

STRATEGIC ORIENTATIONS, INCENTIVE PLAN ADOPTIONS, AND FIRM PERFORMANCE: EVIDENCE FROM ELECTRIC UTILITY FIRMS

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This study examines the performance implications of the fit between strategic orientations and incentive plan characteristics. Research hypotheses are based on a framework that draws upon managerial discretion and agency theories to identify the links between firm strategy, managerial motivation and control, managerial risk-bearing, and incentive plan characteristics. A pooled cross-sectional, time series research design is used to test hypotheses in a sample of 50 electric utility firms. Consistent with theory, results indicate that annual bonus plans that use cash incentives and accounting measures of performance lead to better performance among firms with Defender strategic orientations. In contrast, firms with Prospector strategic orientations realize performance benefits when they adopt stock-based incentive plans and use market measures to evaluate managerial performance. © 1997 by John Wiley & Sons, Ltd.

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INTRODUCTION

The topic of executive compensation has fascinated both academic researchers and the business press for the past several decades. Over 300 empirical studies have been published on the determinants and consequences of executive compensation in fields as diverse as accounting (e.g., Brickley, Bhagat, and Lease, 1985; Healy, 1985; Tehranian, and Waegelein, 1985), finance (e.g., Murphy, 1985; Jensen and Murphy, 1990; Narayanan, 1985), industrial relations (e.g., Deckop, 1988) and strategic management (e.g., Kerr, 1985; Galbraith and Merrill, 1991; Rajagopalan and Finkelstein, 1992). The business press (e.g., *Business Week*, *Forbes*, *Fortune*) continues to fan public interest in the issue of executive pay by

publishing data on actual executive pay as well as anecdotal evidence that revolves around the issue of whether or not firm performance justifies the money that senior executives make. Yet, as noted in a recent comprehensive review of this topic (Gomez-Mejia, 1994), the link between executive pay and firm performance remains elusive and riddled with theoretical and empirical contradictions—after decades of empirical research unanswered questions far outnumber answered ones.

The basic premise of this paper is that there is no strong theoretical basis for expecting a universal relationship between executive pay and performance. Rather, such a relationship is likely to be contingent upon the specific characteristics of the compensation mechanisms in place within a firm and, more significantly, the extent to which these characteristics are consistent with the requirements posed by the firm's strategic context. As noted by Gomez-Mejia (1994: 201), however, 'research on how CEO pay "fits" with overarching organizational strategies is practically nonexistent. By the same token, little is known about

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the firm performance implications of such a fit or misfit.'

The purpose of this paper is to contribute towards filling this important gap in the executive compensation literature by systematically examining the performance implications of the fit between a firm's strategic orientation and its incentive plans. The empirical context for this study is the electric utility industry which, during the 1983-87 time period, moved from a situation of virtually no incentive plans to one where the majority of firms had adopted at least one major incentive plan (Rajagopalan and Finkelstein, 1992). The relative recency of incentive plan adoptions and the variations in adoption behaviors across firms with different strategic orientations make this industry an ideal context to examine longitudinally the performance implications of the fit between incentive plans and strategic orientations.

The paper is organized as follows. The first section reviews past empirical literature on the relationships between strategy, executive compensation, and firm performance and uses this review to identify key theoretical and empirical gaps in our understanding. Second, the paper develops a theoretical framework which draws upon managerial discretion and agency theories to identify the implications of variations in strategic orientations for managerial motivation and control and managerial risk-bearing and hence, variations in the types of incentive plans likely to be appropriate from the viewpoint of firm performance. Specific research hypotheses are also presented in this section. The third section describes the research methods, including sample and time frame, measures, and data analysis. Next, the empirical results are presented. In the final section research implications, limitations, and directions for future research are identified and discussed.

FIRM STRATEGY, EXECUTIVE COMPENSATION AND FIRM PERFORMANCE: PAST RESEARCH

Empirical literature on the relationships between firm strategy, executive compensation, and firm performance can be broadly divided into three distinct streams. The first stream consists of studies which have focused on strategy-compensation relationships; studies within the second stream have examined the performance implications of

the fit between strategy and compensation systems; the last stream is represented by studies which have focused only on the relationships between executive compensation and firm performance. All three streams are relevant to the present study and hence, each one is discussed next and major conclusions and contradictions are identified.

Studies in stream one have examined the relationships between firm strategy, at the corporate or business level, and executive compensation systems. These empirical studies reflect an underlying theoretical argument put forth by many early compensation theorists (Salter, 1973; Rapaport, 1978), namely, that firms need to match their compensation systems to their strategic contexts (as defined by their corporate and business-level strategies) in order to realize positive performance benefits. This argument forms the theoretical basis for several studies which have related differences in compensation systems to differences in the extent and type of diversification (e.g., Kerr, 1985; Napier and Smith, 1987); the type of product-market strategy (e.g., Balkin and Gomez-Mejia, 1990; Gupta and Govindarajan, 1984) and the type of industry (e.g., Galbraith and Merrill, 1991). In general, these studies offer descriptive validity to the proposition that there are systematic relationships between executive compensation systems and firm strategies at both the corporate as well as the business levels of analysis. However, because none of the studies in this stream examined the actual performance effects of such variations, they do not identify whether certain strategy-compensation system combinations are more beneficial than others from the viewpoint of firm performance.

The second group consists of studies that have examined the performance implications of the fit between firm strategy and compensation systems. Increasingly, writers in the area of human resources management (e.g., Wright, Smart, and McMahan, 1995) have emphasized the need to match firms' human resource management (HRM) systems and programs to organizational strategic goals and plans. Increased attention is being paid to one especially important HRM program, compensation systems, as a major influence on the success of business strategies (Gomez-Mejia, 1994). Very few empirical studies, however, have examined the performance implications of the compensation-strategy link.

Interestingly, the few studies within the second stream have all been conducted by Gomez-Mejia and his colleagues. Based upon questionnaire survey responses provided by senior managers in a multi-industry sample of 105 firms, Balkin and Gomez-Mejia (1987) found that the effectiveness of incentive pay systems was contingent upon firm size, stage in the product life cycle, and technology emphasis. Utilizing a larger sample of 212 firms (again, from multiple industries), Balkin and Gomez-Mejia (1990) found that 'mechanistic' compensation systems which emphasized formalized rules and procedures, job-based pay, and centralized pay practices, contributed to effectiveness in related diversified firms and business units at the maintenance stage. In contrast, 'organic' compensation systems which emphasized flexible pay packages, individualized compensation patterns, and decentralized practices, were more effective when used in nondiversified firms and business units in the growth stage. In a subsequent study of 867 diversified firms, Gomez-Mejia (1992) also found that mechanistic compensation systems improved financial performance among dominant and related product firms whereas flexible compensation systems were more effective in the case of single-product firms.

While the studies in stream two make invaluable contributions to our understanding of the performance implications of the 'fit' between strategy and compensation, their findings are constrained by certain methodological limitations. First, the cross-sectional design used in these studies makes it difficult to isolate cause-effect relationships in a manner afforded by more longitudinal studies. Second, while the multi-industry samples of these studies enhances their generalizability, they may have limited internal validity. Issues of internal validity become especially crucial if we are interested in explaining variations in firm performance because performance can be affected by a host of internal and external factors. It is very difficult to control for such confounding influences in a multi-industry study. Third, given the corporate-level focus adopted by most of these studies, our understanding of compensation-performance relationships among nondiversified firms is very limited. Fourth, none of these studies examined if the presence or absence of incentive plans, *per se* enhanced organizational performance. An implicit assumption in much of the compensation literature is that a tight linkage between pay

and performance has positive performance effects (Kerr and Bettis, 1987; Tosi and Gomez-Mejia, 1989). However, in order to validate this assumption, the effects of incentive plans need to be isolated from other (more general) attributes of the compensation system such as the extent of centralization of pay practices.

A third group of empirical researchers who have focused more directly on the pay–performance relationship have contributed the greatest number of studies to the literature on executive compensation (Pavlik and Belkaoui, 1991). The first set of studies in this stream examines whether there are systematic relationships between the level/amount of executive pay (fixed and/or contingent) and firm performance. Given their focus on *pay levels*, these studies often use complex methodologies to value long-term/deferred incentive payments, stock options and performance shares. However, as noted by Gomez-Mejia (1994), in spite of utilizing similar archival data sources the voluminous work in this stream has yielded contradictory findings. While several studies have found a positive relationship between executive pay and firm performance (e.g., Deckop, 1988; Lambert and Larcker, 1987; Masson, 1971; Murphy, 1986), others have found no evidence of a pay–performance link (e.g., Kerr and Bettis, 1987; Jensen and Murphy, 1990; Leonard, 1990); yet others have found mixed relationships depending upon the performance measures used (e.g., Abowd, 1990; Antle and Smith, 1986). These contradictions could be partly attributed to the problems stemming from estimating the value of deferred/stock-based incentive payments. Firms use different formulas to report executive compensation and as noted by Berton (1990: 226), 'most companies don't give enough specifics to make the calculation.' The complex mathematical approaches that have been developed to value stock options, restricted stock awards, etc. require uncertain guesses on such values as future interest rates and opportunity costs, leading to widely divergent estimates as to the cash value of these plans both in the practitioner press as well as academic literature (Gomez-Mejia, 1994). In addition, executives can often choose when to receive stock bonuses or realize stock options, and it is almost impossible, therefore, to specify the year or years when the income generated by such plans should be credited to the executive's compensation package.

In contrast, the second set of studies within the pay–performance stream yields more consistent findings. These studies examine the pay–performance relationship in terms of the *incentive properties* of various compensation plans rather than the *amounts* actually awarded under such plans. Tehranian and Waegelein (1985) and Waegelein (1988) found that the adoption of short-term bonus plans led to favorable stock market reactions and hence, increase in shareholder returns. Larcker (1983) and Brickley et al. (1985) found similar effects in relation to long-term performance plans and Long (1988) reported positive performance effects in the case of stock option plans as well. The more consistent pattern of results provided by these studies in contrast to the studies which have used compensation levels/amounts may indicate that the links between the *types of incentives* and firm performance may be less tenuous than the relationships between the *amount of rewards* and performance.¹ However, the potential contribution of this stream in terms of understanding compensation–strategy–performance relationships is rather limited for two reasons. First, these studies examine short-term market reactions to the adoption of an incentive plan and hence, it is not known if these incentive plans have any longer-term performance effects. Second, none of these studies examined whether performance effects varied depending upon the firm's strategy.

