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RESEARCH NOTES AND COMMUNICATIONS

BANK PERFORMANCE AND EXECUTIVE COMPENSATION: A MANAGERIAL DISCRETION PERSPECTIVE

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This study investigates how the relationship between bank performance and executive compensation is affected by the degree of an executive's managerial discretion. Managerial discretion is captured by two industry-specific attributes: a bank's strategic domain, and its regulatory environment. Executive compensation is found to be more related to bank performance in a context of high managerial discretion than in a context of low managerial discretion. © 1997 by John Wiley & Sons, Ltd.

In recent years, the relationship between firm performance and executive compensation has increasingly come under the scrutiny of stockholders, analysts and regulatory agencies, such as the Securities and Exchange Commission (SEC). While performance-based executive compensation is prescribed by agency theory (Jensen and Murphy, 1990) as well as by strategic management considerations (Balkin and Gomez-Mejia, 1987; Zajac, 1990), empirical evidence justifying it is weak at best (see Pavlik, Scott, and Tiessen, 1994, for a review).

Key words: CEO compensation; managerial discretion; commercial banking; firm performance

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MANAGERIAL DISCRETION AND EXECUTIVE COMPENSATION

Managerial discretion, i.e., the decision-making latitude held by executives, may provide some insights into the determination of their compensation. Managerial discretion can be characterized by four attributes of a firm's strategic orientation and environmental uncertainty: (1) the range of options available to executives; (2) the programmability of their behavior; (3) the ambiguity of the relationship between cause and effect; and (4) uncertainty surrounding outcome. Since each attribute affects how difficult it is for directors to monitor, evaluate, and reward executive decisions, it is posited that managerial discretion moderates the relation between firm performance and executive compensation (Rajagopalan and Finkelstein, 1992; Hambrick and Finkelstein, 1987).

For instance, a firm with an aggressive diversification strategy and whose environment is complex and rapidly changing is expected to provide

its executives with a high level of managerial discretion, since (1) their decision-making has few constraints, (2) their behavior and decisions are difficult to predetermine, (3) the impact of their actions is not easily observable, and (4) their firm's overall performance is volatile and hard to predict. It is thus expected that performance-based compensation plans (e.g., bonus and stock options) will be implemented in such an environment. These plans minimize monitoring costs incurred by directors, and ensure that executives will not take advantage of their managerial discretion to shirk their duty towards a firm's shareholders (Banker, Datar, and Maindiratta, 1988). In contrast, a firm whose executives have low managerial discretion is expected to favor behavior-based compensation plans (e.g., salary), since both executive decisions and their outcomes are easily predicted, observed, understood, and controlled by directors. Therefore, managerial risk-bearing and its accompanying retribution through performance-based incentives are not a requirement for motivating executives (Walsh and Seward, 1990). This suggests the following hypothesis:

> *Hypothesis 1: The level of managerial discretion moderates the relationship between firm performance and executive compensation: executive compensation is more contingent upon firm performance in situations of high managerial discretion than in situations of low managerial discretion.*

A single-industry investigation: U.S. commercial banking

Prior research indicates that there exist important interindustry structural differences in executive compensation (Balkin and Gomez-Mejia, 1987; Finkelstein and Hambrick, 1988, 1989; Fisher and Govindarajan, 1992; O'Reilly, Main, and Crystal, 1988). In that context, while it may hinder out-of-sample inferences, a single-industry design has two key advantages (Raviv, 1985): (1) it brings together firms with common contextual characteristics, thus allowing more reliable interfirm comparisons to be made from financial statements; (2) it improves the degree to which the composition of executive compensation is explained by firm performance indicators.

The U.S. commercial banking industry is an appropriate setting for investigating the impact of managerial discretion on the relationship between firm performance and executive compensation. First, U.S. commercial banks (hereafter called banks) meet the economic criteria for being regarded as an industry, since they mostly offer a single product—money—and share common and clearly identified economic, accounting, and regulatory environments. Second, banking provides a large sample of firms with economically relevant, publicly available data, namely, over 200 banks with $2 trillion in assets (78% of the bank industry's total). Third, the banking literature identifies key performance measures that can be used to evaluate and compensate bank executives.

