29.50
May. 2002	32.00
Jun. 2002	32.00
Jul. 2002	32.50
Aug. 2002	33.00

46. At this point in time, what is the **profit per share** you expect to earn at exercise (when you are able to purchase and resell these shares) in two years and five months?:

$_____ per share.

47. Defining personal wealth to include both current income and fully anticipated future income, at this point in time, what **profit per share** would you include in your calculations of personal wealth?: $_____ per share.

48. At this point in time I feel as though the shares are performing......

<table>
<tr><td colspan="7">Circle one number</td></tr>
<tr><td colspan="3">Behind of where
I'd like them to be</td><td colspan="4">Ahead of where
I'd like them to be</td></tr>
<tr><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td><td>7</td></tr>
</table>

49. At this point in time I am more concerned about......

<table>
<tr><td colspan="7">Circle one number</td></tr>
<tr><td colspan="3">Maintaining the
current stock price</td><td colspan="4">Increasing the
stock price</td></tr>
<tr><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td><td>7</td></tr>
</table>

50. At this point in time, what is the **profit per share** you are confident enough to use to secure financing on a purchase you really want to make?: $_____ per share.

DECISION 2 - It is now November 1, 2002
Current market price = $42.00.
The exercise price in TWO YEARS AND TWO MONTHS (DECEMBER 31, 2004) = $29.00
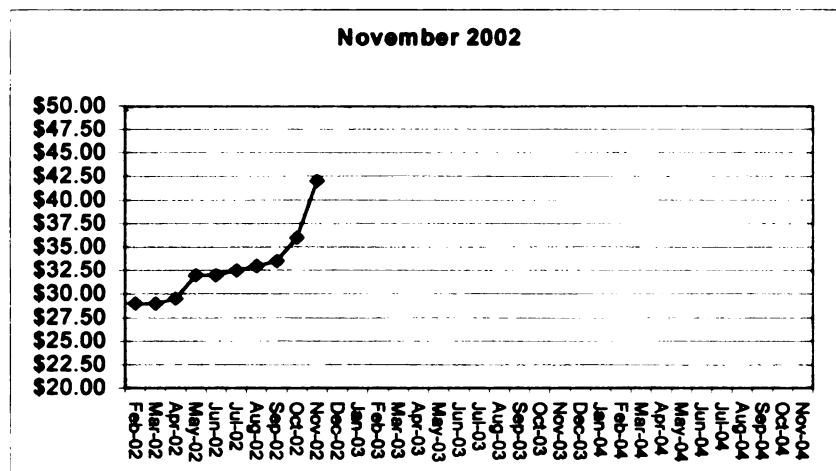
November 2002

Feb. 2002	29.00
Mar. 2002	29.00
Apr. 2002	29.50
May. 2002	32.00
Jun. 2002	32.00
Jul. 2002	32.50
Aug. 2002	33.00
Sep. 2002	33.50
Oct. 2002	36.00
Nov. 2002	42.00

51. At this point in time, what is the **profit per share** you expect to earn at exercise (when you are able to purchase and resell these shares)?: $_____ **per share.**

52. Defining personal wealth to include both current income and fully anticipated future income, at this point in time, what **profit per share** would you include in your calculations of personal wealth?: $_____**per share.**

53. At this point in time I feel as though the shares are performing......

Circle one number

Behind of where I'd like them to be					Ahead of where I'd like them to be	
1	2	3	4	5	6	7

54. At this point in time I am more concerned about......

Circle one number

Maintaining the current stock price					Increasing the stock price	
1	2	3	4	5	6	7

55. At this point in time, what is the **profit per share** you are confident enough to use to secure financing on a purchase you really want to make?: $_____**per share.**

DECISION 3 - It is now December 1, 2002
Current market price = $42.00
The exercise price in TWO YEARS AND 30 DAYS (DECEMBER 31, 2004) = $29.00
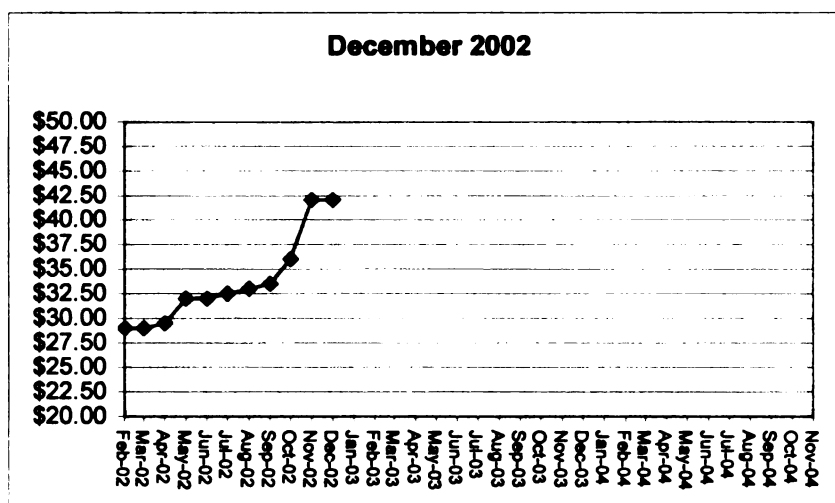
December 2002

Feb. 2002	29.00
Mar. 2002	29.00
Apr. 2002	29.50
May. 2002	32.00
Jun. 2002	32.00
Jul. 2002	32.50
Aug. 2002	33.00
Sep. 2002	33.50
Oct. 2002	36.00
Nov. 2002	42.00
Dec. 2002	42.00

56. At this point in time, what is the **profit per share** you expect to earn at exercise (when you are able to purchase and resell these shares)?: $_____ **per share.**

57. Defining personal wealth to include both current income and fully anticipated future income, at this point in time, what **profit per share** would you include in your calculations of personal wealth?: $_____ **per share.**