Synthesizing the three streams of empirical research reviewed in the preceding sections, two overall conclusions can be drawn. First, there has been considerable work documenting the existence of systematic variations in executive compensation across firms' strategic contexts. However, empirical research examining the performance implications of the fit between firm strategy and executive compensation systems is quite limited, especially in the context of non-diversified firms. Second, the results of a vast

body of empirical literature that has examined pay–performance issues through valuing and quantifying the amount of executive compensation has only yielded contradictions; studies that have adopted an ‘incentive’ rather than ‘reward’ focus have yielded more consistent results.

The literature review presented above supports this paper's contention that examining the empirical links between firm strategy and incentive plans in terms of their implications for firm performance is likely to fill an important gap, theoretical as well as empirical, in extant research. In the next section the paper develops a theoretical framework and research hypotheses to address this gap.

THEORETICAL FRAMEWORK AND RESEARCH HYPOTHESES

In this section the paper draws upon managerial discretion (Hambrick and Finkelstein, 1987) and agency (Eisenhardt, 1989; Jensen and Meckling, 1976) theories to develop expected relationships between firm strategy, incentive plan characteristics, and firm performance. While several typologies have been developed for firm strategy at the business level, the Miles and Snow (1978) typology is the most comprehensive typology at the business level in that it not only describes firms' strategic orientations but also the structures, processes, and human resource practices likely to be most suited for a given strategy. For example, ‘Defender’ and ‘Prospector’ firms have exactly opposite orientations not only in terms of their strategic emphasis but also in terms of the human resource management practices considered appropriate (Miles and Snow, 1978). Hence, in the following paragraphs this typology is used to develop a theoretical framework which identifies the performance implications of the fit between strategy and incentive plan characteristics.

The theoretical framework presented in Figure 1 integrates arguments from managerial discretion and agency theory to develop a key premise of this paper—that the congruence between a firm's strategic orientation and incentive plan characteristics will have positive effects on firm performance. This premise is based on three theoretical relationships.

First, a firm's strategic orientation has direct implications for the type and extent of managerial

¹ While seldom recognized in empirical literature, incentives and rewards are conceptually as well as empirically distinct (Hambrick and Snow, 1989). Their primary difference is their separation in time. Incentives are held out at the beginning of a time period; rewards are delivered at the end of the evaluation period and may not correspond exactly to the incentives held out at the start of the period. The timing and size of rewards (e.g., value of stock options exercised) can be significantly affected by individual managerial preferences and tax considerations and hence, may bear little relation to actual firm performance during that time period.

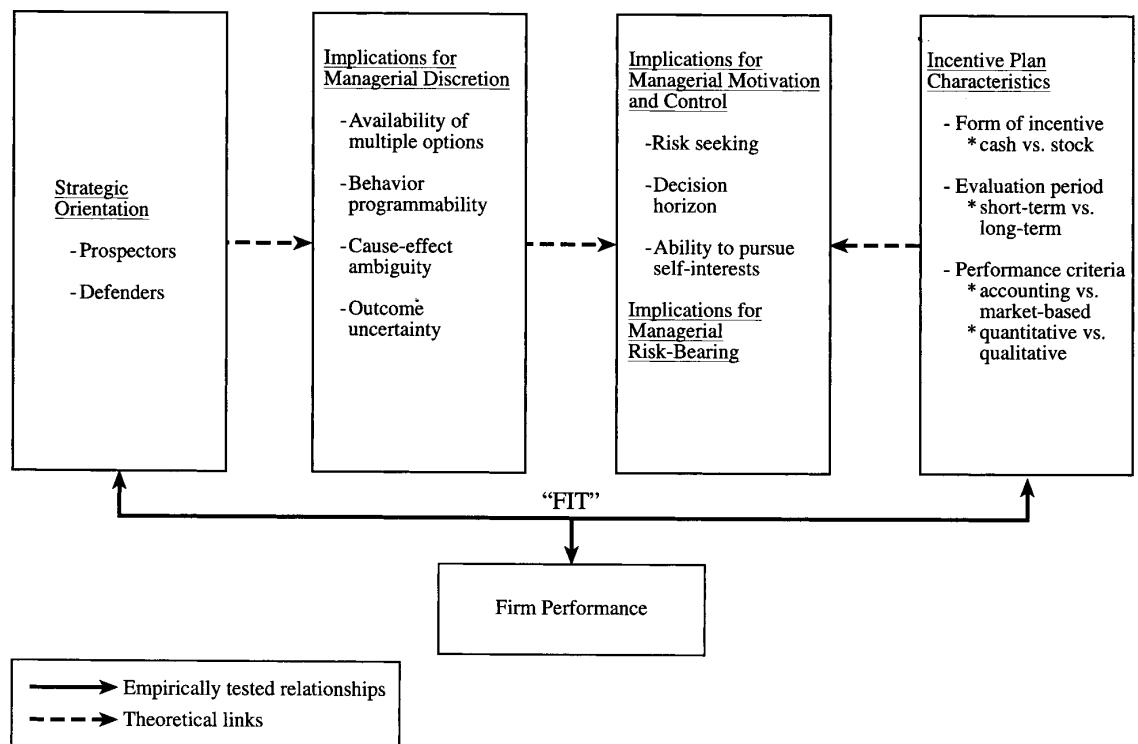


Figure 1. Theoretical framework

discretion available to key executives within the firm. Variations in managerial discretion manifest themselves in variations in the availability of multiple options, the extent to which managerial behaviors can be programmed, the degree of ambiguity in cause–effect relationships and the extent of outcome uncertainty (Rajagopalan and Finkelstein, 1992). Second, variations in these four factors have implications for two problems identified in agency² literature: (1) managerial motivation and control (Jensen and Meckling, 1976) and (2) managerial risk-bearing (Holmstrom, 1979; Shavell, 1979). From the viewpoint of the firm's principal, problems of managerial motivation and control (termed the 'incentive alignment' problem by agency theorists) arise when managerial behaviors cannot

be *a priori* specified by the principal and can hence, deviate from what would be optimal for the principal (Jensen and Murphy, 1990). These managerial behaviors relate to risk-seeking, decision horizon, and the ability of managers to pursue their self-interests. From the viewpoint of the manager, however, variations in the strategy context also affect the degree of risk borne by the manager (Hambrick and Snow, 1989). These two problems often pose conflicting requirements for the design of compensation systems because what may be optimal for incentive alignment from the principal's viewpoint may not be as efficient from a managerial risk-bearing perspective (Beatty and Zajac, 1994; Zajac and Westphal, 1994). Third, incentive plans differ in terms of the extent to which they address the problem of incentive alignment faced by the owner and the problem of risk-bearing faced by the manager. The differential ability of incentive plans to address these two agency problems can be related to three underlying characteristics of such plans: (1) the form of incentive (cash vs. stock), (2) the time frame for evaluation (short term vs. long term) and (3) the performance criteria used

² These two problems correspond to the two distinct streams of agency research discussed in Beatty and Zajac (1994). Problems of managerial motivation and control from the viewpoint of the firm's owners are central to the 'positive' agency literature (e.g., Jensen and Meckling, 1976) while managerial risk-bearing is a key concern in the 'normative' agency literature (e.g., Morck, Schleifer and Vishny, 1989; Stiglitz, 1975).

(accounting measures vs. market-based measures; quantitative vs. qualitative).

Next, the various links in this model are more fully developed to articulate the performance implications of the fit between firm strategy and various types of incentive plans.

Strategic orientations: Implications for managerial discretion, and implications for managerial motivation and control and managerial risk-bearing

The following paragraphs focus on the two strategic types within the Miles and Snow typology which offer the clearest implications for variations in incentive mechanisms: Prospectors and Defenders. Analyzers, the third strategic type in this typology, is a mixed strategic type which combines elements of both the Prospector and Defender types and hence, from an incentive perspective, is also likely to exhibit dual characteristics. Analyzers are not included in this discussion in order to keep the arguments more focused and straightforward (further, as discussed under Methods, no Analyzers were found in the study sample, which means research hypotheses could not be tested anyway). Reactors, the fourth strategic type, have no clear strategic focus and hence, from the viewpoint of strategy-compensation fit, theoretical arguments are highly tenuous. As discussed later under Methods, this strategy was treated as the base case for testing research hypotheses.

Prospectors

In the Miles and Snow (1978) typology, Prospector firms offer their top managers considerable discretion in several ways. First, managers in such firms can choose from a wide variety of options and there is considerable emphasis on exploring relatively novel ideas and strategies. It is difficult to specify required managerial behaviors in settings that confer significant latitude because of the multiplicity of choices open to managers. Further, aggressive, innovative strategies are not easily programmable (Rajagopalan and Finkelstein, 1992). Prospectors also tend not to have a long record of implementing unchanging policy (Miles and Snow, 1978), making it difficult for managers to rely on historical precedents. In addition, there is greater probability

of failure when new options are explored, leading to higher levels of outcome uncertainty (Hambrick and Snow, 1989). Overall, then, Prospector strategies are likely to be associated with the availability of multiple options, low behavior programmability, high cause-effect ambiguity, and outcome uncertainty.

The high discretion available to managers in Prospector firms implies a greater need for the principal to motivate and control managerial behaviors so that they align with the interests of the firm. First, Prospector firms require managers who are willing and able to take risks, as well as adopt a longer-term perspective when they are choosing between strategic options. Innovative, growth strategies are more likely to yield positive results in the long term than in the short term and often, there is a greater chance of failure associated with these strategies than less innovative strategies (Galbraith and Merrill, 1991). Second, the low programmability of behaviors and ambiguity of cause-effect relationships associated with this strategy implies that managers may be more able to pursue self-serving strategies without the fear of being discovered, at least in the short term. Thus, the high discretion afforded to managers in Prospector firms also exacerbates the managerial motivation and control problems faced by the principal and creates the need for compensation mechanisms which are more likely to align managerial behaviors with the interests of the owners (Jensen and Meckling, 1976). Hence, from the viewpoint of the firm's owners, incentive plans which promote risk-seeking behaviors and longer time horizons and control self-serving managerial behaviors are desirable for Prospector firms.

