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# Pay at the executive suite: How do US banks compensate their top management teams?

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**Abstract**

This study examines how a large sample of US banks compensates their top management teams (i.e., the top four to five highest ranking executives in each bank). We observe two tiers of compensation in the executive suite: the Chief Executive Officer (CEO) and the rest of the top management team. CEOs receive not only greater pay in absolute dollar, but are also rewarded more in relation to performance, as manifested in having a larger portion of their pay in performance contingent compensation. Below the CEO, top executives have similar compensation structure and pay to performance elasticities. The results are robust to a significant size effect, and alternate measures of performance. 

*JEL classification:* G21; G34; G14
*Keywords:* Executive compensation; Non-CEO top executives; Pay performance relations

## 1. Introduction

This paper presents evidence on how 166 US banks of various asset values compensated their top management teams (the top four or five top executives in each bank) during the 1993–1996 period. One of our objectives is to extend previous studies on bank executive pay (e.g., Houston and James, 1995; Hubbard and Palia, 1995; Crawford et al., 1995) beyond the Chief Executive Officer (CEO) position. We test

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for significant differences in pay levels and pay structure across the different executive ranks.

The compensation structure of top management teams is an important topic, especially when management decisions are viewed as a multi-person team task rather than an individual's (CEO) sole responsibility. Zingales (2000), for instance, advocates the multi-person team view, pointing out that the new (and future) "dot.com" companies depend critically on the quality and "bond" between their top employees. Even in an old line or "brick and mortar" industry such as banking, a study of the compensations for members of top management is of interest for several reasons. First, the majority of firms still replace their departing CEOs from the ranks of their existing top management team. Different pay structures for top executives among firms may reveal information about these firms' plans for succession. Second, in many instances, the top management team functions as a collective body, much like the more formalized management boards of European and Japanese companies. It is thus the management team and not just the CEO that should bear the bulk of the responsibility for the firm's performance.

Compensation comparisons within top executive teams have not been receiving adequate attention, as most empirical research focused exclusively on the CEO position (see Murphy, 1999, for a review). Notable exceptions are two studies of pay structures among management teams. Murphy (1986) in a study of a broad sample of US corporations in the period 1964–1981 does not find any significant difference in pay to performance sensitivity between CEOs and their lower rank top executives. In a more recent study of a comprehensive sample of Israel firms, Ang et al. (1998) report significant variations in the compensation among top executives as function of the firms' organizational structure, ownership structure, and performance.

In this study, we identify significant inter-rank differences in the structure of compensation and in the pay to performance relations. Using compensation data for the top five executives in 166 different banks, we observe a two-tier pay structure in the executive suite: CEO and the rest. Relative to lower ranking executives: (1) A larger proportion of CEOs compensation comes in the form of option awards and other performance contingent pay; and (2) CEOs pay performance elasticity is also significantly higher. Differences among second-tier executives (executives in the number 2–5 position in the bank) are less clear and are generally statistically insignificant, although sometimes it is possible to identify a "Number 2" heir apparent above the lower rank executives. Our findings offer some stylized facts for future theories to explain.

The paper is organized as follows. Section 2 outlines the research issues. Section 3 describes the data. Section 4 presents the results, and Section 5 concludes.

## 2. Compensation schemes for top executives: Empirical issues

### *2.1. Pay levels*

Economic models customarily explain why CEOs receive higher pay than their subordinate senior executives do as follows: CEOs are more competent or better

qualified, and they have more responsibilities and have a larger impact on firm value. The debate is on the "optimal" magnitude of the pay differential.

Lazear and Rosen (1981) introduce the tournament model. They argue that when the CEO is paid much more than other senior managers are, these second-tier top executives would be highly motivated to perform well. The large pay differential drives them to compete in the management succession tournament in contention to be the next CEO. Thus, large pay differences at the top can improve firm performance. In contrast, O'Reilly et al. (1998) argue that in a tournament pay structure a non-CEO top executive may find it rational to undermine other competing managers' efforts, resulting in poor firm performance. Thus, pay compression at the top may instead be the optimal structure.