58. At this point in time I feel as though the shares are performing......

Circle one number

Behind of where I'd like them to be						Ahead of where I'd like them to be
1	2	3	4	5	6	7

59. At this point in time I am more concerned about......

Circle one number

Maintaining the current stock price						Increasing the stock price
1	2	3	4	5	6	7

60. At this point in time, what is the **profit per share** you are confident enough to use to secure financing on a purchase you really want to make?: $_____ **per share.**

DECISION 4 - It is now January 1, 2004
Current market price = $42.00.
The exercise price in ONE YEAR (DECEMBER 31, 2004) = $29.00

January 2004
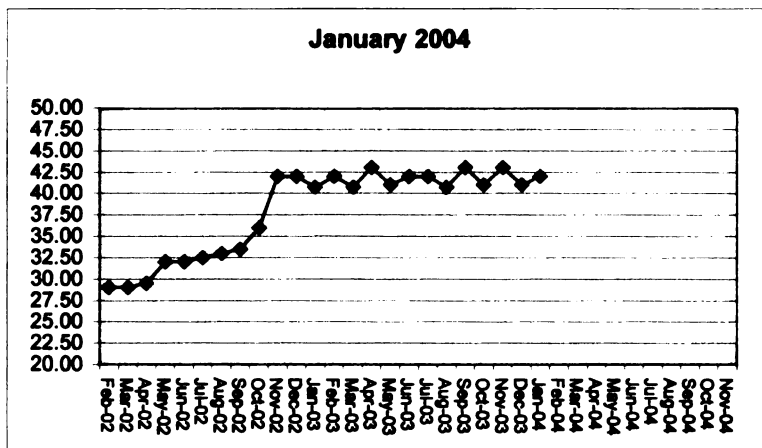
Feb. 2003	42.00
Mar. 2003	40.75
Apr. 2003	43.00
May. 2003	41.00
Jun. 2003	42.00
Jul. 2003	42.00
Aug. 2003	40.75
Sep. 2003	43.00
Oct. 2003	41.00
Nov. 2003	43.00
Dec. 2003	41.00
Jan. 2004	42.00

61. At this point in time, what is the **profit per share** you expect to earn at exercise (when you are able to purchase and resell these shares)?: $_____ **per share.**

62. Defining personal wealth to include both current income and fully anticipated future income, at this point in time, what **profit per share** would you include in your calculations of personal wealth?: $_____ **per share.**

63. At this point in time I feel as though the shares are performing......

<div align="center">Circle one number</div>

Behind of where I'd like them to be					Ahead of where I'd like them to be	
1	2	3	4	5	6	7

64. At this point in time I am more concerned about......

<div align="center">Circle one number</div>

Maintaining the current stock price					Increasing the stock price	
1	2	3	4	5	6	7

65. Has your initial profit per share goal changed?   **Circle one: yes   no**

If yes please indicate the new figure: **$ per share** _____.

66. At this point in time, what is the **profit per share** you are confident enough to use to secure financing on a purchase you really want to make?: $_____ **per share.**

Decision 5 - It is now April 1, 2004
Current market = $36.00.
The exercise price in NINE MONTHS (DECEMBER 31, 2004) = $29.00
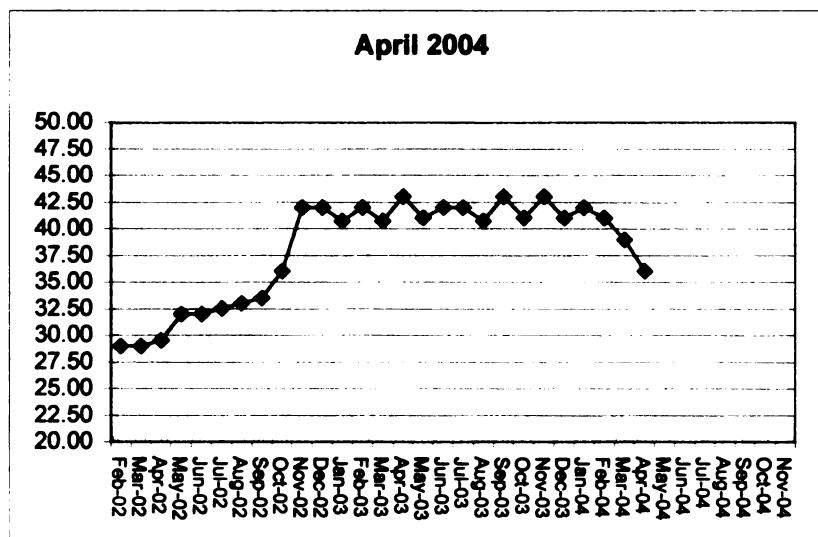
April 2004

Apr. 2003	43.00
May. 2003	41.00
Jun. 2003	42.00
Jul. 2003	42.00
Aug. 2003	40.75
Sep. 2003	43.00
Oct. 2003	41.00
Nov. 2003	43.00
Dec. 2003	41.00
Jan. 2004	42.00
Feb. 2004	41.00
Mar. 2004	39.00
Apr. 2004	36.00

67. At this point in time, what is the **profit per share** you expect to earn at exercise (when you are able to purchase and resell these shares)?: $_____ **per share.**

68. Defining personal wealth to include both current income and fully anticipated future income, at this point in time, what **profit per share** would you include in your calculations of personal wealth?: $_____ **per share.**

69. At this point in time I feel as though the shares are performing......

<table>
<tr><td colspan="7" align="center">Circle one number</td></tr>
<tr><td colspan="2">Behind of where
I'd like them to be</td><td></td><td></td><td></td><td colspan="2">Ahead of where
I'd like them to be</td></tr>
<tr><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td><td>7</td></tr>
</table>

70. At this point in time I am more concerned about......

<table>
<tr><td colspan="7" align="center">Circle one number</td></tr>
<tr><td colspan="2">Maintaining the
current stock price</td><td></td><td></td><td></td><td colspan="2">Increasing the
stock price</td></tr>
<tr><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td><td>7</td></tr>
</table>