From the viewpoint of the firm's managers, however, the high degree of cause-effect ambiguity and outcome uncertainty posed by Prospector strategies increases the risk faced by the firm's managers because such strategies might fail in spite of the best efforts of the managers. The uncertainty faced by the manager in Prospector firms is likely to be further exacerbated by formulaic approaches to managerial evaluation that ignore managerial effort and unforeseen environmental events (Hambrick and Snow, 1989; Salter, 1973). Overall, the high discretion afforded by a Prospector strategy manifests itself in an interesting dilemma for the design of incentive mechanisms. Such mechanisms need to meet the prin-

cipal's requirements for managerial motivation and control but, given the risk faced by managers in Prospector firms, they also need to take into account managerial effort and unforeseen environmental events that adversely affect managerial performance. While incentive plans that are linked to managerial performance may be required in order to address the principal's incentive alignment problem, the managerial risk inherent in such plans needs to be addressed in the choice of evaluation period and performance criteria. For example, short-term profitability criteria may not be appropriate for Prospectors not only because such objectives penalize the manager for short-term fluctuations in performance, but also because they may cause the manager to unwittingly sabotage the long-term earning power of the business (Hambrick and Snow, 1989). Hence, incentive plans that reflect more holistic evaluation criteria and/or utilize qualitative performance criteria may be needed to achieve a balance between the incentive-alignment problem faced by the principal and the risk-bearing problem faced by the managers (Beatty and Zajac, 1994; Hambrick and Snow, 1989).

Overall, integrating the above arguments, the incentive plan characteristics which are likely to be most beneficial for Prospector firms are those that promote risk-seeking, foster long-term decision horizons, and build congruence between managerial and shareholder interests. However, in order to mitigate the managerial risk stemming from an uncertain strategy, such plans also need to utilize broader, more holistic evaluation criteria which take into account managerial effort and unforeseen environmental events.

Defenders

Defenders are firms that adopt, and protect, narrow and stable domains (Miles and Snow, 1978; Snow and Hrebiniak, 1980). Firms following Defender strategies tend to offer considerably less discretion to their top managers than Prospectors by constraining the range of options to primarily efficiency-based ones. The emphasis on efficiency may also constrain managerial behaviors by encouraging heavy investments and hence, lead to high sunk costs (Hannan and Freeman, 1977). In addition, the strategic factors of importance to Defenders tend to be limited to maintaining efficiency and reducing costs. Both the pro-

grammability of managerial behaviors and the relationships between cause and effect are more easily understood when strategies are stable and narrowly focused. In addition, the degree of outcome uncertainty associated with internal, efficiency-oriented strategies is much less than that associated with more externally oriented, domain expansion strategies (Gupta and Govindarajan, 1984). Overall, then, Defender strategies are associated with restricted managerial options, more emphasis on historical precedents and programmability, less cause-effect ambiguity and less outcome uncertainty.

The problems of managerial motivation and control faced by Defender firms are of a far lesser magnitude than those faced by Prospector firms. First, managers in Defender firms are less likely to need motivation for risk-seeking. In fact, risky behaviors may be counterproductive given the high capital investments involved in productivity-seeking strategies (Hambrick and Snow, 1989). Second, a short-term decision horizon may be more appropriate for Defender managers because efficiency-oriented strategies, and strategies that seek to penetrate existing product markets rather than develop new ones, typically yield results within a much shorter time frame than more innovative strategies (Galbraith and Merrill, 1991). Since Defenders persist in a course of action based on historical precedents, objectives can be more readily determined for the short term (Galbraith and Merrill, 1991; Hambrick and Snow, 1989).

While Defender strategies are consistent with the adoption of a shorter time horizon, it does not mean that such firms can afford to completely ignore the long-term either. While the purpose of long-term plans for Prospectors is to encourage more risk-seeking, the motivation for Defenders is to persist in their course of action and not compromise long-term efficiency for short-term gains. In Defenders, this can be accomplished by using objective, predetermined criteria for both the short term as well as long term (Rappaport, 1978). The problem of controlling self-serving managerial behaviors is also less pronounced for Defenders given that their behaviors are more readily programmable and the range of options is more limited. Incentive mechanisms that are linked to past performance and more objective criteria are more appropriate given the less cause-effect ambiguity of organizational outcomes.

These provide the specificity of controls desired in Defenders.

From the viewpoint of the firm's managers, a Defender strategy imposes less risk on the manager because of the low levels of cause–effect ambiguity and outcome uncertainty associated with a Defender strategy. Hence, managerial risk reduction need not be as key a criteria in the design of incentive mechanisms as it is for Prospector firms. Further, formula-based approaches to managerial evaluation are less likely to have disincentive effects on managers because of the closer relationship between managerial effort and organizational outcomes in Defender firms.

Overall, integrating these arguments, incentive plans likely to be most beneficial for Defenders are those that motivate less risky managerial behaviors and more adherence to past norms, balance a short-term and long-term decision horizon through quantitative, consistent performance criteria and provide more frequent feedback to managers so that they can evaluate the appropriateness of their recent actions.

Next, the properties of three different types of incentive plans in terms of their ability to meet these requirements for managerial motivation and control and managerial risk-bearing in Prospector and Defender firms are identified. These arguments are used to develop the specific research hypotheses tested in this paper.

Incentive plan characteristics: Implications for managerial motivation and control and managerial risk-bearing

While the executive compensation literature identifies a wide variety of incentive plans that are in use in business corporations, incentive plans can be broadly divided into two categories (Gomez-Mejia, 1994; Hambrick and Snow, 1989), based on whether they use nondiscretionary or discretionary performance criteria. Nondiscretionary incentive plans tend to use prespecified evaluation periods and explicit performance criteria. Annual bonus plans and long-term performance plans that link incentive compensation to the achievement of specific organizational goals are examples of nondiscretionary incentive plans. Discretionary incentive plans, in contrast, generally do not specify either the evaluation time period or the specific performance criteria which will be used to judge managerial performance.

Stock option plans and stock appreciation rights often fall into the category of discretionary incentive plans—the timing and size of such awards are usually at the discretion of a compensation committee of the board of directors and often determined by a subjective evaluation of managerial performance in the past as well as future expectations³ (Long, 1988).

Annual bonus plans

Annual bonus plans tend to emphasize short-term performance because, in general, they use annual accounting indicators of financial performance to evaluate managers (Campbell and Kracaw, 1985; Healy, 1985). Accounting measures of performance such as return on equity, return on investment, and earnings per share have the advantages of allowing the firm to target specific objectives and focus attention on asset management and efficiency. They provide a stronger link between managerial actions and performance since executives have greater control over financial performance than over stock performance and are considered appropriate in situations where the accounting indicators used to evaluate performance correspond to the strategic goals being pursued by the firm, i.e., short-term efficiency and continuation of past practices. Since accounting measures tap only specific dimensions of performance, they are appropriate in situations where firm performance can be represented by a few, specific outcomes and managerial actions can be unambiguously related to the achievement of such outcomes. While accounting measures provide considerable control over managerial actions, they also limit managerial attention to specific areas of firm performance. Hence, they are more appropriate for strategies which offer managers limited options for deviating from the past, dissuade risk-seeking and require frequent fine-tuning—characteristics more consistent with a Defender than a Prospector orientation. On the other hand, accounting measures may be inappropriate where

³ Nondiscretionary long-term plans are also often administered by a compensation committee but the size and timing of awards are dictated by predetermined criteria; in contrast, stock option plans are more likely to be discretionary. This distinction is an important one because discretionary incentive plans offer greater scope for the board of directors to take into account qualitative, subjective factors in evaluating managers than nondiscretionary incentive plans.

the firm's strategic goals require that managers pursue more risky alternatives with a longer time horizon—short-term earnings are typically adversely affected by such managerial behaviors (Rappaport, 1978). Prospectors are, hence, less likely to benefit from the use of accounting measures in their incentive plans.

Annual bonus plans tend to use cash (rather than stock) as the form of incentive. Cash incentives clearly link managerial rewards to past performance and generate no further risk or commitment on the part of the manager since the value of a cash bonus is not affected by how well the firm does in the future. In contrast, where the incentive is in the form of stock the future value of the stock can rise or fall depending upon the future market performance of the firm and hence, stock awards are more likely to create a long-term orientation on the part of the manager (Black and Scholes, 1973). Thus, cash incentives are less effective at aligning the interests of the manager with that of the owner than stock incentives (Jensen and Murphy, 1990).

Finally, while the short-term orientation of annual bonus plans may not be consistent with the longer decision horizons desired in Prospector managers, the efficiency-oriented strategies pursued by Defenders are more amenable to a short-term evaluation. As discussed earlier, short-term performance is a more unambiguous indicator of managerial effort among Defenders than among Prospectors; in the latter case, managers already face high risk due to the outcome uncertainty associated with their strategy and annual bonus plans may further penalize them for unforeseen short-term problems. These arguments lead to the first research hypothesis tested in this paper.

Hypothesis 1: Annual bonus plans will have a stronger positive effect on firm performance among Defenders than among Prospectors.

Long-term performance plans

In contrast to annual bonus plans, long-term performance plans use a longer time period (typically 3–5 years) to evaluate managerial performance. Hence, they are likely to foster a longer decision horizon among managers and lead to the selection of strategies with longer-term pay-offs (Rappaport, 1978; Galbraith and Merrill, 1991).

From the viewpoint of a firm's managers, long-term plans impose less risk upon a firm's managers than short-term plans because managers are less likely to be penalized for short-term fluctuations in performance over which they may have little control. This is particularly relevant for Prospector firms whose strategies are more likely to pay off in the long term than in the short term (Hambrick and Snow, 1989).

In addition, from the viewpoint of the firm's owners, the specific types of managerial actions motivated by long-term plans will depend upon the performance criteria and the form in which the incentive is offered. Where the scope of managerial actions is such that it would be difficult to deconstruct performances into discrete actions or objectives, market-based performance measures (such as market return to shareholders/stock price growth) provide a more holistic evaluation of the firm's performance than accounting measures (Lambert, 1983). Also, market-based measures are more appropriate when the choices made by managers are more likely to yield returns in the longer run because the stock market capitalizes expected future earnings from strategic decisions into the firm's current share price (Bromiley, 1991). Market-based measures are also more likely to promote risk-seeking and are more effective at aligning the interests of managers with those of shareholders in situations where there is scope for self-serving managerial behaviors (Jensen and Meckling, 1976). For example, market-based measures are less amenable to manipulation by managers than accounting measures (Healy, 1985). All these characteristics of market-based measures make them particularly well suited to Prospector strategies because they are more likely to align the interest of the managers with the firm's owners than accounting measures.