The first objective of the study is to document the pay differentials in the executive suite. Hopefully, this will shed some light on the merits of the tournament and pay-equity models, to be discussed below. As far as we are aware, this is the first study to offer such an analysis in the banking sector.

### 2.2. Pay structure

The second and main goal of the study is to describe and compare the structure of compensation for top executives who are in different ranks. Mehran (1995) argues that the form rather than the level of compensation motivates managers to increase firm value, and presents evidence that firm performance is positively related to the percentage of CEOs compensation that is equity based. Thus, pay structure is at least as significant as pay levels. We characterize structure of compensation by the percentage (or, weight) of each compensation component in total pay, and by the pay to performance relations.

The leading extant approach to pay structure in finance is based on agency theory. Agency theory prescribes that CEOs need incentives (i.e., performance contingent pay) in order to align their actions and interests with those of the shareholders. The board of directors, representing the shareholders, is unable to monitor CEOs adequately; hence must substitute performance incentives for imperfect monitoring. Lower rank top managers also need incentives for similar reasons. However, given that they are granted less decision-making discretion and are closely monitored by the CEO, executives in the second tier are predicted to receive lower incentives (in dollar terms). However, the theory does not make prediction that lower rank top executives should have less pay to performance elasticity, since incentives to all top executives at the margin may have to be high and roughly equal to encourage teamwork and mutual monitoring.

Previous empirical compensation studies among banks (e.g., Houston and James, 1995; Hubbard and Palia, 1995; Crawford et al., 1995) examine the pay performance relations only of CEOs but under various banking environments. We extend that analysis to include non-CEO top executives and their form (composition) of compensation. Especially intriguing is the comparison of compensation structures among executives in different ranks. Do lower ranked executives receive less of their pay in

the form of bonuses and option grants? Are pay performance relations weaker for lower rank executives? What are the stylized facts that a theoretical model of pay structure at the executive suite should attempt to explain?

## 3. Data and measures

### *3.1. Data*

The study is based on data extracted from the SNL Executive Compensation Review. This annual report tabulates in detail the compensation of top executives in a large sample of banks. An attractive feature of the SNL data set is the inclusion of a large number of small banks. Previous studies, based on Compustat, CRSP and Forbes Survey data, include only few small banks. Hence, this study also extends the research into an important segment of the banking industry that, due to data unavailability, has not received much attention previously.

We chose to start the sample from the year 1993, as the Senior Executives Compensation's (SEC) new compensation reporting regulation took effect in December 1992. The new regulations, which require greater disclosure, should result in a better quality data set in terms of uniformity, transparency and precision. Under the new regulation, banks are required to provide more information. For example, the number of options granted in each year is now specified with the exact exercise terms. (The earlier practice of some banks was to report only the aggregate number of options and over an average of exercise prices.) Thus, the second virtue of our data set is that it is more recent and probably more accurate than the data used in previous studies on compensation in banks.

To facilitate analysis, we impose certain restrictions on the selection of the sample. A bank must report compensation for at least three top executives in all of the sample years (1993–1996) in order to be included in the sample. Only 194 of the 433 banks included in the 1994 SNL Review (covering 1993) had information for at least three top executives, and 28 of these banks disappeared from the SNL Review by 1996, probably due to mergers and failures. Another reason for omission is that pays of top executives need be reported under the SEC rules only if it exceeds a certain dollar threshold, thus, allow many small banks to exempt from reporting the pay of some of their executives. Having acknowledged our sample's inherent selection bias (against inclusion of failed, merged or very small banks), the sample is still expected to reveal useful information on bank executive compensation in this exploratory analysis.