71. Please indicate the **profit per share** you would need to earn at exercise in order to feel that you have not lost any wealth you felt you had previously gained?: $_____ **per share.**

72. At this point in time, what is the **profit per share** you are confident enough to use to secure financing on a purchase you really want to make?: $_____ **per share.**

DECISION 6 - It is now June 1, 2004
Current market price = $33.00.
The exercise price in SEVEN MONTHS (DECEMBER 31, 2004) = $29.00
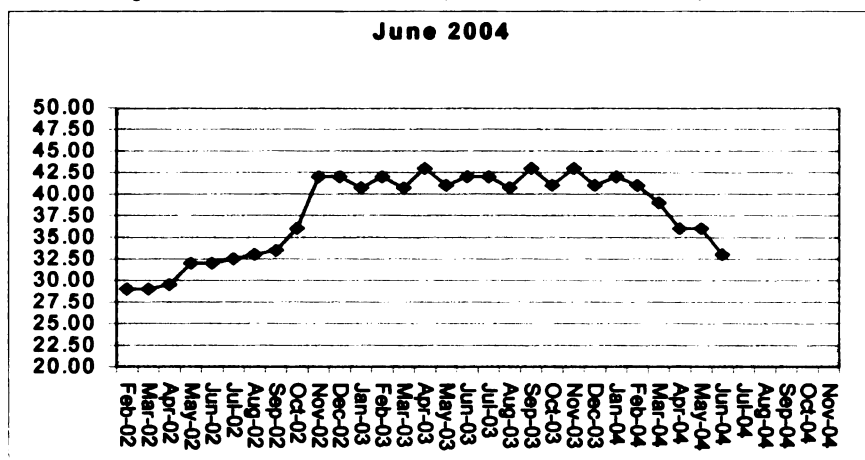
May. 2003	41.00
Jun. 2003	42.00
Jul. 2003	42.00
Aug. 2003	40.75
Sep. 2003	43.00
Oct. 2003	41.00
Nov. 2003	43.00
Dec. 2003	41.00
Jan. 2004	42.00
Feb. 2004	41.00
Mar. 2004	39.00
Apr. 2004	36.00
May. 2004	36.00
Jun. 2004	33.00

73. At this point in time, what is the **profit per share** you expect to earn at exercise (when you are able to purchase and resell these shares)?: $_____ **per share.**

74. Defining personal wealth to include both current income and fully anticipated future income, at this point in time, what **profit per share** would you include in your calculations of personal wealth?: $_____ **per share.**

75. At this point in time I feel as though the shares are performing......

Circle one number

Behind of where I'd like them to be					Ahead of where I'd like them to be	
1	2	3	4	5	6	7

76. At this point in time I am more concerned about......

Circle one number

Maintaining the current stock price					Increasing the stock price	
1	2	3	4	5	6	7

77. Please indicate the **profit per share** you would need to earn at exercise in order to feel that you have not lost any wealth you felt you had previously gained?: $_____ **per share.**

78. At this point in time, what is the **profit per share** you are confident enough to use to secure financing on a purchase you really want to make?: $_____ **per share.**

DECISION 7 - It is now November 1, 2004
Current market price = $25.00.
The exercise price in TWO MONTHS (DECEMBER 31, 2004) = $29.00
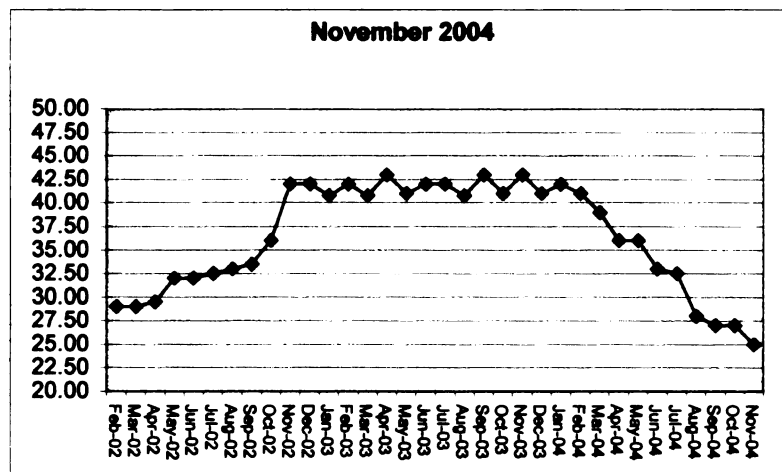
November 2004

Jul. 2003	42.00
Aug. 2003	40.75
Sep. 2003	43.00
Oct. 2003	41.00
Nov. 2003	43.00
Dec. 2003	41.00
Jan. 2004	42.00
Feb. 2004	41.00
Mar. 2004	39.00
Apr. 2004	36.00
May. 2004	36.00
Jun. 2004	33.00
Jul. 2004	32.50
Aug. 2004	28.00
Sep. 2004	27.00
Oct. 2004	27.00
Nov. 2004	25.00

79. At this point in time, what is the **profit per share** you expect to earn at exercise (when you are able to purchase and resell these shares)?: $_____ **per share.**

80. Defining personal wealth to include both current income and fully anticipated future income, at this point in time, what **profit per share** would you include in your calculations of personal wealth?: $_____**per share.**

81. At this point in time I feel as though the shares are performing......

		Circle one number				
Behind of where I'd like them to be						Ahead of where I'd like them to be
1	2	3	4	5	6	7

82. At this point in time I am more concerned about......

		Circle one number				
Maintaining the current stock price						Increasing the stock price
1	2	3	4	5	6	7

83. Please indicate the **profit per share** you would need to earn at exercise in order to feel that you have not lost any wealth you felt you had previously gained?: $_____ **per share.**

84. At this point in time, what is the **profit per share** you are confident enough to use to secure financing on a purchase you really want to make?: $_____**per share.**

APPENDIX F

Non-flexible condition (Internal and External)

Internal/Non-flexible condition

IMNF-2

BACKGROUND

You are the vice president of sales of a small firm. You have complete authority over all sales activities, including, accounting, pricing, collection, and delivery policies. In slow periods this flexibility allows you to adjust policy to increase or manipulate the timing of sales (shift sales from one period to another), to meet your internal sales goals. Although industry-wide sales have been flat over recent years, analysts expect this figure to begin to increase over the next five years. However, analysts caution some firms may be better positioned to take advantage of this growth than others.