In contrast (as discussed earlier for annual bonus plans), long-term performance plans which are linked to accounting criteria may be more suited to a Defender strategy because they are less likely to induce the adoption of riskier strategies, they can be more readily linked to past managerial decisions and can be used to direct managerial attention to specific areas of concern. Market-based measures may promote unnecessary risk-seeking and may not be desirable for a Defender strategy. These arguments lead to the next two research hypotheses:

Hypothesis 2a: Long-term performance plans which use accounting measures as performance criteria will have a stronger positive effect on firm performance among Defenders than among Prospectors.

Hypothesis 2b: Long-term performance plans which use market-based measures as performance criteria will have a stronger positive effect on firm performance among Prospectors than among Defenders.

The form in which long-term incentives are offered, cash vs. stock, also has implications for managerial motivation and control. Where risk-seeking and longer decision horizons are desired, stock incentives are more likely to be appropriate than cash incentives (Lambert and Larcker, 1985; Murphy, 1985) because managers who hold stock are more likely to be interested in maximizing the returns on their stock. Research evidence shows that market value of stock increases as the variability of returns increases and hence, managers who are offered stock-based incentives are more likely to follow strategies that increase the variance of returns on the firm's assets (Black and Scholes, 1973; Raviv, 1985). Stock incentives are also more effective at controlling managers' self-serving behaviors than cash incentives and hence, in situations where the principal is interested in curbing such behaviors, stock incentives are particularly appropriate (Jensen and Meckling, 1976). These characteristics of stock incentives vs. cash incentives lead to the following hypotheses:

Hypothesis 2c: Long-term performance plans which offer cash incentives will have a stronger positive effect on firm performance among Defenders than among Prospectors.

Hypothesis 2d: Long-term performance plans which offer stock incentives will have a stronger positive effect on firm performance among Prospectors than among Defenders.

It is important to note here that Hypothesis 2d is based on the assumption that, from the viewpoint of firm performance in Prospectors, the positive incentive effects of stock-based plans will overcome the disincentive effects of the managerial risk imposed by such plans. While

this assumption is valid in the context of the sample examined in this study, it may not hold in other contexts where managers face higher personal risks (Beatty and Zajac, 1994; Zajac and Westphal, 1994). This issue is further discussed in the concluding section of this paper.

Stock option plans

Stock option plans are similar to stock-based long-term performance plans with one major difference: often they do not specify the time period for evaluation and/or the specific performance criteria. Hence, they offer greater scope for the inclusion of subjective, qualitative factors in the evaluation process as well as the flexibility to use different performance criteria from one period to another. Because the granting of stock options is not linked to any predetermined evaluation period, they can be used to reward managers for both short-term as well as long-term managerial actions. This flexibility and ambiguity associated with stock option plans makes them particularly suited for managers in Prospector firms who face greater risks and may be penalized if only quantitative indices of performance were used (Hambrick and Snow, 1989). As argued by Salter (1973), discretionary, qualitative measures of performance can reinforce risk-taking behaviors by assuring executives that performance will be evaluated more holistically for the purposes of incentive awards. If the only incentive plan for managers in Prospector firms was the long-term performance plan, it could create too much uncertainty and may adversely affect managers' confidence that today's effort will eventually pay off (Hambrick and Snow, 1989). Open-ended stock option plans provide the opportunity to reward managers more frequently without necessarily encouraging a short-term orientation (Long, 1988). Thus, from the viewpoint of the firm's managers, the open-ended evaluation criteria used in stock option plans can serve to reduce the managerial risk inherent in stock-based incentive plans. However, such 'open-ended' plans do not clarify the rules of the game for Defenders and may create unnecessary ambiguity and subjectivity not consistent with the more precise strategic goals emphasized by such firms.

Finally, stock option plans create greater alignment between the interests of the manager and the shareholder and thereby reduce the likelihood

that the manager will pursue strategies which are not in the long-term interests of the firm's owners. According to the 'motivation and incentives hypothesis' (Raviv, 1985), the expectation is that executives who hold stock options will work towards increasing the value of their option grants, and in the process benefit the shareholders of the firm. Since managers have greater discretion in Prospector firms than in Defender firms, the need to align manager-shareholder interests through incentive mechanisms is also more pronounced in the former. Further, stock option programs are also appropriate for Prospectors in another important way, in that they are likely to attract to the firm non-risk-averse individuals who are more likely to pursue the riskier strategies consistent with a Prospector orientation. All these arguments are reflected in the final research hypothesis:

Hypothesis 3: Stock option plans will have a stronger positive effect on firm performance among Prospectors than among Defenders.

METHODS

Sample and time frame

The sample for this study comprised 50 large, investor-owned electric utility firms drawn from a population of 175 investor-owned electric utilities in the United States. The time frame chosen to examine the performance effects of the interactions between firm strategy and incentive plan characteristics was 1988–92 for the following reasons. First, there was a rapid diffusion of incentive plans in the 5 years preceding this time period, i.e., during 1983–87. The rapid adoption of incentive plans during the post-1983 years stemmed, in large part, from significant environmental changes in 1983. First, in June 1983, the Supreme Court upheld the provisions of the Public Utilities Regulatory Policies Act (PURPA) (which was first enacted in 1978 and began the process of deregulation). This ruling was an important signal to firms in this industry that the process of deregulation was irreversible. In response to this ruling, in July 1983, the Resources Consulting Group (RCG) issued recommendations to improve incentive regulation in this industry. In their report the RCG stressed that 'there should be a relationship between com-

pensation and performance quality and that there is a need to compensate management for their effort' (Edison Electric Institute, 1987: 41). The relative absence of incentive plans during the pre-1983 time period and the rapid diffusion of such plans during the subsequent 5 years provided a natural field setting to longitudinally examine the performance effects of incentive plan adoptions. By 1987 the majority of firms in this industry had adopted an incentive plan (Rajagopalan and Finkelstein, 1992) and hence, the post-1987 5-year time period yielded a reasonable sample of adopters and non-adopters across whom performance differences could be assessed. Second, firms' strategic orientations were assessed through a survey questionnaire administered in 1987 and hence, variations in strategic orientations could be readily related to performance differences during the post-1987 time period.

Measures and data sources

The study used survey and archival measures to identify firms' strategic orientations, and archival measures to operationalize control variables, incentive plan characteristics, and firm performance. These measures and data sources are described next.

Strategic orientation

Strategic orientations were primarily assessed through a survey questionnaire administered to senior executives in 175 electric utility firms in November 1987. While survey responses were obtained from 108 firms (i.e., 62% of the population), complete data for the time period used in this study (1988–92) was available only for the 50 largest firms included in this sample. However, no significant differences were found between these 50 firms and the overall questionnaire sample on any of the survey measures discussed next.

Consistent with previous research using the Miles and Snow typology (Snow and Hrebiniak, 1980), the CEO was selected as the target respondent. Every respondent to the survey questionnaire was either the CEO or the senior vice-president responsible for strategic planning and had been with the firm for more than 10 years.

The questionnaire survey used 20 items (measured on 7-point, Likert-type scales) to rep-

resent five different aspects of utility strategy during the 1983–87 time period. These scales were developed through in-depth interviews with senior executives and a review of industry trade journals and company annual reports (e.g., Zajac and Shortell, 1989). To assess the unidimensionality and discriminant validity of the five measures of strategy, the 20 questionnaire items were factor analyzed utilizing the principal components method with varimax rotation (Kim and Mueller, 1978). The five distinct factors corresponding to the five measures of strategy and the 15 individual items which loaded on these factors are provided in the Appendix. A composite measure was obtained for each scale by averaging the individual item raw scores—the Cronbach alpha for each of the five composite measures (also provided in the Appendix) was greater than 0.60, satisfying the requirements for construct reliability (Nunnally, 1967). These composite scores formed the input data for the cluster analysis used to identify the overall strategic orientation of each firm discussed next.

In order to identify firms' strategic orientations a *K*-means clustering algorithm was used (Hartigan, 1975). Following the procedure outlined in Mascarenhas (1989), the number of clusters was specified from 1 to 10 (i.e., up to one-fifth the number of observations). The cubic clustering criterion and pseudo-*F* statistic were noted for each level of clustering and the appropriate number of clusters was identified on the basis of the inflection points in these statistics. Tukey's tests for multiple comparisons of means were then used to examine pairwise differences among the clusters along the five strategy measur-

es. Table 1 describes the three clusters (labeled Prospectors, Defenders, and Reactors) identified through the *K*-means clustering algorithm.

Cluster 1 firms were the most innovative firms in the sample. They scored the highest among all three clusters on market innovation, technological innovation and domain expansion strategies. Hence, the 14 firms in this cluster were called Prospectors. Cluster 2 firms concentrated on market penetration and efficiency-oriented strategies and scored the highest among all three clusters on these two measures. Consistent with the description of such firms in the Miles and Snow typology, the 19 firms in cluster 2 were labeled Defenders. Cluster 3 firms displayed no consistent

pattern in their strategies. These firms scored the lowest on four out of five strategy measures, indicating that they were not even as efficiency-oriented as Prospectors or as innovative as Defenders. This lack of focus appears to be in line with Miles and Snow's (1978) discussion of Reactors as those firms that do not have clear competencies. Accordingly, the 17 firms in this cluster were labeled Reactors.

Interestingly, no Analyzers were found in the sample. In order to qualify as an Analyzer, a firm would have to be more efficient than a Prospector and more innovative than a Defender. None of the firms in the sample exhibited these dual characteristics. The absence of Analyzers could be attributed to the explanation that in a deregulating industry environment (such as electric utilities), firms continue to face significant resource constraints and may be unable to deploy the resources for both internal efficiency and aggressive innovation, the hallmarks of an Analyzer strategy (Ramaswamy, Thomas, and Litschert, 1994).