Our sample consists of 166 executives in each of the three highest paid ranks, 153 executives in the fourth highest paid rank and 127 fifth highest paid executives, for a total of 3,112 executive years. Our sample of 166 banks compares favorably with three previous studies of executive compensation in US banks. Hubbard and Palia (1995) use 147 banks in the period 1981–1990, or a total of 1,202 executive years, Houston and James (1995) examine CEOs in 134 banks during 1980–1990, and Crawford et al. (1995) study CEOs' pay in 124 banks in 1976–1988.

For each bank, we collect the following information on each of its top executives in each of the sample years (1993–1996): (1) annual base salary, (2) annual cash bonus, (3) annual long-term compensation (non-option awards based on multi-year performance goals, incentive plan award, etc.), (4) value of new option grants during the year, estimated by SNL using an approximation of the Black–Scholes model, and (5) annual total compensation. Annual total compensation is usually equal to or slightly higher than the sum of component (1) through (4) above. This is because of small and insignificant amounts of "other compensation" that could not be categorized by SNL as either base salary, bonus, long-term compensation, or option grants.

The compensation data collected have a limitation. They include only the direct compensation paid by the banks to their executives. We do not have data on executives' wealth changes due to their personal holdings of bank stocks and options. The implications of this limitation will be discussed when analyzing the empirical results.

General financial information on each bank is also collected from the SNL Review. These data include: total assets, market value of equity, annual stock returns, annual return on assets (ROA), annual return on equity (ROE), % of non-performing assets (a proxy for bad loans), and equity ratio (equity/total assets). They are used to present a profile of banks in the sample, and as control variables in our econometric analysis to be reported later.

Table 1 presents selected descriptive statistics for these variables. Panel A focuses on the 1993–1996 average financial data of each bank. The mean total assets of the sample banks are \$14.7 billions, the median is \$2.1 billions, and the smallest bank reports an average 1993–1996 total assets of only \$128 millions. The wide variation in size is also reflected in the disparities in equity market values. The average 1993–1996 stock market values range from as low as \$4 million (smallest bank) to \$26.8 billion (largest bank), with a mean and median of \$1.8 billion and \$323 million, respectively. Measures of performance (ROA, ROE, and annualized stock return), and measures of risk (percent of non-performing assets, and leverage) also show considerable variation. Thus, the sample should enable us to examine the effects of bank size and performance over a wide range of parameter values.

Year-by-year average characteristics are shown in Panel B. We can observe average bank assets, average ROA, and average ROE increase monotonically from 1993 to 1996, while average non-performing assets decrease monotonically. The average market value of bank stocks had more than double over the sample period. Overall, the impression is that 1993–1996 was a solid growth period in the banking industry. Analysis of year-by-year median statistics (not shown) yields identical trends and conclusions.

### *3.2. Compensation measures*

To describe the structure of compensation, we calculate the weight of each compensation component as a percentage of total compensation. This methodology is fairly standard – see Murphy (1999). We also control for the influence of bank

Table 1
Descriptive statistics for the sample of 166 US banks

| Characteristic | Mean | Median | S.D. | Minimum | Maximum |
|---|---|---|---|---|---|
| *Panel A: Overall period (1993–1996) characteristics*[a] | | | | | |
| Total assets ($M) | 14,696 | 2,116 | 36,888 | 128 | 251,233 |
| Return on assets – ROA (%) | 1.15 | 1.21 | 0.36 | −0.33 | 2.20 |
| Market value of equity ($M) | 1,822 | 323 | 4,017 | 4 | 26,761 |
| Annual stock return (%) | 21.07 | 19.50 | 9.09 | 0.67 | 50.20 |
| Non-performing assets (%) | 0.91 | 0.58 | 1.17 | 0.02 | 7.62 |
| Return on equity – ROE (%) | 13.15 | 13.55 | 4.33 | −4.02 | 23.00 |
| Equity ratio = equity/assets (%) | 8.56 | 8.34 | 1.58 | 4.14 | 13.79 |
| | 1993 | 1994 | 1995 | 1996 | |
| *Panel B: Year-by-year averages*[b] | | | | | |
| Total assets ($M) | 11,966 | 13,305 | 15,875 | 17,640 | |
| Return on assets – ROA (%) | 1.02 | 1.14 | 1.18 | 1.24 | |
| Market value of equity ($M) | 1,217 | 1,211 | 1,999 | 2,863 | |
| Annual stock return (%) | 14.33 | −0.41 | 40.89 | 29.46 | |
| Non-performing assets (%) | 1.30 | 0.91 | 0.82 | 0.59 | |
| Return on equity – ROE (%) | 12.08 | 13.26 | 13.47 | 13.78 | |
| Equity ratio = equity/assets (%) | 8.50 | 8.41 | 8.76 | 8.84 | |