In December 2001 a long-term bonus plan was added to your compensation package. The length of the plan is three years. The plan works as follows:

On December 31, 2004 your firm's three-year unit sales figure will be

compared to the unit sales figure of the last three-year period. The plan

rewards you for achieving percentage increases in three-year unit sales

according to the following schedule:

Percentage points Increase in unit sales	Bonus amount
3% - 3.99%	$45,000
4% - 4.99%	$60,000
5% - 5.99%	$75,000
6% - 6.99%	$90,000
7% - 7.99%	$105,000
8% - 8.99%	$120,000
9% - 9.99%	$135,000

YOUR GOAL

The CEO set a **goal to exceed last period's unit sales by 6%** for the plan period.

External/Non flexible condition

EMNF-4

BACKGROUND
You are the vice president of sales of a small firm. You have complete authority over all sales activities, including, accounting, pricing, collection, and delivery policies. In slow periods this flexibility allows you to adjust policy to increase or manipulate the timing of sales (shift sales from one period to another), to meet your internal sales goals. Although industry-wide sales have been flat over recent years, analysts expect this figure to begin to increase over the next five years. However, analysts caution some firms may be better positioned to take advantage of this growth than others.

In December 2001 a long-term bonus plan was added to your compensation package. The length of the plan is three years. The plan works as follows:

On December 31, 2004 your firm's three-year unit sales will be compared

with the average industry unit sales for the same period. Most of your

competitors also have bonus plans that are also based on exceeding the

industry average unit sales. Consequently, you are unsure what the period

industry average unit sales figure will be on December 31, 2004. The plan

rewards you for achieving percentage increases in over the three-year

industry average according to the following schedule:

Percentage increase Over industry average	Bonus amount
3% - 3.99%	$45,000
4% - 4.99%	$60,000
5% - 5.99%	$75,000
6% - 6.99%	$90,000
7% - 7.99%	$105,000
8% - 8.99%	$120,000
9% - 9.99%	$135,000

YOUR GOAL
The CEO set a **goal to exceed last period's unit sales by 6%** for the plan period.

APPENDIX G

Survey - Non-flexible conditions (Internal and External measures)

Please answer the following questions:

85. What is your **bonus goal?**: $_____.

86. On the scale below please indicate the level of control you feel you have over the structure of this bonus (how much control do you feel you have over your firm exceeding last period's sales in the allotted time frame?:

Low control						High control
1	2	3	4	5	6	7

87. On the scale below please indicate your perception of the likelihood of receiving this bonus:

Low likelihood						High likelihood
1	2	3	4	5	6	7

Decision 1 - It is now August 1, 2002

Bonus in TWO YEARS AND FIVE MONTHS (DECEMBER 31, 2004) would be
$0.00

MONTH	Feb. 2002	Mar. 2002	Apr. 2002	May. 2002	Jun. 2002	Jul. 2002	Aug. 2002
% INCREASE	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	1.00%
BONUS LEVEL	0	0	0	0	0	0	0

Please answer the following questions:

88. At this point in time, what is the **bonus** you expect to earn at the end of this plan?:

$_____.

89. At this point in time, how much of the figure you listed above are you confident enough to

use to secure financing on a purchase you really want to make?:

$_____.

90. At this point in time I feel as though my bonus is......

Circle one number						
Behind of where I'd like it to be						Ahead of where I'd like it to be
1	2	3	4	5	6	7

91. At this point in time I am more concerned about......

Circle one number						
Maintaining my current bonus level						Increasing my current bonus level
1	2	3	4	5	6	7

Decision 2 - It is now November 1, 2002

Bonus in TWO YEARS AND TWO MONTHS (DECEMBER 31, 2004) would be $45,000

MONTH	Feb. 2002	Mar. 2002	Apr. 2002	May. 2002	Jun. 2002	Jul. 2002	Aug. 2002	Sep. 2002
% INCREASE	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	1.00%	1.75%
BONUS LEVEL	0	0	0	0	0	0	0	0

MONTH	Oct. 2002	Nov. 2002
% INCREASE	2.00%	3.00%
BONUS LEVEL	0	45,000

92. At this point in time, what is the **bonus** you expect to earn at the end of this plan?:

$_____.

93. At this point in time, how much of the figure you listed above are you confident enough to

use to secure financing on a purchase you really want to make?:

$_____.

94. At this point in time I feel as though my bonus is......

Circle one number						
Behind of where I'd like it to be						Ahead of where I'd like it to be
1	2	3	4	5	6	7

95. At this point in time I am more concerned about......

<div style="text-align:center">Circle one number</div>

Maintaining my current bonus level						Increasing my current bonus level
1	2	3	4	5	6	7

Decision 3 - It is now December 1, 2002

Bonus in TWO YEARS AND 30 DAYS (DECEMBER 31, 2004) would be $45,000

MONTH	Feb. 2002	Mar. 2002	Apr. 2002	May. 2002	Jun. 2002	Jul. 2002	Aug. 2002	Sep. 2002
% INCREASE	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	1.00%	1.75%
BONUS LEVEL	0	0	0	0	0	0	0	0

MONTH	Oct. 2002	Nov. 2002	Dec. 2002
% INCREASE	2.00%	3.00%	3.00%
BONUS LEVEL	0	45,000	45,000

96. At this point in time, what is the **bonus** you expect to earn at the end of this plan?:

$_____.