Managerial discretion in the commercial banking industry

Hambrick and Finkelstein (1987) and Rajagopalan and Prescott (1990) identify organizational and environmental characteristics as key forces influencing managerial discretion. Moreover, findings from empirical studies show that the relationship between firm performance and executive compensation is moderated by many organizational and environmental characteristics that may proxy for managerial discretion, such as the nature of a firm's strategic domain (Clinch and Magliolo, 1993; Ely, 1991; Lambert and Larcker, 1987; Rajagopalan and Prescott, 1990; Sloan, 1993), the extent of its diversification and complexity (Murthy and Slater, 1975; Napier and Smith, 1987; Lambert and Larcker, 1987), and its regulatory environment (Hambrick and Finkelstein, 1987; Smith and Watts, 1992). Consequently, a bank's strategic domain and its regulatory environment can thus be viewed as having a strong influence on its executives' mangerial discretion.

Strategic domain of banks

A bank's strategic domain is identifiable by its service orientation, which encompasses two dimensions: *markets* and *geography* (Baughn, Storrs, and Walker, 1988). The first dimension reflects whether a bank's customer market is *wholesale* or *retail*. Wholesale banking involves inherently complex decision-making, since it necessitates meeting corporate client-specific

needs with a wide range of customized services that require high-level analytical skills: e.g., project financing, loan syndication, or currency trading (e.g., Bennett, 1989). In contrast, retail banking involves highly structured tasks and small-scale transactions, such as consumer and mortgage lending or the management of branch operations. Thus, wholesale banking executives can be deemed to exercise more discretion in their decision-making than do retail banking executives.

The second dimension of a bank's strategic domain is the geographical span of its activities, with *international* banks tending to serve a broader range of clients than *domestic* banks. International banking executives have greater managerial discretion than domestic banking executives, given that: (1) an international focus opens up strategic considerations about the geographical extent of a bank's operations; (2) management of a diversified international bank encompasses additional and complex political considerations that are absent in a domestic context. However, among domestic banks, super-regionals operate in areas covering many states, and must make use of regulatory loopholes or existing reciprocity arrangements between states to increase their strategic flexibility. Managerial discretion exercised by super-regional bank executives is thus expected to be greater than that available to executives of banks that are strictly local.

In summary, executives in wholesale, international, and/or super-regional banks are expected to exercise more managerial discretion than executives in retail, domestic, and/or local banks, with their compensation being more contingent upon bank performance. This expectation is consistent with prior work posting that firm diversification and international exposure increase managerial discretion (Finkelstein and Hambrick, 1989).

Regulatory environment of banks

A bank's environment is also determined by two sets of state regulations. First, states apply varying degrees of restrictions to a bank's freedom in opening branches. For example, the states of Texas and Illinois limit a bank to one branch, while Louisiana limits a bank's branches to within a specific region. Second, according to a state's takeover regulations, a bank is either free or restricted in its ability to take over other banks: some states restrict the takeover of a bank by another bank, while other states permit multibank holding companies. Thus, a regulation-free environment allows bank executives to consider a broader range of development strategies, e.g., the expansion of the branch network or the acquisition of competitors, than would a regulated enviroment. Accordingly, and consistent with prior work, it is expected that a regulation-free environment provides bank executives with more managerial discretion than a regulated environment, with their compensation hinging on their bank's bank performance (Finkelstein and Hambrick, 1988; Rajagopalan and Finkelstein 1992; Pennings and Bussard, 1987).

METHOD

U.S. commercial bank sample

For each year during the 1984–87 period, the largest 300 commercial banks in the United States were identified, based on *Moodys'* and *Business Week* surveys.[1] After excluding: (1) privately held banks for which no compensation data is available (247 bank-years); (2) banks with missing proxy statements (139 bank-years); and (3) banks with incomplete stock options data (40 bank-years), 822 available bank-year observations remain.

Measure of bank executive compensation

Compensation received by chief executive officers (CEOs) is studied, since CEOs are clearly responsible for overall bank performance. Data on CEO compensation were extracted from each bank's annual proxy statements. This study focuses on total compensation—annual salary, short- and long-term bonuses, stock and stock option grants—as the measure that is most reliable and comparable across firms. Stock and stock option

[1] The economic environment of commercial banks remained relatively stable during the 1984–87 period. However, the federal government implemented extensive deregulation measures in 1982 and in 1983. From 1988 onward, a large number of banks disappeared through mergers, takeovers, or liquidations. Furthermore, in 1989, the Bank of International Settlements announced new capitalization regulations, which took effect in 1992. These new regulations modified the interpretability of financial statements and the relevance of some organizational performance indicators.

grants are evaluated using Smith and Zimmerman's (1976) model.[2] Furthermore, compensation is measured as (ln(compensation)), as a means of attenuating potential heteroscedasticity problems (Baker, Jensen, and Murphy, 1988; Murphy, 1986; Sloan, 1993).