[a] For each bank, the average 1993–1996 level of each characteristic is computed. Then, the across-banks mean, median, standard deviation, minimum and maximum of these characteristics are calculated and presented.

[b] For each year, the across-banks average of each characteristic is computed and presented.

size on executive compensation by dividing the sample into three equal groups (small, medium and large banks), based on the average total assets of the bank in 1993–1996. While this method of splitting the sample may not be ideal for isolating bank size effects, it avoids the issue of how to specify the appropriate functional form to account for size dependence. Nevertheless, it has been successfully used in previous studies (e.g., Schaefer, 1998; Murphy, 1999); and, as we shall subsequently demonstrate, it is also effective in identifying significant relations in our study as well.

A final measurement is the pay to performance relation. The two customary measures are: pay sensitivity and pay elasticity. Pay sensitivity is defined as dCOMP/dSW, the marginal dollar change in executive compensation (COMP) in response to a dollar change in shareholders wealth (SW, the market value of firm's equity). Pay elasticity is defined as dCOMP/COMP divided by dSW/SW, the marginal percentage change in executive compensation in response to a 1% variation in stock return (or, a 1% change in shareholders wealth).

In this study we choose to focus on pay elasticity. The problem of pay sensitivity is that there is a built-in relation between it and firm size. Pay sensitivity measures the sharing rate between the manager and the firm – see Jensen and Murphy (1990). Obviously, in larger firms this sharing rate has to decline because the risk averse executives, who also are subject to limited personal liability, could only bear only a much smaller fraction of the firm's fluctuation in total value – see Garen (1994). As Hall

and Liebman (1998) pointed out, the total exposure of the manager to firm performance is the pay sensitivity times the change in firm value. Thus, due to difference in dollar market value change alone, a manager in a large firm could conceivably suffer greater personal risk than a manager of a smaller firm, even if both have the same pay to performance sensitivity. Hence, pay sensitivity has to be interpreted with care, and is not easily comparable across executives from different banks.

A more comparable measure is the pay to performance elasticity, the percentage change in compensation for a 1% change in stock value. Pay to performance elasticity does not necessarily vary with size; hence, it avoids the above-mentioned size confounding effect. In fact, Gibbons and Murphy (1992) find that pay to performance elasticities do not vary significantly across firm size. Murphy (1999) acknowledges that the pay elasticity approach produces better "fit", i.e., better explanatory power and more accurate estimates, and Hall and Liebman (1998) highlight the pay elasticity results in their study.

To estimate pay elasticity we regress the average 1993–1996 annual raise in executive *i*'s pay (i.e., the average $\mathrm{Ln}\,\mathrm{TC}_t/\mathrm{TC}_{t-1}$), where $\mathrm{TC}_t$ is the total compensation in year *t*), on the 1993–1996 average annual (continuously compounded) return of the bank's stock. This elasticity measure is calculated for a longer-term horizon than the usual pay elasticity measure of one-year pay raise on one-year stock return regression measure. We prefer this long-term elasticity measure because it would do a better job at capturing any delayed response of compensation to performance and to ex-ante incentive pay.