97. At this point in time, how much of the figure you listed above are you confident enough to

use to secure financing on a purchase you really want to make?:

$_____.

98. At this point in time I feel as though my bonus is......

<div style="text-align:center">Circle one number</div>

Behind of where I'd like it to be						Ahead of where I'd like it to be
1	2	3	4	5	6	7

99. At this point in time I am more concerned about......

<div style="text-align:center">Circle one number</div>

Maintaining my current bonus level						Increasing my current bonus level
1	2	3	4	5	6	7

Decision 4 - It is now December 1, 2003

Bonus in ONE YEAR & ONE MONTH (DECEMBER 31, 2004) would be **$120,000**
Optional extension to December 31, 2005

MONTH	Feb. 2002	Mar. 2002	Apr. 2002	May. 2002	Jun. 2002	Jul. 2002	Aug. 2002	Sep. 2002
% INCREASE	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	1.00%	1.75%
BONUS LEVEL	0	0	0	0	0	0	0	0
MONTH	Oct. 2002	Nov. 2002	Dec. 2002	Jan. 2003	Feb. 2003	Mar. 2003	Apr. 2003	May. 2003
% INCREASE	2.00%	3.00%	3.00%	4.50%	7.25%	7.25%	6.88%	7.55%
BONUS LEVEL	0	45,000	45,000	60,000	105,000	105,000	90,000	105,000
MONTH	Jun. 2003	Jul. 2003	Aug. 2003	Sep. 2003	Oct. 2003	Nov. 2003	Dec. 2003	
% INCREASE	6.90%	8.00%	7.00%	7.00%	7.00%	7.00%	8.00%	
BONUS LEVEL	90,000	120,000	105,000	105,000	105,000	105,000	120,000	

100. At this point in time, what is the **bonus** you expect to earn at the end of this plan?:

   $_____.

101. At this point in time, how much of the figure you listed above are you confident enough to use to secure financing on a purchase you really want to make?:

   $_____.

102. At this point in time I feel as though my bonus is......

Circle one number

Behind of where I'd like it to be						Ahead of where I'd like it to be
1	2	3	4	5	6	7

103. At this point in time I am more concerned about......

Circle one number

Maintaining my current bonus level						Increasing my current bonus level
1	2	3	4	5	6	7

Decision 5 - It is now January 1, 2004

Bonus in ONE YEAR (DECEMBER 31, 2004) would be **$120,000**

MONTH	Feb. 2002	Mar. 2002	Apr. 2002	May. 2002	Jun. 2002	Jul. 2002	Aug. 2002	Sep. 2002
% INCREASE	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	1.00%	1.75%
BONUS LEVEL	0	0	0	0	0	0	0	0

MONTH	Oct. 2002	Nov. 2002	Dec. 2002	Jan . 2003	Feb. 2003	Mar. 2003	Apr. 2003	May. 2003
% INCREASE	2.00%	3.00%	3.00%	4.50%	7.25%	7.25%	6.88%	7.55%
BONUS LEVEL	0	45,000	45,000	60,000	105,000	105,000	90,000	105,000

MONTH	Jun. 2003	Jul. 2003	Aug. 2003	Sep. 2003	Oct. 2003	Nov. 2003	Dec. 2003	Jan. 2004
% INCREASE	6.90%	8.00%	7.00%	7.00%	7.00%	7.00%	8.00%	8.00%
BONUS LEVEL	90,000	120,000	105,000	105,000	105,000	105,000	120,000	120,000

104. At this point in time, what is the **bonus** you expect to earn at the end of this plan?:

$_____.

105. At this point in time, how much of the figure you listed above are you confident enough to use to secure financing on a purchase you really want to make?:

$_____.

106. At this point in time I feel as though my bonus is......

Circle one number

Behind of where I'd like it to be						Ahead of where I'd like it to be
1	2	3	4	5	6	7

107. At this point in time I am more concerned about......

Circle one number

Maintaining my current bonus level						Increasing my current bonus level
1	2	3	4	5	6	7

108. Has your initial bonus goal changed? **Circle one:**   yes   no

If yes please indicate the new figure $_____

Decision 6 - It is now April 1, 2004

Bonus in NINE MONTHS (DECEMBER 31, 2004) would be $105,000

MONTH	Feb. 2002	Mar. 2002	Apr. 2002	May. 2002	Jun. 2002	Jul. 2002	Aug. 2002	Sep. 2002
% INCREASE	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	1.00%	1.75%
BONUS LEVEL	0	0	0	0	0	0	0	0

MONTH	Oct. 2002	Nov. 2002	Dec. 2002	Jan. 2003	Feb. 2003	Mar. 2003	Apr. 2003	May. 2003
% INCREASE	2.00%	3.00%	3.00%	4.50%	7.25%	7.25%	6.88%	7.55%
BONUS LEVEL	0	45,000	45,000	60,000	105,000	105,000	90,000	105,000

MONTH	Jun. 2003	Jul. 2003	Aug. 2003	Sep. 2003	Oct. 2003	Nov. 2003	Dec. 2003	Jan. 2004
% INCREASE	6.90%	8.00%	7.00%	7.00%	7.00%	7.00%	8.00%	8.00%
BONUS LEVEL	90,000	120,000	105,000	105,000	105,000	105,000	120,000	120,000

MONTH	Feb. 2004	Mar. 2004	Apr. 2004
% INCREASE	7.10%	7.10%	7.10%
BONUS LEVEL	105,000	105,000	105,000

109. At this point in time, what is the **bonus** you expect to earn at the end of this plan?:

$_____.

110. At this point in time, how much of the figure you listed above are you confident enough to use to secure financing on a purchase you really want to make?:

$_____.