The clusters derived from perceptual data were further validated through archival data for 1983–87 time period obtained from Moody's Public Utility Manuals. For each firm average values during this time period were obtained for four measures which represented operating efficiency, plant and equipment newness, and extent of diversification. Based on the same clustering procedure described above again three distinct strategic types, consistent with the Prospector, Defender and Reactor strategic orientations, were identified (see Table 2). Further, cluster membership between the perceptual (Table 1) and archival (Table 2) clusters was identical for 47 out of 50 firms. Because the perceptual data provided a richer description of firm strategies than the archival data, perceptual classifications of strategy are used in subsequent analysis.

Finally, because the current study examined performance differences for the 1988–92 period, it was also important to assess if these strategic orientations remained stable over the subsequent 5-year time period. In order to assess this, cluster membership on the four archival measures for the 1988–92 period were compared with cluster membership on the same measures for 1983–87—only three out of 50 firms changed strategic orientations between the two time periods, indicating that the assumption of stability in strategies

Table 1. Strategic orientations: Perceptual data^a

Orientation-defining variables	Type 1 Prospectors (N = 14)	Type 2 Defenders (N = 19)	Type 3 Reactors (N = 17)	F-value	Tukey test ^b
Market penetration	4.30 (0.61)	5.87 (0.52)	4.59 (0.75)	30.21***	2 > 1; 2 > 3
Market innovation	6.21 (0.66)	5.84 (0.76)	5.36 (0.78)	4.65**	1 > 2; 1 > 3; 2 > 3
Technological innovation	4.96 (0.75)	4.90 (0.64)	4.41 (0.53)	3.27*	1 > 3; 2 > 3
Efficiency	5.56 (0.70)	6.33 (0.58)	5.39 (0.74)	10.51***	2 > 1; 2 > 3
Domain expansion	6.17 (0.61)	4.89 (0.82)	4.45 (0.57)	22.24***	1 > 2; 1 > 3

Table 2. Strategic orientations: 1983–87 archival data^a

Orientation-defining variables	Type 1 Prospectors (N = 14)	Type 2 Defenders (N = 20)	Type 3 Reactors (N = 16)	F-value	Tukey test ^b
Operating expense as % of operating revenues	71.35 (7.09)	60.14 (6.58)	72.25 (7.32)	130.71***	1 > 2; 3 > 2
Operating expense per kilowatt hour	4.51 (1.46)	2.65 (1.63)	5.34 (0.99)	28.48***	3 > 1 > 2
Net plant per kilowatt hour	14.87 (7.22)	22.25 (5.54)	18.93 (5.94)	13.35***	2 > 1; 3 > 1
% revenues from electric operations	78.43 (14.49)	93.84 (13.17)	91.89 (17.93)	18.22***	2 > 1; 3 > 1

^aMeans are shown with standard deviations in parentheses.

^bClusters are significantly different at $p < 0.05$. Significance levels: * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$

across the two time periods was a reasonable one. Two dummy variables were created to represent the Prospector and Defender strategic orientations, with Reactors serving as the base case.

Incentive plan characteristics

The information provided in annual corporate proxy statements was used to code incentive plan characteristics for each firm for each of the 5 years (1987–91) as follows:

1. *Annual bonus plan* = 1 if the firm had an annual bonus plan for executives/managers based on the financial performance of the past year and 0 otherwise (consistent with the assumptions made in the theory section 31 of the 35 firms which had adopted an

annual bonus plan by 1991 linked the bonus incentive to accounting measures such as return on equity, return on capital employed and earnings per share; out of the remaining four, three used both accounting and market-based measures; 29 firms offered only cash bonuses, 3 firms offered a combination of cash and stock and only 3 firms offered stock bonuses).

- 2a. *Long-term performance plan—accounting measures* = 1 if the firm had a long-term incentive plan for executives/managers (performance evaluation period for such plans ranged between 3 and 6 years) and used accounting measures such as return on equity, return on capital employed and earnings per share to evaluate performance and 0 otherwise.
- 2b. *Long-term performance plan—market meas-*

- ures = 1 if the firm had a long-term incentive plan and used market measures such as share price growth/appreciation and market return to evaluate performance and 0 otherwise.*
- 2c. *Long-term performance plan—cash incentive = 1 if the firm had a cash-based long-term incentive plan for executives/managers and 0 otherwise.*
- 2d. *Long-term performance plan—stock incentive = 1 if the firm had a stock-based long-term incentive plan (e.g., performance shares, performance units and restricted stock awards) and 0 otherwise.*

There was a very high correlation between the use of cash incentives and accounting measures ($r=0.95$, $p < 0.001$) and the use of stock incentives and market measures ($r=0.92$, $p < 0.001$) in the sample. By 1991, 22 firms had adopted a long-term incentive plan: 11 of these had cash incentive plans and 10 out of these 11 used accounting measures; similarly, 8 out of the 9 firms which offered stock incentives used market-based measures; 2 firms used a combination of cash/stock and accounting/market and were coded in both categories. In view of these high correlations, Measures 2a and 2c were combined into a single measure defined as long-term plan (cash/accounting); Measures 2b and 2d were combined into a single measure defined as long-term plan (stock/market). (Thus, a firm without any long-term plan would score 0 on both long-term plan measures.) Accordingly, the study combines Hypotheses 2a and 2c and Hypotheses 2b and 2d for data analysis.

3. *Stock option plan = 1 if the firm had a stock option plan for executives/managers and 0 otherwise.*

Consistent with the description of stock option plans as discretionary incentive plans in the theory section, none of the stock option plans specified any specific performance criteria or any time period for evaluation of performance; further, in all cases, the timing and size of option grants was solely determined by a compensation committee of the board of directors.

Firm performance

Consistent with the different performance criteria used in the incentive plans described above, firm

performance was operationalized with two different measures—one accounting and the other market-based. Accounting performance was defined as the annual return on capital employed, a measure considered quite appropriate for assessing electric utility financial performance (Edison Electric Institute, 1988). Annual data for this measure for 1988–92 were obtained from Moody's Public Utility Manuals. Accounting measures of performance are often criticized as they are vulnerable to differences in accounting practices and laws. However, these problems were not a significant factor in this industry because uniform reporting practices are enforced by the Federal Energy Regulatory Commission (Russo, 1992). In addition, because this study examined performance over a 5-year time period, short-term fluctuations in accounting measures of performance are likely to be minimized (Gomez-Mejia, 1992). In addition to the return on capital employed measure, two other accounting measures were also obtained: return on total assets (Ramaswamy *et al.*, 1994) and return on stockholders' equity (Gomez-Mejia, 1992). Both return on stockholders' equity ($r=0.71$; $p < 0.001$) and return on total assets ($r=0.83$; $p < 0.001$) were highly correlated with return on capital employed and, further, the results of data analyses held across all three measures. Hence, only return on capital employed is discussed subsequently.

Market-based performance was defined as total market return to shareholders and operationalized as the capital gain (i.e., gain in share price) in a firm's share over a year plus the value of dividends paid during the year, divided by the value of the share at the beginning of the year, all multiplied by 100 (Westphal and Zajac, 1994). Annual data for this measure for 1988–92 were obtained from Standard & Poor's Compustat.

Control variables

A number of control variables were used because they are considered important influences on firm profitability in the electric utility industry. Based on industry publications (e.g., Edison Electric Institute, 1988) and discussions with executives, six controls were identified: firm size, operationalized as the natural logarithm of total assets in 1987 dollars; residential sales as a percentage of total kilowatt hour sales; industrial sales as a percentage of total kilowatt hour sales; percentage

of total electricity purchased from outside sources; and two variables representing regulatory climate.

The first control, firm size, primarily controls for differences in firm profitability due to differences in scale economies across firms of different sizes. Larger utilities are likely to have lower costs per kilowatt energy generated than smaller utilities because fixed costs are spread over larger generation plants. The next two controls, residential sales and industrial sales as a percentage of total sales, capture cost differences that arise from serving customers with different energy profiles. Residential customers, in general, are more costly to serve than industrial customers because they use relatively little electricity. Industrial customers, in contrast, demand more electricity and have a higher utilization, generally resulting in lower cost per kilowatt hour. The fourth control, percentage of electricity purchased, reflects cost savings that may accrue to firms that do not have to build (and maintain) costly power plants to meet peak demand requirements and, instead, utilize cheaper power purchased from other utilities with excess capacity. Data on these four controls were obtained from Moody's Public Utility Manuals and operationalized as continuous variables.

The last control variable, regulatory climate, was operationalized based on the overall ratings of state regulatory commissions provided by Value Line. These ratings reflect an overall assessment of the state commission's policies in a number of areas which impact utility profitability. The major policies include the determination of the rate base (for calculating fair rates of return), investment tax credits, depreciation methods, approval of power facilities, and fuel costs adjustments. Regulatory policies can sometimes preclude a utility from receiving adequate and timely rate relief and, thus, adversely affect its overall return on capital. Based on a comparison of all state utility commissions, the Value Line ratings classify a utility's regulatory climate into one of three categories: 'below average,' 'average,' and 'above average.' Regulatory climate was operationalized through two dummy variables: (1) regulatory climate—above average = 1 if rating was 'above average' and 0 otherwise; (2) regulatory climate—below average = 1 if rating was 'below average' and 0 otherwise. Thus, 'average rating' was the base case.

Data analyses

Research hypotheses were tested through pooled time series cross-sectional regressions. Firm performance, as defined above, was the dependent variable in this analysis and was regressed on firm-specific control variables, strategic orientations, incentive plan characteristics, and the interactions between strategy and incentive plan characteristics in a series of hierarchical regression models. All independent variables and controls were lagged by 1 year (e.g., Westphal and Zajac, 1994), i.e., performance at *time t* was regressed on the vector of predictor variables for *time t-1*. Two regression models were separately estimated for the accounting and market-based performance measures.

While pooled cross-section, time series methods are likely to yield more stable estimates due to the larger sample sizes they make possible, there are several problems that need to be addressed. First, there can be serial correlation in time series data as a result of which significance levels can be inflated. The presence of serial correlation can be assessed through the Durbin-Watson statistic—values close to 2 reflect the relative absence of serial correlation (Kmenta, 1986). Second, contemporaneously correlated errors can produce spurious coefficients if variables move with time. In this sample the total number of firms with incentive plans tended to increase over time and hence, it was important to control for the influence of time in the pooled data (Russo, 1992). This was done by including four dummy variables for the years 1989–92 (1988 was the base year).