Measures of bank performance and bank size

Two measures capture bank performance: (1) return on assets, which is the ratio of net earnings available to common stockholders divided by average annual assets; (2) stock market return, which is the change in year-end stock prices, plus annual dividends, divided by the prior year-end stock price. Both measures are comprehensive, complementary, and have been used extensively in prior executive compensation research (Barro and Barro, 1990; Janakiraman, Lambert, and Larcker, 1992; Keats, 1990; Lubatkin and Shrieves, 1986; Sloan, 1993). Moreover, both measures are deemed relevant for the evaluation and reward of bank executives (Olson, 1988; Sinkey, 1992). In addition, executive compensation has been shown to be closely aligned with firm size. Ln(year-end assets) is used as a control variable for firm size, since it allows the functional form of compensation determination to be better specified (Baker et al., 1988; *Conference Board*, 1980).

Measure of an executive's managerial discretion

Managerial discretion is proxied by a single composite measure inferred from five distinct dimensions, which are captured through binary variables (1 or 0):[3]

1. *Wholesale/retail dimension*: A bank is classified as wholesale (1) when it obtains more than 33 percent of its income from noninterest sources (i.e., fees generated by trust, investment banking, securities trading and other mostly nonretail activities); otherwise, it is considered to be a retail bank (0).
2. *International/domestic dimension*: A bank is deemed to be international (1) if the ratio of foreign deposits to total deposits exceeds 5 percent; otherwise it is deemed to be a domestic bank (0).
3. *Super-regional/local dimension*: A bank is deemed to be super-regional (1) if it is designated as such in *Business Week* Annual Bank Surveys (1984–87); otherwise, it is deemed local (0).
4. *Free/restricted branching dimension*: A restricted branching bank (0) is headquartered in a state which restricts branching; otherwise it is a free-branching bank (1) (Golembe and Holland, 1987).
5. *Free/restricted takeover dimension*: A restricted takeover bank (0) is headquartered in a state which restricts takeovers; otherwise it is a free-takeover bank (1) (Golembe and Holland, 1987).

A single measure of managerial discretion is then computed for each bank by adding up individual scores (1/0) from each respective dimension. The resulting value of the composition variable used for measuring managerial discretion ranges from zero (lowest managerial discretion) to five (highest managerial discretion).

RESULTS

Descriptive analysis

Table 1(a) presents descriptive sample statistics. The decline in profitability in 1987 can be explained by the write-off of real estate, energy and Third World loans by many banks. 1984–87 was also a period of fast asset growth for many banks, a trend that was greatly enhanced by

[2] Smith and Zimmerman's (1976) model provides a lower bound value to restrict stock awards and stock option grants, which is appropriate, given executives' risk and wealth preferences (Hemmer, 1993):

O = Maximum $\{0, P - (X + FV(D,r,T))\cdot(1/(1+r)^T)\}$
O = Value of stock options grant
P = Price of common stock at grant date
X = Exercise price for the stock option
FV = Future value of a stream of dividends (D) at a risk-free discount rate of r
T = Term (expiration) of the option

[3] Strategic domain and geographical span cut-offs are selected in order to effectively discriminate among subgroups while approximating the sample's limit for the top quartile. For instance, J. P. Morgan and Bankers Trust, which does not have retail activities, shows the highest level of noninterest income among sample banks. Inversely, commercial banks with a strong retail orientation exhibit low scores on the measure. The 5 percent criterion used to distinguish international from domestic banks ensures that domestic banks with temporary foreign assets/deposits are not classified as international.

Table 1.
(a) Descriptive statistics: Compensation and firm data (yearly averages)

	1987	1986	1985	1984
Return on assets (%)	0.53	0.75	0.84	0.82
Stock market return (%)	–9.62	13.93	48.24	18.84
Total assets (000,000 $)	10,485	9439	8080	6875
Total CEO compensation (000 $)	618	599	493	426

(b) Cross-correlations among variables

	1985	1986	1987	Return on assets	Stock market return	Ln (assets)	Discretion
CEO compensation	–0.04	0.10	0.07	–0.12	–0.10	0.77	0.44
1985[a]		–0.33	–0.33	0.06	0.45	–0.04	0.04
1986[a]			–0.33	0.03	–0.07	0.08	–0.02
1987[a]				–0.14	–0.41	0.05	–0.12
Return on assets					0.43	–0.25	–0.17
Stock market return						–0.19	0.04
Ln (total assets)							0.53

[a]1 if given year, 0 otherwise

the acquisition of smaller local banks. Table 1(b) shows that none of the cross-correlations among explanatory variables used in the regression analysis can be considered high. Under such conditions, regression coefficients are expected to be the best linear unbiased estimators (Kennedy, 1992: 177).