A final comment is that our pay to performance elasticity measure is the pay elasticity due to direct compensation, including all compensation paid to the executives by the banks. It does not measure executive total wealth elasticity, the percentage change in executive wealth as a result of a 1% change in stock return. Calculating total wealth elasticity requires information on executive wealth and on her or his bank stock holdings, which we could not obtain.

## 4. Empirical results

### *4.1. The variation of executive compensation with executive rank*

Table 2 describes executive compensation for the overall sample of 166 US banks. For each top executive in each sample bank, we compute the average 1993–1996 level of base salary, cash bonuses, long-term compensation, value of options granted, total compensation, and annual raise in total compensation. The executives are then sorted by pay rank in their bank, and interbank summary statistics are calculated. These summary statistics include the mean, median, standard deviation, minimum and maximum values of each pay component for each executive rank.

Table 2 documents a sizable gap in compensation between the CEO, the highest paid executive, and the second highest paid executive, and a much narrower gap between the second highest paid and the rest. The compensation packages of the number 3–5 executives appear to be more similar. An interpretation of this three-tier

Table 2
The structure of Senior Executives' Compensation in US banks, 1993–1996[a]

| | Mean ($) | Median ($) | S.D. ($) | Minimum ($) | Maximum ($) | Mean[b] (%) | Median[b] (%) |
|---|---|---|---|---|---|---|---|
| 1. *Highest paid executive* ($n = 166$) | | | | | | | |
| a. Base salary | 397,331 | 331,310 | 216,361 | 116,166 | 1,297,917 | 49.5 | 50.3 |
| b. Annual bonus | 338,787 | 143,240 | 591,731 | 0 | 3,646,025 | 20.8 | 20.3 |
| c. Long-term compensation[c] | 270,459 | 62,027 | 519,704 | 0 | 3,281,325 | 13.0 | 10.0 |
| d. Value of options granted | 351,874 | 98,239 | 646,793 | 0 | 4,535,292 | 16.2 | 14.5 |
| e. Total compensation | 1,373,614 | 650,917 | 1,728,015 | 188,673 | 9,176,709 | 100[d] | 100 |
| f. Annual raise in total pay (%)[e] | 12.3 | 11.3 | 15.8 | | | | |
| 2. *Second highest paid executive* ($n = 166$) | | | | | | | |
| a. Base salary | 267,705 | 211,688 | 148,344 | 91,620 | 747,917 | 54.4 | 56.5 |
| b. Annual bonus | 194,070 | 81,578 | 354,947 | 0 | 2,657,575 | 19.7 | 19.0 |
| c. Long-term compensation[c] | 138,425 | 31,367 | 347,289 | 0 | 2,716,300 | 11.1 | 7.7 |
| d. Value of options granted | 178,082 | 54,971 | 330,781 | 0 | 2,049,938 | 14.5 | 13.1 |
| e. Total compensation | 780,590 | 401,159 | 1,025,302 | 138,875 | 7,417,574 | 100[d] | 100 |
| f. Annual raise in total pay (%)[e] | 11.8 | 11.7 | 13.8 | | | | |
| 3. *Third highest paid executive* ($n = 166$) | | | | | | | |
| a. Base salary | 217,965 | 174,531 | 123,795 | 77,335 | 772,917 | 56.4 | 59.0 |
| b. Annual bonus | 143,243 | 55,609 | 275,395 | 0 | 2,113,675 | 18.5 | 18.0 |
| c. Long-term compensation[c] | 90,547 | 19,961 | 196,701 | 0 | 1,478,950 | 10.2 | 7.3 |
| d. Value of options granted | 136,254 | 38,197 | 268,859 | 0 | 2,176,302 | 14.6 | 13.3 |
| e. Total compensation | 589,408 | 307,627 | 755,408 | 121,619 | 5,324,253 | 100[d] | 100 |
| f. Annual raise in total pay(%)[e] | 12.0 | 10.1 | 12.5 | | | | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 4. *Fourth highest paid executive* ($n = 153$) | | | | | | | |
| a. Base salary | 195,605 | 162,000 | 109,031 | 73,108 | 772,917 | 57.0 | 59.3 |
| b. Annual bonus | 127,309 | 46,018 | 254,840 | 0 | 1,914,300 | 17.8 | 17.8 |
| c. Long-term compensation[c] | 81,581 | 19,963 | 182,016 | 0 | 1,424,875 | 10.1 | 7.3 |
| d. Value of options granted | 126,477 | 41,446 | 254,191 | 0 | 1,946,094 | 15.1 | 14.3 |
| e. Total compensation | 530,974 | 291,283 | 710,494 | 100,947 | 4,916,197 | 100[d] | 100 |
| f. Annual raise in total pay (%)[e] | 10.0 | 9.4 | 18.8 | | | | |
| 5. *Fifth highest paid executive* ($n = 127$) | | | | | | | |
| a. Base salary | 191,188 | 158,000 | 100,402 | 78,166 | 742,518 | 57.4 | 58.8 |
| b. Annual bonus | 119,720 | 48,632 | 215,533 | 0 | 1,541,475 | 17.7 | 17.8 |
| c. Long-term compensation[c] | 73,015 | 20,337 | 149,792 | 0 | 1,137,200 | 9.8 | 7.0 |
| d. Value of options granted | 130,250 | 41,400 | 296,418 | 0 | 2,622,344 | 15.1 | 13.5 |
| e. Total compensation | 515,730 | 286,170 | 655,175 | 144,006 | 3,977,237 | 100[d] | 100 |
| f. Annual raise in total pay (%)[e] | 11.1 | 9.7 | 14.3 | | | | |