RESULTS

Table 3 provides the means, standard deviations and correlations for all study variables for the final sample of 235 observations (15 observations had to be dropped due to incomplete data). The presence of several high intercorrelations between the variables representing strategy-incentive plan interactions and the respective main effects, (for example, the interaction term Defender \times annual bonus plan had a correlation of 0.86 with the variable representing Defender orientation) indicates the appropriateness of using hierarchical regressions to test research hypotheses (Cohen and Cohen, 1983).

Table 3 Means, standard deviations and Pearson correlations^a (*N* = 235)

Variables	Mean	S.D.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
1. Firm size	7.49	0.78	1.00																								
2. Residential sales (%)	35.07	10.85	-0.21	1.00																							
3. Industrial sales (%)	39.16	18.00	0.03	-0.33	1.00																						
4. Electricity purchased (%)	13.40	13.89	0.01	0.20	-0.06	1.00																					
5. Regulatory rating—above ave.	0.10	0.30	-0.14	0.23	-0.18	0.28	1.00																				
6. Regulatory rating—below ave.	0.20	0.40	0.12	-0.15	0.01	0.08	-0.18	1.00																			
7. Year 1 = 1989	0.20	0.32	-0.01	-0.18	0.19	0.01	0.00	0.00	1.00																		
8. Year 2 = 1990	0.20	0.32	0.02	0.11	-0.10	-0.02	0.00	0.00	-0.20	1.00																	
9. Year 3 = 1991	0.20	0.32	0.02	0.13	-0.12	0.00	0.00	0.00	-0.20	-0.20	1.00																
10. Year 4 = 1992	0.20	0.32	0.01	0.11	-0.11	0.02	0.00	0.00	-0.20	-0.20	-0.20	1.00															
11. Prospector orientation	0.25	0.44	0.25	-0.06	-0.02	-0.02	0.12	-0.18	0.00	0.00	0.00	0.00	1.00														
12. Defender orientation	0.35	0.48	0.08	0.01	0.06	0.02	-0.25	0.05	0.00	0.00	0.00	-0.43	1.00														
13. Annual bonus plan (ABP)	0.71	0.45	0.15	0.00	-0.12	0.18	0.07	0.01	-0.05	0.04	0.06	0.06	0.26	0.19	1.00												
14. LTP—cash/acctg (LTP1)	0.19	0.40	0.01	0.03	-0.20	0.26	0.00	0.02	-0.01	0.00	0.06	0.06	-0.17	0.33	0.29	1.00											
15. LTP—stock/mkt (LTP2)	0.26	0.44	0.11	0.09	0.05	-0.09	0.11	-0.17	-0.01	0.00	0.00	0.00	0.32	-0.33	0.17	-0.29	1.00										
16. Stock option plan (SO)	0.30	0.46	0.19	0.09	-0.17	-0.15	0.01	-0.16	-0.07	0.06	0.10	0.10	0.46	-0.22	0.31	0.00	0.20	1.00									
17. Prospector × ABP	0.23	0.42	0.32	-0.09	-0.06	-0.02	0.14	-0.16	0.00	0.00	0.00	0.00	0.84	-0.40	0.35	-0.14	0.25	0.50	1.00								
18. Defender × ABP	0.29	0.45	0.02	0.05	0.02	0.11	-0.22	0.07	-0.02	0.02	0.02	0.02	-0.37	0.86	0.41	0.42	-0.26	-0.14	-0.35	1.00							
19. Prospector × LTP1	0.03	0.14	0.17	0.20	-0.26	0.21	0.43	-0.07	-0.00	0.00	0.00	0.00	0.25	-0.11	0.09	0.30	-0.08	0.09	0.27	-0.09	1.00						
20. Defender × LTP1	0.13	0.33	-0.09	-0.01	-0.16	0.09	-0.13	-0.03	-0.00	0.00	0.00	0.00	-0.23	0.53	0.25	0.78	-0.23	-0.06	-0.21	0.62	-0.05	1.00					
21. Prospector × LTP2	0.14	0.32	0.12	-0.03	0.14	-0.10	0.07	-0.19	-0.00	0.00	0.00	0.00	0.65	-0.28	0.11	-0.19	0.65	0.30	0.54	-0.24	-0.05	-0.15	1.00				
22. Defender × LTP2	0.02	0.14	0.00	0.00	0.22	-0.14	-0.05	-0.08	-0.00	0.00	0.00	0.00	-0.08	0.20	0.09	-0.07	0.25	0.03	-0.08	0.24	-0.02	-0.05	-0.05	1.00			
23. Prospector × SO	0.17	0.37	0.19	-0.05	-0.13	-0.13	0.14	-0.09	-0.03	0.02	0.06	0.06	0.77	-0.33	0.28	-0.14	0.25	0.48	0.58	-0.29	0.17	-0.17	0.50	-0.07	1.00		
24. Defender × SO	0.06	0.23	0.04	0.09	0.01	0.09	-0.08	-0.13	-0.03	-0.01	0.05	0.05	-0.14	0.33	0.16	0.20	-0.07	0.18	-0.13	0.39	-0.04	0.28	-0.10	0.21	-0.11	1.00	
25. Firm performance—ROCE	9.18	3.81	0.12	-0.16	0.04	0.06	0.03	-0.21	0.15	-0.01	-0.12	-0.08	0.37	0.06	0.11	0.12	0.12	0.13	0.04	0.35	0.01	0.02	0.25	-0.13	0.24	-0.00	1.00
26. Firm perf.—market return	8.28	12.47	0.10	-0.13	0.04	0.04	0.07	-0.14	0.36	-0.46	-0.28	0.18	0.19	0.11	0.06	0.11	0.03	0.08	0.09	0.12	-0.04	0.04	0.14	-0.02	0.18	0.03	1.00

^aDue to the pooled nature of the sample, correlations tend to be overstated. Correlations between 0.13 and 0.16 are significant at $p < 0.05$; between 0.17 and 0.24 are significant at $p < 0.01$; equal to or greater than 0.25 are significant at $p < 0.001$.

Research hypotheses specified that the performance effects of an incentive plan would be contingent upon the firm's strategic orientation. If the hypothesized fit relationships are valid, the corresponding interaction terms would be in the hypothesized direction and explain a significant proportion of variance in firm performance after the main effects have been partialled out (e.g., Gomez-Mejia, 1992). Accordingly, eight hierarchical regression models were estimated as follows. Model I, the control variables model, included the six firm-specific control variables and the four dummies for time period. Model II added the two measures corresponding to Prospector and Defender strategic orientations (Reactor strategy served as the base case). Model III added the main effect for annual bonus plan and Model IV added the two interaction terms between the Prospector and Defender strategy measures and annual bonus plan. Model V added the main effects of the two long-term plan measures to Model II; Model VI added the four interaction terms corresponding to the two strategy and two long-term plan variables to Model V. Finally, Models VII and VIII added the main effect for stock option plan and interaction effects between strategy and stock option plans, respectively. Table 4 provides the regressions for the accounting measure of performance (return on capital employed) and Table 5 provides the regressions for the market measure of performance (market return).

Several overall patterns can be noted from the regressions presented in Tables 4 and 5. First, the Durbin-Watson (DW) statistics reported in both tables indicated the absence of autocorrelation for Models II-VIII. The calculated values (provided in Tables 4 and 5) were compared with the lower (d_L) and upper limits (d_U) of the DW statistic for each model and in all cases the calculated DW fell between d_U and $4-d_U$, indicating the absence of autocorrelation (Ostrom, 1988: 34). The DWs for Model I indicated inconclusive evidence of autocorrelation (the calculated DWs fell between d_L and d_U); however, this was not considered material because Model I was only a control variables model and not used to test any hypotheses. Second, firm strategy explained a significant proportion of variance in firm performance after controlling for other firm-specific effects (the incremental R^2 between Models II and I was 13% for return on capital employed

and 9% for market return). Compared to Reactors, both Defenders and Prospectors realized significant improvements in performance and these results held strongly across all seven (Models II-VIII) regression models. Third, none of the coefficients corresponding to the main effects of incentive plans were significant in Models III, V, and VII. Thus, the adoption of an incentive plan, *per se*, did not lead to positive firm performance. The stability of coefficients associated with the main effects for strategy and incentive plans across the different models strengthens the interpretation that the interaction terms were picking up real effects. Fourth, the models which used market return as the dependent variable had much greater explanatory power than the corresponding models which used the accounting measure. Thus, market measures appeared to reflect differences in firm-specific and environmental variables more closely than accounting measures.

Tests of research hypotheses

Hypothesis 1 predicted that annual bonus plans would have a stronger positive effect on firm performance for Defenders than Prospectors. This hypothesis was supported only for the accounting measure of performance—in Model IV (Table 4) the Defender \times annual bonus plan interaction term was positive and significant ($p < 0.05$), while the corresponding interaction term for Prospectors was not significant. However, this result did not hold for the market measure of performance (in Table 5, the interaction Model IV did not add any explanatory power to the main effects Model III).

Hypotheses 2a/2c predicted that long-term incentive plans which offered cash incentives and/or used accounting measures would be more positively associated with firm performance for Defenders than for Prospectors. The coefficients presented in Model VI (Tables 4 and 5) indicated that neither the Defender \times long-term plan (cash/accounting) interaction term nor the Prospector \times long-term plan (cash/accounting) interaction term was significant. Hence, Hypotheses 2a/2c were not supported.