111. At this point in time I feel as though my bonus is......

Circle one number

Behind of where I'd like it to be						Ahead of where I'd like it to be
1	2	3	4	5	6	7

112. At this point in time I am more concerned about......

Circle one number

Maintaining my current bonus level						Increasing my current bonus level
1	2	3	4	5	6	7

113. Please indicate the **bonus amount** you would need to earn at the end of the plan in order to feel that you have not lost any wealth you felt you had previously gained?:

$_____.

Decision 7 - It is now June 1, 2004

Bonus in SEVEN MONTHS (DECEMBER 31, 2004) would be **$60,000**

MONTH	Feb. 2002	Mar. 2002	Apr. 2002	May. 2002	Jun. 2002	Jul. 2002	Aug. 2002	Sep. 2002
% INCREASE	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	1.00%	1.75%
BONUS LEVEL	0	0	0	0	0	0	0	0
MONTH	Oct. 2002	Nov. 2002	Dec. 2002	Jan. 2003	Feb. 2003	Mar. 2003	Apr. 2003	May. 2003
% INCREASE	2.00%	3.00%	3.00%	4.50%	7.25%	7.25%	6.88%	7.55%
BONUS LEVEL	0	45,000	45,000	60,000	105,000	105,000	90,000	105,000
MONTH	Jun. 2003	Jul. 2003	Aug. 2003	Sep. 2003	Oct. 2003	Nov. 2003	Dec. 2003	Jan. 2004
% INCREASE	6.90%	8.00%	7.00%	7.00%	7.00%	7.00%	8.00%	8.00%
BONUS LEVEL	90,000	120,000	105,000	105,000	105,000	105,000	120,000	120,000
MONTH	Feb. 2004	Mar. 2004	Apr. 2004	May. 2004	Jun. 2004			
% INCREASE	7.10%	7.10%	7.10%	7.00%	4.00%			
BONUS LEVEL	105,000	105,000	105,000	105,000	60,000			

114. At this point in time, what is the **bonus** you expect to earn at the end of this plan?:

$_____.

115. At this point in time, how much of the figure you listed above are you confident enough to use to secure financing on a purchase you really want to make?:

$_____.

116. At this point in time I feel as though my bonus is......

Circle one number

Behind of where I'd like it to be						Ahead of where I'd like it to be
1	2	3	4	5	6	7

117. At this point in time I am more concerned about......

<div style="text-align:center">Circle one number</div>

Maintaining my current bonus level						Increasing my current bonus level
1	2	3	4	5	6	7

118. Please indicate the **bonus amount** you would need to earn at the end of the plan in order

to feel that you have not lost any wealth you felt you had previously gained?:

$_____.

APPENDIX H

Flexible condition (Internal and External)

Internal/Flexible condition

IMF-1

BACKGROUND

You are the vice president of sales of a small firm. You have complete authority over all sales activities, including, accounting, pricing, collection, and delivery policies. In slow periods this flexibility allows you to adjust policy to increase or manipulate the timing of sales (shift sales from one period to another), to meet your internal sales goals. Although industry-wide sales have been flat over recent years, analysts expect this figure to begin to increase over the next five years. However, analysts caution some firms may be better positioned to take advantage of this growth than others.

In December 2001 a long-term bonus plan was added to your compensation package. The minimum length of the plan is three years, but you have the option to extend it to four years. The plan works as follows:

On December 31, 2004 your firm's three-year unit sales figure will be

compared to the unit sales figure of the last three-year period. The plan

rewards you for achieving percentage increases in three-year unit sales

according to the following schedule:

Percentage points Increase in unit sales	Bonus amount
3% - 3.99%	$45,000
4% - 4.99%	$60,000
5% - 5.99%	$75,000
6% - 6.99%	$90,000
7% - 7.99%	$105,000
8% - 8.99%	$120,000
9% - 9.99%	$135,000

OPTION

If you wish, you can extend your plan for up to one additional year, in the event sales are not performing to plan on December 31, 2004. This allows you to the opportunity to cash out your bonus anytime between December 31, 2004 and December 31, 2005 – at the time most advantageous to you.

YOUR GOAL

The CEO set a **goal to exceed last period's unit sales by 6%** for the plan period.

EMF-3

BACKGROUND

You are the vice president of sales of a small firm. You have complete authority over all sales activities, including, accounting, pricing, collection, and delivery policies. In slow periods this flexibility allows you to adjust policy to increase or manipulate the timing of sales (shift sales from one period to another), to meet your internal sales goals. Although industry-wide sales have been flat over recent years, analysts expect this figure to begin to increase over the next five years. However, analysts caution some firms may be better positioned to take advantage of this growth than others.

In December 2001 a long-term bonus plan was added to your compensation package. The minimum length of the plan is three years, but **you have the option to extend it to four years**. The plan works as follows:

On December 31, 2004 your firm's three-year unit sales will be compared with the

average industry unit sales for the same period. Most of your competitors also have

bonus plans that are also based on exceeding the industry average unit sales.

Consequently, you are unsure what the period industry average unit sales figure will

be on December 31, 2004. The plan rewards you for achieving percentage increases

in over the three-year industry average according to the following schedule:

Percentage increase Over industry average	Bonus amount
3% - 3.99%	$45,000
4% - 4.99%	$60,000
5% - 5.99%	$75,000
6% - 6.99%	$90,000
7% - 7.99%	$105,000
8% - 8.99%	$120,000
9% - 9.99%	$135,000

OPTION

If you wish, you can extend your plan for up to one additional year, in the event sales are not performing to plan on December 31, 2004. This allows you to the opportunity to cash out your bonus anytime between December 31, 2004 and December 31, 2005 – at the time most advantageous to you.

YOUR GOAL

The CEO has set a **goal to exceed the average industry unit sales by 6%** for the plan period.