[a] For each bank, we compute the average 1993–1996 level of each pay component, for each of the top five executives. Then, the across-banks means, median, standard deviation, minimum and maximum of this pay component are calculated and presented. Using similar methodology, the last two columns report means and medians of the compensation components as a percentage of base salary. The source of the data is SNL Executive Compensation Review.

[b] Pay component weight in total compensation.

[c] Long-term compensation includes annual cash, stock, or performance unit awards, paid in accordance with multi-year performance goals.

[d] The weights above may not add up to 100 because there exist non-significant amounts of other compensation that could not be categorized as either of the above.

[e] Calculated as the average of the raise in total compensation in 1994 (relative to 1993), in 1995 (relative to 1994), and in 1996 (relative to 1995).

structure in the level of top management compensation is that it may be consistent with the practice of some banks to have a #2 "heir apparent" or even "co-manager" position below the CEO but ahead of the rest of the senior executives.

The structure of the compensation is also broadly consistent with the models in the labor economics literature. For example, the sizable difference between the compensation of the CEO and the compensation of other executives is more likely to motivate non-CEO senior executives to invest greater efforts in their job competing to become the next CEO, as predicted by the tournament model. In addition, the appointment of a designated number two in some banks, and the relative pay equality of executives 3–5 may be part of the design to mitigate the destructive competition and frictions between senior managers that may accompany a pure tournament pay structure.

The observed pay differences by rank persist across all pay components. However, when pay is standardized by total compensation (the last two columns in Table 2), the difference between executive 2 and executives 3–5, is somewhat blurred. This might indicate that while executive 2 receives on average higher pay in dollars, the structure of her or his compensation contract is much closer to those of executives 3–5. In other words, when the form of compensation is analyzed, there appear to be only two tiers: CEO and the rest.