Hypotheses 2b/2d predicted that long-term incentive plans which offered stock incentives and/or used market measures would be more positively associated with firm performance for Prospectors than for Defenders. The correspond-

Table 4. Hierarchical^a regressions: Return on capital employed ($N=235$)

Variables	Model I	Model II	Model III	Model IV	Model V	Model VI	Model VII	Model VIII
Intercept	9.767*** (2.783)	10.580*** (2.628)	10.617*** (2.645)	9.932*** (2.640)	11.582*** (2.611)	10.176*** (2.679)	10.467*** (2.641)	11.999*** (2.629)
Firm size	0.517 (0.306)	0.104 (0.302)	0.103 (0.303)	0.104 (0.305)	0.138 (0.298)	0.094 (0.307)	0.082 (0.306)	0.273 (0.305)
Residential sales (%)	-0.059* (0.025)	-0.054* (0.023)	-0.055* (0.023)	-0.054* (0.023)	-0.062* (0.023)	-0.053* (0.023)	-0.054* (0.024)	-0.059* (0.023)
Industrial sales (%)	-0.011 (0.014)	-0.011 (0.013)	-0.011 (0.013)	-0.011 (0.014)	-0.019 (0.013)	-0.005 (0.014)	-0.011 (0.013)	-0.013 (0.013)
Electricity purchases	0.031 (0.017)	0.032 (0.016)	0.031 (0.016)	0.024 (0.017)	0.047* (0.016)	0.039* (0.016)	0.029 (0.016)	0.032* (0.016)
Regulatory rating—above average	0.339 (0.872)	0.337 (0.837)	0.370 (0.839)	0.354 (0.830)	0.387 (0.818)	0.372 (0.903)	0.364 (0.839)	0.297 (0.836)
Regulatory rating—below average	-2.008*** (0.590)	-1.432** (0.557)	-1.427** (0.559)	-1.580** (0.557)	-1.548** (0.546)	-1.608** (0.545)	-1.453** (0.559)	-1.720** (0.554)
Year 1 (1989)	0.673 (0.717)	0.678 (0.667)	0.679 (0.667)	0.668 (0.669)	0.605 (0.691)	0.654 (0.710)	0.611 (0.714)	0.615 (0.729)
Year 2 (1990)	-0.037 (0.736)	-0.047 (0.680)	-0.049 (0.680)	-0.048 (0.679)	-0.030 (0.701)	-0.039 (0.712)	-0.042 (0.690)	-0.038 (0.710)
Year 3 (1991)	-1.888* (0.638)	-1.968* (0.702)	-1.998* (0.701)	-1.996* (0.700)	-1.990* (0.698)	-1.893* (0.708)	-1.942* (0.671)	-1.787* (0.654)
Year 4 (1992)	-1.562 (0.705)	-1.612* (0.704)	-1.622* (0.704)	-1.623* (0.703)	-1.658 (0.700)	-1.598* (0.709)	-1.641* (0.712)	1.691* (0.725)
Prospector orientation	3.513*** (0.582)	3.551*** (0.637)	3.374*** (0.790)	3.408*** (0.582)	3.901*** (0.811)	3.628*** (0.624)	3.818*** (0.747)	
Defender orientation	1.695** (0.513)	1.724** (0.553)	1.972** (0.556)	2.376*** (0.534)	2.818*** (0.668)	1.678** (0.515)	2.806*** (0.607)	
Annual bonus plan		0.078 (0.543)	0.208 (0.544)					
Prospector × annual bonus plan				1.066 (1.869)				
Defender × annual bonus plan				3.759* (1.559)				
Long-term plan (cash/accounting)					0.988 (1.170)	1.488 (1.179)		
Long-term plan (stock/market)					0.145 (0.538)	1.278 (0.773)		
Prospector × long-term plan (cash/accounting)						0.309 (2.139)		
Defender × long-term plan (cash/accounting)						0.573 (1.654)		
Prospector × long-term plan (stock/market)						2.293* (1.119)		
Defender × long-term plan (stock/market)						-5.307** (1.726)		
Stock option plan						0.284 (0.549)	0.079 (0.542)	
Prospector × stock option plan							2.356** (0.708)	
Defender × stock option plan							-0.402 (0.845)	
<i>F</i> -Value	2.92**	5.87***	5.39***	5.24***	5.31***	5.64***	5.42***	5.65***
Model R^2	0.12	0.25	0.25	0.27	0.25	0.31	0.25	0.29
Incremental ^b R^2	—	0.13***	0.00	0.02*	0.00	0.06**	0.00	0.04**
Durbin-Watson	1.67	1.85	1.85	1.89	1.93	1.93	1.85	1.89

^aUnstandardized coefficients are provided with standard errors in parentheses.^bIncremental R^2 are compared as follows: Model II vs. Model I; Models III, V, and VII vs. Model II; Model IV vs. Model III; Model VI vs. Model V; Model VIII vs. Model VII.Significance levels (two-tailed): * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$

Table 5. Hierarchical^a regressions: Market return ($N = 235$)

Variables	Model I	Model II	Model III	Model IV	Model V	Model VI	Model VII	Model VIII
Intercept	14.693* (7.513)	13.975* (7.106)	14.161* (7.154)	13.735* (7.245)	17.749* (7.076)	18.326* (7.411)	14.509* (7.134)	18.055* (7.139)
Firm size	1.158 (0.826)	0.511 (0.818)	0.508 (0.820)	0.375 (0.838)	0.648 (0.807)	0.666 (0.849)	0.611 (0.826)	1.076 (0.828)
Residential sales (%)	-0.068* (0.034)	-0.063* (0.025)	-0.064* (0.027)	-0.065* (0.029)	-0.064* (0.032)	-0.064* (0.029)	-0.064* (0.029)	-0.064 (0.039)
Industrial sales (%)	-0.059 (0.038)	-0.060 (0.035)	-0.062 (0.036)	-0.070 (0.039)	-0.075 (0.040)	-0.107* (0.042)	-0.057 (0.036)	-0.058 (0.036)
Electricity purchases	-0.021 (0.046)	-0.027 (0.043)	-0.025 (0.044)	-0.029 (0.046)	-0.019 (0.044)	-0.033 (0.046)	-0.020 (0.044)	-0.013 (0.043)
Regulatory rating—above average	3.466 (2.593)	3.483 (2.507)	3.485 (2.269)	3.437 (2.279)	3.176 (2.217)	2.798 (2.499)	3.453 (2.266)	3.397 (2.270)
Regulatory rating—below average	-2.354* (0.894)	-2.265* (0.994)	-2.328* (1.105)	-2.498* (1.167)	-2.487* (1.181)	-2.875* (1.528)	-2.417* (1.215)	-2.274 (1.506)
Year 1 (1989)	7.510*** (1.938)	7.529*** (1.804)	7.557*** (1.810)	7.512*** (1.834)	7.539*** (1.776)	7.567*** (1.785)	7.374*** (1.812)	7.483*** (1.794)
Year 2 (1990)	-12.285*** (1.987)	-12.237*** (1.849)	-12.187*** (1.863)	-12.109*** (1.888)	-12.186*** (1.822)	-12.286*** (1.836)	-12.497*** (1.873)	-12.259*** (1.855)
Year 3 (1991)	-5.530** (1.994)	-5.589** (1.857)	-5.647** (1.873)	-5.288** (1.899)	-5.188** (1.830)	-5.085** (1.845)	-5.272** (1.891)	-5.491** (1.872)
Year 4 (1992)	6.531** (1.986)	6.497*** (1.849)	6.441*** (1.864)	6.901*** (1.890)	7.029*** (1.822)	7.128*** (1.836)	6.822*** (1.885)	6.621*** (1.867)
Prospector orientation	9.008*** (1.576)	9.197*** (1.723)	8.134*** (2.169)	8.884*** (1.576)	8.212*** (2.245)	8.470*** (1.686)	9.365*** (2.028)	
Defender orientation	5.862*** (1.389)	6.012*** (1.495)	5.842*** (1.526)	7.213*** (1.448)	7.979*** (1.845)	5.952*** (1.393)	6.637*** (1.649)	
Annual bonus plan		0.402 (1.468)	0.316 (1.494)					
Prospector × annual bonus plan				1.915 (2.386)				
Defender × annual bonus plan				3.712 (3.155)				
Long-term plan (cash/accounting)					3.292 (3.096)	2.785 (3.115)		
Long-term plan (stock/market)					0.291 (1.459)	0.973 (2.138)		
Prospector × long-term plan (cash/accounting)						3.415 (5.918)		
Defender × long-term plan (cash/accounting)						-3.683 (3.766)		
Prospector × long-term plan (stock/market)						5.741*** (1.623)		
Defender × long-term plan (stock/market)						1.661 (3.781)		
Stock option plan							1.338 (1.485)	1.837 (1.472)
Prospector × stock option plan								5.545** (1.922)
Defender × stock option plan								-1.826 (2.294)
<i>F</i> -Value	14.99***	17.39***	15.99***	13.48***	14.83***	15.18***	16.10***	14.99***
Model <i>R</i> ²	0.40	0.49	0.49	0.49	0.49	0.52	0.49	0.52
Incremental ^b <i>R</i> ²	—	0.09***	0.00	0.00	0.00	0.03**	0.00	0.03**
Durbin-Watson	1.75	1.92	1.92	1.92	2.04	2.04	1.92	1.92

^aUnstandardized coefficients are provided with standard errors in parentheses.^bIncremental *R*² are compared as follows: Model II vs. Model I; Models III, V and VII vs. Model II; Model IV vs. Model III; Model VI vs. Model V; Model VIII vs. Model VII.Significance levels (two-tailed): **p* < 0.05; ***p* < 0.01; ****p* < 0.001

ing interaction terms in Model VI provide strong support for these hypotheses. The interaction term *Prospector* \times long-term plan (stock/market) was positive and significant for return on capital employed ($p < 0.05$) as well as market return ($p < 0.001$). In addition, the corresponding interaction term for *Defenders* was negative and significant ($p < 0.01$) for return on capital employed, indicating that stock-based long-term plans had a negative effect on accounting measures of performance for *Defenders*. Overall, these results provide strong support for Hypotheses 2b/2d.

Hypothesis 3 predicted that stock option plans would be associated with better performance among *Prospectors* than among *Defenders*. The regression results reported in Model VIII provide strong support for this hypothesis for both measures of firm performance. The *Prospector* \times stock option plan interaction was positively associated with return on capital employed ($p < 0.01$) as well as market return ($p < 0.01$) but the corresponding interaction terms for *Defenders* were not significant for both performance measures.

DISCUSSION AND CONCLUSION

Research implications

This paper integrated arguments from managerial discretion and agency theories to identify the performance implications of the fit between a firm's strategy and incentive plan characteristics. Overall, the results of this study support the theoretical argument that firms benefit from the adoption of incentive plans when the underlying characteristics of the incentive plan match the managerial motivation and control requirements posed by the firm's strategic context (Chakravarthy and Zajac, 1984; Rappaport, 1978).