Pooled regression analysis

Table 2 shows the moderating impact of managerial discretion on the relationship between bank performance and bank CEO compensation using a pooled regression approach (e.g., Gibbons and Murphy, 1990; Finkelstein and Hambrick, 1989), controlling for fixed time effects (Kmenta, 1986: 616). The coefficient for each interaction term (performance measure·managerial discretion) captures the moderating impact of executive managerial discretion. To infer the direct relationship between a performance measure and CEO compensation, the regression coefficient for the performance measures needs to be added to the regression coefficient of the interaction term, the latter being multiplied by the managerial discretion level (see Kmenta, 1986: 508–510, for more details). Recent studies used such interaction regression coefficients to obtain separate estimates on the link between firm performance and executive compensation in different subgroups (Clinch, 1991; Ely, 1991).

The pooled regression has an adjusted R^2 of 61.7 percent ($p \leq 0.001$).[4] In accordance with the hypothesis, an executive's level of managerial discretion positively influences the strength of the relationship between executive compensation and bank performance, with return on assets and stock market return interaction term coefficients being positive. For instance, the coefficient for (return on assets·discretion) implies that the relation between a bank's return on assets and executive compensation increases by 0.084 for each additional level of managerial discretion ($p \leq 0.01$). Therefore, for a bank whose executive has a maximum level of managerial discretion (= 5), the relation between return on assets and executive compensation is: $-0.125 + 0.084 \cdot (5) = 0.295$. Similar inferences can be drawn for stock market return (interaction term coefficient: 0.001; $p \leq 0.05$).

[4] Various diagnostic procedures were performed to assess the validity of the regression. First, at 1.97, the Durbin–Watson statistic did not indicate that residuals were autocorrelated. Second, a plot of residuals revealed that they normally distributed around zero. Finally, variance inflation factor procedures did not suggest the presence of multicollinearity.

Table 2. Pooled regression of the moderating impact of managerial discretion on the relation between bank performance measures and CEO compensation[a]

Explanatory variables	Predicted sign	Coefficient[b]	*t*-test	*p*-value[c]
Intercept		2.581	21.40	0.01
1985		0.031	0.74	0.46
1986		0.131	3.20	0.01
1987		0.185	4.20	0.01
Return on assets		−0.125	−1.64	0.10
Return on assets · Managerial discretion	+	0.084	2.62	0.01
Stock return		−0.001	−0.85	0.40
Stock return · Managerial discretion	+	0.001	1.65	0.05
Ln(assets)		0.411	22.30	0.01
Ln(assets) · Managerial discretion	+	−0.004	−1.10	0.14
Adjusted R^2: 61.7%				
F: 147.65				
N: 822 bank-years				
Durbin–Watson statistic: 1.97				

[a](CEO compensation)$_{it}$ = Ln(CEO compensation)$_{it}$

[b]The relationship between bank performance and CEO compensation is assumed to differ according to the level of managerial discretion. Coefficients are inferred from the following regression:

$$(\text{CEO compensation})_{it} = \beta_0 + \sum_{k=1}^{n=3} \alpha_k (\text{Performance})_{kit} + \sum_{k=1}^{n=3} \gamma_k (\text{Performance})_{kit} \cdot (\text{Managerial discretion})_{it}$$

Here α_k indicates the relationship between bank performance and CEO compensation in a context of no managerial discretion (Discretion = 0), while γ_k indicates how the relationship differs when there is managerial discretion (Discretion = 1, 2, 3, 4, or 5).

i = individual firm;
i = period;
k = bank performance measure (return on assets, stock market return, ln(total assets)).

[c]One-tailed if specific prediction, two-tailed otherwise.