Table 3 tests the two-tier structure of the form of compensation using Analysis of Variance (ANOVA). Because the ANOVA technique is more reliable when all cate-

Table 3
Variations in the form of compensation across executive rank[a]

| | Mean pay component as a % of total compensation | | | |
|---|---|---|---|---|
| | Base | Bonus | Long term | Options |
| Highest paid executive | 48.9 | 20.5 | 13.4 | 16.8[b] |
| Second top executive | 53.5 | 19.7 | 11.6 | 14.9 |
| Third top executive | 55.7 | 18.4 | 10.7 | 14.9 |
| Fourth top executive | 57.0 | 17.9 | 10.0 | 15.1 |
| *F*-test of equal weights across all executives (*P*-value)[c] | 6.2 (0.00) | 1.9 (0.12) | 2.6 (0.05) | 0.9 (0.43) |
| *F*-test of equal weights across executives 2–4 (*P*-value)[c] | 2.1 (0.13) | 1.2 (0.32) | 0.6 (0.57) | 0.0 (0.98) |
| *F*-test for difference between highest paid and second-tier executives (*P*-value)[c] | 14.4 (0.00) | 3.5 (0.06) | 6.8 (0.01) | 2.7 (0.10) |
| *F*-test for difference between executive 2 and executives 3 and 4 (*P*-value)[c] | 3.0 (0.08) | 2.1 (0.15) | 1.1 (0.30) | 0.0 (0.91) |

[a] For each executive in each bank we compute the (across 1993–1996) average weight of base salary, bonuses, long-term performance awards, and options granted in total compensation. Then, we sort by executive rank and average across banks. The sample includes 153 banks for which complete data on all four top executives were available.

[b] The weights in each row may not add up to 100% because there exist trivial amounts of other compensation that could not be categorized as base salary, bonus, long-term awards or option grants.

[c] Calculated using analysis of variance.

gories (all executive ranks) have an equal number of observations, we omit from the analysis executive #5 (because of the numerous missing observations on this executive rank) and 13 banks that did not report a #4 executive. The 153 remaining banks have data on all four top executives, and are the primary research sample in the rest of the study as well. The result is robust to this exclusion.

The ANOVA tests in Table 3 confirm the two-tier structure of the form of compensation. The first *F*-test rejects at the 1% level the null hypothesis that the weight of base salary in total compensation is equal across all executive ranks, and at the 5% level the hypothesis that the weight of long-term compensation is equal across all ranks. The second test focuses on executives 2–4, and cannot reject the hypothesis that the form of compensation, i.e., the weight of each compensation component in total pay, is identical across executives 2–4.

The third and fourth tests in Table 3 sharpen the picture. The third test documents a significant difference in the form of compensation between the CEO and executives 2–4. CEOs receive a higher (lower) proportion of their total pay in the form of performance-contingent pay (base salary). Below the CEO, the form of compensation is similar. The fourth test fails to detect any statistically significant (at the 5% level) form of compensation differences between executive 2 and executives 3 and 4. Similar results and identical conclusions are obtained when the non-parametric Kruskal–Wallis tests are run.

A final observation is that the annual percentage raise of total compensation is similar across all executive ranks – see Table 2. A formal ANOVA test cannot reject the hypothesis that all executives, including the CEO, receive equal percentage raises. This indicates that while the dollar wedge between CEO and next four executives continuously widened over time, the ratio of CEO to next four executives' total pay remained fairly constant. Given the higher performance contingent component of CEO pay, this result would imply that increase in cash pay more or less keep up at the same pace as the increase in the other pay components.

The result of a similar percentage pay raise to all executive ranks lends support to recent literature in labor economics which contends that at the top, firm executives should be rewarded as a team. Main et al. (1993) presented the teamwork view of executive compensation. Our observed approximate equality in the form of compensation among second-tier managers, and the closeness in the observed percentage pay raises may be consistent with compensation policy designed to foster team spirit. The appearance of near equality in percentage pay raise may minimize frictions among second-tier top managers, and might elicit maximal joint effort at the margin.

### *4.2. Size-controlled results*

An important factor in executive compensation design is firm size. We divide the sample into three equal-number-of-observations subsamples: small banks (less than \$1.3 billions in assets), medium banks (between \$1.3 and \$6.2 billions in assets), and large banks (over \$6.2 billions in assets). Table 4 compares the compensation practices of these banks.