The empirical results of this study indicate that short-term, low-risk (cash) incentives with quantitative performance criteria are likely to be beneficial when the strategic context offers limited scope for deviating from past actions and minimizes the scope for self-serving managerial behaviors as is typical of *Defender* firms. In contrast, long-term, riskier forms of incentives which utilize more holistic (market-based) performance criteria to evaluate managerial performance yield positive performance effects when the strategic context confers a high degree of discre-

tion upon its managers as in the case of *Prospector* firms. Such incentive plans appear to alleviate the problem of lack of congruence between managerial and firm interests in high-discretion strategic contexts. In addition, *Prospector* firms are also benefited by more open-ended stock option plans which provide the flexibility of combining short-term and long-term, qualitative and quantitative performance criteria. It appears that such plans combine the benefits of achieving congruence between the interests of the firm and its managers without shifting all the risk to the managers. Overall, these are significant results because they shed light on a perplexing problem in executive compensation research, namely, the inconclusive findings on the pay–performance relationship (Gomez-Mejia, 1994). It appears that the pay–performance relationship may be contingent upon a firm's strategy, i.e., outcome-based incentive plans result in superior performance only if they match the firm's strategy.

From a broader theoretical perspective, however, the positive performance effects found for stock-based incentive plans among *Prospector* firms need to be interpreted with some caution. Similar positive performance effects may not be realized in riskier contexts because of managers' unwillingness to bear the risk associated with such plans (Beatty and Zajac, 1994). It is likely that the trade-off between incentive alignment and managerial risk-bearing did not pose a major problem in the current study because of the nature of the sample. First, managers do not bear as much risk in large, established firms (such as electric utilities) as they do in smaller, less stable firms (Beatty and Zajac, 1994). Smaller and less stable firms than those examined in this study may be more sensitive to managerial risk aversion, and in such samples the disadvantages associated with managerial risk-bearing may overwhelm the advantages accruing from incentive alignment. Second, managers may have been more willing to accept risk-bearing incentive plans in electric utility firms because the magnitude of their existing equity positions was very low. On an average, managerial shareholdings in the current sample during the 1988–92 period was only 1.5 percent; in contrast, managers in Beatty and Zajac's sample of riskier initial public offering (IPO) firms held an average of 55 percent of firm equity. This difference in managerial profiles may also explain why Beatty and Zajac

(1994) found a negative relationship between firm risk and the utilization of stock-based incentives. This issue is further discussed under study limitations and directions for future research.

In addition to those discussed above, several other findings of this study have interesting implications as well. First, the positive performance effect of annual bonus plans for Defenders was limited to the accounting measure of performance and did not extend to the market-based measure. Because annual bonus plans tend to use accounting rather than market measures, it appears that managers do tend to focus on the measures that they are evaluated upon (Healy, 1985); however, when they focus on short-term accounting measures they may not be maximizing long-term returns to the shareholder (Rappaport, 1978).

Second, the hypotheses predicting positive performance effects among Defenders who adopted long-term cash/accounting incentives were not supported. Failure to find the hypothesized effects could be explained as follows. Long-term (cash/accounting) performance plans were identical to annual bonus plans except for the evaluation time period. In general, Defender firms tended to have both types of incentive plans (Table 3 shows a correlation of 0.62 between the Defender \times annual bonus plan and Defender \times long-term plan (cash/accounting) interaction terms) and used similar criteria for both types of plans (such as return on equity, return on capital, and earnings per share, etc.). Hence, managers might have failed to perceive the distinction between these two types of plans. While several firms specified an annual limit to the amount of bonus (as a percentage of salary) that could be awarded to managers, they did not distinguish such limits in terms of annual vs. long-term bonuses—the actual payments reported in proxy statements also, in most cases, did not separate the annual and long-term bonus awards. In the absence of more specific distinguishing characteristics, it seems reasonable to assume that there might have been redundancy between annual and long-term bonus plans. At the very least, firms might have to do a better job of distinguishing short-term and long-term plans in terms of the types of performance criteria used. For example, while short-term plans could be tied to efficiency measures such as cost per unit of power generated, long-term plans could use overall financial indicators such as return on investment.

Two other findings of this study (although not *a priori* hypothesized) also merit discussion. First, the strong effects found for strategic orientation, for both accounting as well as market indicators of firm performance, are consistent with the 'strategic choice' view of organizational adaptation (Child, 1972) even in semiregulated environments such as electric utilities. The strong relationships between strategic orientations and performance found in this study are consistent with similar effects found in other rapidly changing environments such as domestic airlines (Ramaswamy *et al.*, 1994) and higher education (Zajac and Kraatz, 1993).

Second, in contrast to the strong effects found for firms' strategic orientations, the findings indicate that, after controlling for strategy, the adoption of incentive plans has little direct influence on firm performance. This finding is contrary to certain studies in the executive compensation literature that have found significant performance effects following incentive plan adoptions (e.g., Brickley *et al.*, 1985; Larcker, 1983; Waegelein, 1988). This contradiction may be partly explained by three characteristics of the present study which distinguish it from prior examinations of incentive plan–performance effects. First, unlike previous studies which only examined the immediate market reaction to the adoption of an incentive plan, the current study included several years of post-adoption performance data. Second, unlike prior studies, variations in firm strategy were explicitly controlled for in the present study. Third, while this study used a sample of firms which continue to face regulatory constraints, performance effects of incentive plans may be more pronounced in more competitive settings.

The lack of direct effects for incentive plans and the presence of several strong strategy–incentive plan interaction effects indicate that the major contribution of an incentive plan might be its ability to enhance the implementation success of a chosen strategy. Firms that attempt to influence managerial choices by changing incentive mechanisms alone may very well be disappointed. This is likely to be especially true of firms which are moving from a highly regulated environment to a less regulated one in that the culture of risk aversion developed in the former context cannot be changed by merely manipulating the compensation systems. Nevertheless, more studies which examine the incentive plan–performance relationship longi-

tudinally and in different contexts are required before we can reach any generalizable conclusions on the pay–performance relationships.

Limitations and directions for future research

In conclusion, there are several limitations and directions for future research that should be noted.

First, the research hypotheses developed in this paper and the research sample used to test these hypotheses emphasize the incentive-aligning properties of compensation plans more than the risk-bearing implications of such plans from a managerial perspective. The relatively low personal risk faced by electric utility managers meant that the incentive-aligning properties of compensation plans could be tested more directly without being confounded by managerial risk-bearing concerns. However, this also limited the extent to which the study could examine the trade-off between incentive alignment and managerial risk-bearing. This limitation can be addressed in future studies which utilize samples offering more variation on the managerial risk dimension.

Second, although studying a single industry enabled a richer examination of the environmental context and minimized extraneous influences on performance, external validity may be limited. The electric utility industry is still subject to more regulation than most industries and allowable rates of return are limited by the regulatory commission overseeing each utility. Hence, future research needs to examine the relationships between firm strategy, incentive plans, and performance in more competitive environments.

Third, consistent with the theoretical focus adopted in this paper and the relative recency of incentive plan adoptions in this industry, the study did not examine if there were differences in the performance effects across early vs. late adopters. However, institutional theory (e.g., Westphal and Zajac, 1994) would suggest that performance effects are likely to be more pronounced among early adopters because such firms adopt incentive plans for efficiency reasons whereas late adopters do so to be fashionable. Such differences can be examined more meaningfully in other contexts where incentive plans have been in existence for longer time periods.

Fourth, given that the strategic orientations examined were limited to Prospectors, Defenders

and Reactors, the study could not offer any insights with respect to the fourth strategy type in the Miles and Snow typology, namely, Analyzers. Future research needs to examine more competitive environments where there is a greater likelihood of finding firms pursuing Analyzer-type strategies.

Fifth, compared to past research, this study operationalized incentive plan characteristics more comprehensively in terms of the form of incentive, the evaluation period, and performance criteria. However, the findings were constrained by the actual incentive plans found in the sample and the data source used to identify plan characteristics. For example, study hypotheses relating to long-term plan characteristics could not be fully tested because of the restricted variety of long-term plans found in the sample. Also, based on the incentive plan descriptions found in proxy statements, only dichotomous classifications could be made, preventing a more fine-tuned classification of incentive plan characteristics. Future studies which attempt to combine the descriptions found in proxy statements with those obtained through survey questionnaires (e.g., Gomez-Mejia, 1992) can provide a more complete analysis of the differences between different types of incentive plans.

In conclusion, this study demonstrates that the relationship between firm performance and incentive systems is both, theoretically and empirically, a complex phenomenon. While this study focused on firm strategy, future research needs to examine other firm-specific and managerial contingencies which influence the performance effects of incentive systems.

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APPENDIX: QUESTIONNAIRE MEASURES OF STRATEGIC ORIENTATION

Respondents to the survey questionnaire administered in November 1987 indicated the extent to which their firm, relative to other electric utilities, emphasized each of the following items in its strategies during the post-deregulation period. Each respondent circled one number on a 7-point

scale, where 1 represented ‘least emphasized’ and 7 represented ‘most emphasized.’

I. Market penetration strategies (Cronbach alpha = 0.69)

1. Development of load management programs to alter patterns/levels of consumption
2. Capacity or bulk power sales to other utilities
3. Advertising and promotion to influence the patterns and/or level of demand for power sold by your firm

II. Market innovation strategies (Cronbach alpha = 0.71)

1. Market segmentation and target pricing
2. Developing competitive electric rates such as off-peak incentive rates, time-of-use rates, and interruptible rate schemes

III. Technological innovation strategies (Cronbach alpha = 0.74)

1. Research and development programs for renewable sources of power

2. Automation of transmission and/or distribution systems
3. Development of customer interface/end-use technologies such as automated load management systems

IV. Efficiency-oriented strategies (Cronbach alpha = 0.83)

1. Reduction of operating costs
2. Reduction of fixed costs
3. Improvements in generating plant efficiency
4. Improvements in overall productivity and efficiency

V. Domain expansion strategies (Cronbach alpha = 0.83)

1. Increasing the scope of electric operations through purchases of power systems/properties of other utilities
2. Increasing the scope of electric operations through acquisitions of/mergers with other electric utilities
3. Building power sales in geographic locations other than your service territory.