Bank size is positively related to executive compensation (coefficient: 0.411; $p \leq 0.01$), which is consistent with prior research (Baker et al., 1988). However, managerial discretion has no impact on the relation between size and executive compensation ($p \leq 0.14$).[5] All results are corroborated using year-specific regressions.[6]

Additional analysis

Each individual dimension comprising managerial discretion (i.e. international/domestic, wholesale/retail, super-regional/local, free/restricted branching and free/restricted takeover) is found to moderate the relation between bank performance and executive compensation when used in a separate regression, thus providing evidence that is consistent with the study's hypothesis. Regression analyses also suggest that the relationship between supplementary bank performance measures (loan loss provision, net asset

[5] To assess the results' robustness, managerial discretion is introduced into the regression as a distinct main effect variable. Identical inferences can be drawn from this analysis. Managerial discretion itself is found to be positively related to CEO compensation ($p \leq 0.01$).

[6] Assumptions underlying a pooled regression analysis, i.e., that compensation data is independent across years and that the relation between performance and compensation does not vary over time, may not be valid. Thus, the analysis is also performed on an annual basis with four year-specific regressions. Two parametric tests are applied to infer the overall significance of year-specific regression coefficients: the Z1 test (Healy, Kang, and Palepu, 1987) and the Z2 test (Barth and McNichols, 1994). Each annual regression is well specified, with no evidence of autocorrelation, non-normality or heteroscedasticiy. The average adjusted R^2 is 61.0 percent and average individual coefficients are similar to pooled regression coefficients. On average, managerial discretion has a positive impact on the relation between bank performance (as measured by return on assets stock market return) and executive compensation.

yield or overhead coverage ratio) and executive compensation is moderated by managerial discretion. However, regressions containing these supplementary performance measures suffer from multicollinearity problems and do not have incremental explanatory power over regressions containing return on assets.

DISCUSSION AND CONCLUSION

Our findings confirm our hypothesis that the level of managerial discretion held by executives moderates the relationship between firm performance and executive compensation. Indeed, the higher the level of managerial discretion held by executives, the more contingent their compensation is to firm performance measures such as stock market returns and return on assets. More specifically, banks with a broadly defined strategic domain (wholesale, international or super-regional orientation) and no regulations in their operating environment (no branching or takeover state regultions) provide their CEOs with compensation that is more performance-contingent than banks with a limited strategic domain (retail, domestic or local focus) or a restrictive operating environment (branching or takeover regulations).

A single-industry design does possess some inherent limitations (Dess, Ireland, and Pitt, 1990): (1) its results are not necessarily generalizable to other industries; (2) environmental factors may not uniformly affect firms within an industry; (3) industry-level sources of discretion (e.g., monetary policy or federal regulations) are not considered; (4) heterogeneity among firms may cause the 'industry' label to be misleading. However, to the extent that relevant strategic and environmental differences across banks are taken into account, the magnitude of any validity problem should be minimized. Other limitations of the study include the selective nature of the bank performance measures and the operationalization of the managerial discretion concept. However, performance measures used in the study are comprehensive, since they contain most of the information conveyed by other bank-specific performance indicators such as loan loss ratio and net asset yield. Moreover, the use of return on assets, stock market return and total assets is consistent with prior literature (Pavlik et al., 1994). Finally, the composite measure of managerial discretion used in the study is different from the measures recommended by Hambrick and Finkelstein (1987). However, it encompasses key attributes suggested in the banking literature (Olson, 1988).

Results from prior studies show that there is a weak link between firm performance and CEO compensation (Pavlik et al., 1994). Using a corporate finance (agency theory) framework, this weak link is often deemed inefficient and a sign of managerial entrenchment. For example, the adoption by a state of takeover restrictions is posited to lower the accountability of a firm's executives, with compensation that is noncontingent upon firm performance (Karpoff and Rice, 1989) and stock price declines (Marr, 1992) being likely outcomes. In contrast, a managerial discretion framework suggests that the more tenuous link between firm performance and CEO compensation found in regulated environments is a rational response by directors. By precluding the use of some expansion strategies, antitakeover provisions reduce executives' managerial discretion. As a result, directors' monitoring loads become less onerous, and there is less need to implement performance-contingent compensation systems. Thus, the decline in stock prices following the adoption of antitakeover provisions would not be caused by lower executive accountability but by the reduction of a firm's growth potential.

Future research may be conducted in other industries and may consider other moderating variables, such as the degree of executive influence over a firm's board of directors. It may also be worthwhile to consider how managerial discretion influences the selection of firm performance measures that are deemed to reflect executive actions and decisions. Finally, an investigation of the impact of managerial discretion on the determination of compensation received by executives other than the CEO may provide insights into the design of compensation systems within organizations.

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