APPENDIX I

Survey - Flexible conditions (Internal and External measures)

Please answer the following questions:

119. What is your **bonus goal?**: $_____.

120. On the scale below please indicate the level of control you feel you have over the structure of this bonus (how much control do you feel you have over your firm exceeding last period's sales in the allotted time frame?:

Low control						High control
1	2	3	4	5	6	7

121. On the scale below please indicate your perception of the likelihood of receiving this bonus:

Low likelihood						High likelihood
1	2	3	4	5	6	7

Decision 1 - It is now August 1, 2002

Bonus in TWO YEARS AND FIVE MONTHS (DECEMBER 31, 2004) would be
$0.00
Optional extension to December 31, 2005

MONTH	Feb. 2002	Mar. 2002	Apr. 2002	May. 2002	Jun. 2002	Jul. 2002	Aug. 2002
% INCREASE	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	1.00%
BONUS LEVEL	0	0	0	0	0	0	0

122. At this point in time, what is the **bonus** you expect to earn at the end of this plan?:

   $_____.

123. At this point in time, how much of the figure you listed above are you confident enough to

   use to secure financing on a purchase you really want to make?:

   $_____.

124. At this point in time I feel as though my bonus is......

			Circle one number			
Behind of where I'd like it to be						Ahead of where I'd like it to be
1	2	3	4	5	6	7

125. At this point in time I am more concerned about......

			Circle one number			
Maintaining my current bonus level						Increasing my current bonus level
1	2	3	4	5	6	7

Decision 2 - It is now November 1, 2002

Bonus in TWO YEARS AND TWO MONTHS (DECEMBER 31, 2004) would be **$45,000**
Optional extension to December 31, 2005

MONTH	Feb. 2002	Mar. 2002	Apr. 2002	May. 2002	Jun. 2002	Jul. 2002	Aug. 2002	Sep. 2002
% INCREASE	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	1.00%	1.75%
BONUS LEVEL	0	0	0	0	0	0	0	0

MONTH	Oct. 2002	Nov. 2002
% INCREASE	2.00%	3.00%
BONUS LEVEL	0	45,000

126. At this point in time, what is the **bonus** you expect to earn at the end of this plan?:

$_____.

127. At this point in time, how much of the figure you listed above are you confident enough to use to secure financing on a purchase you really want to make?:

$_____.

128. At this point in time I feel as though my bonus is......

			Circle one number			
Behind of where I'd like it to be						Ahead of where I'd like it to be
1	2	3	4	5	6	7

129. At this point in time I am more concerned about......

<div align="center">Circle one number</div>

Maintaining my current bonus level						Increasing my current bonus level
1	2	3	4	5	6	7

Decision 3 - It is now December 1, 2002

Bonus in TWO YEARS AND 30 DAYS (DECEMBER 31, 2004) would be **$45,000**
Optional extension to December 31, 2005

MONTH	Feb. 2002	Mar. 2002	Apr. 2002	May. 2002	Jun. 2002	Jul. 2002	Aug. 2002	Sep. 2002
% INCREASE	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	1.00%	1.75%
BONUS LEVEL	0	0	0	0	0	0	0	0

MONTH	Oct. 2002	Nov. 2002	Dec. 2002
% INCREASE	2.00%	3.00%	3.00%
BONUS LEVEL	0	45,000	45,000

130. At this point in time, what is the **bonus** you expect to earn at the end of this plan?:

$_____.

131. At this point in time, how much of the figure you listed above are you confident enough to

use to secure financing on a purchase you really want to make?:

$_____.

132. At this point in time I feel as though my bonus is......

<div align="center">Circle one number</div>

Behind of where I'd like it to be						Ahead of where I'd like it to be
1	2	3	4	5	6	7

133. At this point in time I am more concerned about......

<div align="center">Circle one number</div>

Maintaining my current bonus level						Increasing my current bonus level
1	2	3	4	5	6	7

Decision 4 - It is now December 1, 2003

Bonus in ONE YEAR & ONE MONTH (DECEMBER 31, 2004) would be **$120,000**
Optional extension to December 31, 2005

MONTH	Feb. 2002	Mar. 2002	Apr. 2002	May. 2002	Jun. 2002	Jul. 2002	Aug. 2002	Sep. 2002
% INCREASE	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	1.00%	1.75%
BONUS LEVEL	0	0	0	0	0	0	0	0

MONTH	Oct. 2002	Nov. 2002	Dec. 2002	Jan. 2003	Feb. 2003	Mar. 2003	Apr. 2003	May. 2003
% INCREASE	2.00%	3.00%	3.00%	4.50%	7.25%	7.25%	6.88%	7.55%
BONUS LEVEL	0	45,000	45,000	60,000	105,000	105,000	90,000	105,000

MONTH	Jun. 2003	Jul. 2003	Aug. 2003	Sep. 2003	Oct. 2003	Nov. 2003	Dec. 2003
% INCREASE	6.90%	8.00%	7.00%	7.00%	7.00%	7.00%	8.00%
BONUS LEVEL	90,000	120,000	105,000	105,000	105,000	105,000	120,000

134. At this point in time, what is the **bonus** you expect to earn at the end of this plan?:

$_____.

135. At this point in time, how much of the figure you listed above are you confident enough to use to secure financing on a purchase you really want to make?:

$_____.

136. At this point in time I feel as though my bonus is......

Circle one number						
Behind of where I'd like it to be						Ahead of where I'd like it to be
1	2	3	4	5	6	7

137. At this point in time I am more concerned about......

Circle one number						
Maintaining my current bonus level						Increasing my current bonus level
1	2	3	4	5	6	7

Decision 5 - It is now January 1, 2004

Bonus in ONE YEAR (DECEMBER 31, 2004) would be **$120,000**
Optional extension to December 31, 2005

MONTH	Feb. 2002	Mar. 2002	Apr. 2002	May. 2002	Jun. 2002	Jul. 2002	Aug. 2002	Sep. 2002
% INCREASE	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	1.00%	1.75%
BONUS LEVEL	0	0	0	0	0	0	0	0
MONTH	Oct. 2002	Nov. 2002	Dec. 2002	Jan. 2003	Feb. 2003	Mar. 2003	Apr. 2003	May. 2003
% INCREASE	2.00%	3.00%	3.00%	4.50%	7.25%	7.25%	6.88%	7.55%
BONUS LEVEL	0	45,000	45,000	60,000	105,000	105,000	90,000	105,000
MONTH	Jun. 2003	Jul. 2003	Aug. 2003	Sep. 2003	Oct. 2003	Nov. 2003	Dec. 2003	Jan. 2004
% INCREASE	6.90%	8.00%	7.00%	7.00%	7.00%	7.00%	8.00%	8.00%
BONUS LEVEL	90,000	120,000	105,000	105,000	105,000	105,000	120,000	120,000

138. At this point in time, what is the **bonus** you expect to earn at the end of this plan?:

    $_____.

139. At this point in time, how much of the figure you listed above are you confident enough to

    use to secure financing on a purchase you really want to make?:

    $_____.

140. At this point in time I feel as though my bonus is......

<table>
<tr><td colspan="7">Circle one number</td></tr>
<tr><td>Behind of where
I'd like it to be</td><td></td><td></td><td></td><td></td><td></td><td>Ahead of where
I'd like it to be</td></tr>
<tr><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td><td>7</td></tr>
</table>

141. At this point in time I am more concerned about......

<table>
<tr><td colspan="7">Circle one number</td></tr>
<tr><td>Maintaining
my current
bonus level</td><td></td><td></td><td></td><td></td><td></td><td>Increasing my
current bonus
level</td></tr>
<tr><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td><td>7</td></tr>
</table>

142. Has your initial bonus goal changed? **Circle one:**   **yes   no**

    If yes please indicate the new figure $_____

113

Decision 6 - It is now April 1, 2004

Bonus in NINE MONTHS (DECEMBER 31, 2004) would be **$105,000**
Optional extension to December 31, 2005

MONTH	Feb. 2002	Mar. 2002	Apr. 2002	May. 2002	Jun. 2002	Jul. 2002	Aug. 2002	Sep. 2002
% INCREASE	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	1.00%	1.75%
BONUS LEVEL	0	0	0	0	0	0	0	0

MONTH	Oct. 2002	Nov. 2002	Dec. 2002	Jan. 2003	Feb. 2003	Mar. 2003	Apr. 2003	May. 2003
% INCREASE	2.00%	3.00%	3.00%	4.50%	7.25%	7.25%	6.88%	7.55%
BONUS LEVEL	0	45,000	45,000	60,000	105,000	105,000	90,000	105,000

MONTH	Jun. 2003	Jul. 2003	Aug. 2003	Sep. 2003	Oct. 2003	Nov. 2003	Dec. 2003	Jan. 2004
% INCREASE	6.90%	8.00%	7.00%	7.00%	7.00%	7.00%	8.00%	8.00%
BONUS LEVEL	90,000	120,000	105,000	105,000	105,000	105,000	120,000	120,000

MONTH	Feb. 2004	Mar. 2004	Apr. 2004
% INCREASE	7.10%	7.10%	7.10%
BONUS LEVEL	105,000	105,000	105,000

143. At this point in time, what is the **bonus** you expect to earn at the end of this plan?:

    $_____.

144. At this point in time, how much of the figure you listed above are you confident enough to

    use to secure financing on a purchase you really want to make?:

    $_____.

145. At this point in time I feel as though my bonus is......

Circle one number						
Behind of where I'd like it to be						Ahead of where I'd like it to be
1	2	3	4	5	6	7

146. At this point in time I am more concerned about......

Circle one number						
Maintaining my current bonus level						Increasing my current bonus level
1	2	3	4	5	6	7

147. Please indicate the **bonus amount** you would need to earn at the end of the plan in order to feel that you have not lost any wealth you felt you had previously gained?:

    $_____.

Decision 7 - It is now June 1, 2004
Bonus in SEVEN MONTHS (DECEMBER 31, 2004) would be **$60,000**
Optional extension to December 31, 2005

MONTH	Feb. 2002	Mar. 2002	Apr. 2002	May. 2002	Jun. 2002	Jul. 2002	Aug. 2002	Sep. 2002
% INCREASE	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	1.00%	1.75%
BONUS LEVEL	0	0	0	0	0	0	0	0
MONTH	Oct. 2002	Nov. 2002	Dec. 2002	Jan. 2003	Feb. 2003	Mar. 2003	Apr. 2003	May. 2003
% INCREASE	2.00%	3.00%	3.00%	4.50%	7.25%	7.25%	6.88%	7.55%
BONUS LEVEL	0	45,000	45,000	60,000	105,000	105,000	90,000	105,000
MONTH	Jun. 2003	Jul. 2003	Aug. 2003	Sep. 2003	Oct. 2003	Nov. 2003	Dec. 2003	Jan. 2004
% INCREASE	6.90%	8.00%	7.00%	7.00%	7.00%	7.00%	8.00%	8.00%
BONUS LEVEL	90,000	120,000	105,000	105,000	105,000	105,000	120,000	120,000
MONTH	Feb. 2004	Mar. 2004	Apr. 2004	May. 2004	Jun. 2004			
% INCREASE	7.10%	7.10%	7.10%	7.00%	4.00%			
BONUS LEVEL	105,000	105,000	105,000	105,000	60,000			

148. At this point in time, what is the **bonus** you expect to earn at the end of this plan?:

$_____.

149. At this point in time, how much of the figure you listed above are you confident enough to

use to secure financing on a purchase you really want to make?:

$_____.

150. At this point in time I feel as though my bonus is......

Circle one number

Behind of where I'd like it to be						Ahead of where I'd like it to be
1	2	3	4	5	6	7

151. At this point in time I am more concerned about......

Circle one number

Maintaining my current bonus level						Increasing my current bonus level
1	2	3	4	5	6	7

152. Please indicate the bonus amount you would need to earn at the end of the plan in order

to feel that you have not lost any wealth you felt you had previously gained?:

$_____.