Table 4
Variation of compensation by executive rank and bank size[a]

| | Executive rank | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | Top | Second | Third | Fourth | Top | Second | Third | Fourth |
| 1. *Basic salary* | Level (in $) | | | | Weight in total compensation (in %) | | | |
| Small banks | 237,979 | 158,432 | 128,079 | 113,538 | 62.3 | 66.1 | 70.0 | 70.9 |
| Medium banks | 349,857 | 235,699 | 199,464 | 167,935 | 51.3 | 56.6 | 58.7 | 59.0 |
| Large banks | 648,484 | 436,740 | 350,807 | 305,342 | 33.0 | 37.9 | 38.3 | 41.2 |
| ANOVA test (*F*-statistic) | Size effect = Yes (421.3)* | | | | Size effect = Yes (227.8)* | | | |
| | Rank effect = Yes (143.3)* | | | | Rank effect = Yes (10.1)* | | | |
| | Interaction = Yes (13.3)* | | | | Interaction = No (0.2) | | | |
| ANOVA test of second tier, executives 2–4 (*F*-statistic) | Size effect = Yes (302.2)* | | | | Size effect = Yes (185.9)* | | | |
| | Rank effect = Yes (36.2)* | | | | Rank effect = No (2.9) | | | |
| | Interaction = Yes (3.8)* | | | | Interaction = No (0.3) | | | |
| 2. *Annual bonus* | | | | | | | | |
| Small banks | 78,622 | 48,016 | 31,659 | 23,862 | 17.9 | 16.7 | 14.9 | 14.1 |
| Medium banks | 169,416 | 97,694 | 66,351 | 55,309 | 19.1 | 18.2 | 16.0 | 15.8 |
| Large banks | 822,853 | 468,254 | 357,176 | 302,756 | 24.5 | 24.1 | 24.3 | 23.0 |
| ANOVA test (*F*-statistic) | Size effect = Yes (99.6)* | | | | Size effect = Yes (38.1)* | | | |
| | Rank effect = Yes (13.6)* | | | | Rank effect = No (2.5) | | | |
| | Interaction = Yes (5.5)* | | | | Interaction = No (0.3) | | | |
| ANOVA test of second tier, executives 2–4 (*F*-statistic) | Size effect = Yes (76.0)* | | | | Size effect = Yes (32.9)* | | | |
| | Rank effect = Yes (3.4)* | | | | Rank effect = No (1.7) | | | |
| | Interaction = No (1.1) | | | | Interaction = No (0.2) | | | |
| 3. *Long-term compensation* | | | | | | | | |
| Small banks | 42,260 | 23,042 | 12,938 | 12,592 | 9.7 | 7.8 | 6.4 | 6.5 |
| Medium banks | 128,128 | 62,403 | 45,019 | 36,111 | 12.0 | 10.6 | 9.9 | 9.6 |
| Large banks | 699,568 | 361,160 | 234,691 | 196,041 | 18.5 | 16.4 | 15.8 | 14.8 |
| ANOVA test (*F*-statistic) | Size effect = Yes (79.6)* | | | | Size effect = Yes (42.6)* | | | |
| | Rank effect = Yes (14.8)* | | | | Rank effect = Yes (3.0)* | | | |
| | Interaction = Yes (7.5)* | | | | Interaction = No (0.1) | | | |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| ANOVA test of second tier, executives 2–4 (*F*-statistic) | Size effect = Yes (50.0)*<br>Rank effect = Yes (3.4)*<br>Interaction = No (1.8) | | | | Size effect = Yes (34.6)*<br>Rank effect = No (0.7)<br>Interaction = No (0.1) | | | |
| 4. *Options granted* | | | | | | | | |
| Small banks | 47,041 | 25,820 | 18,159 | 18,210 | 9.5 | 9.0 | 8.0 | 8.5 |
| Medium banks | 219,890 | 90,165 | 70,911 | 58,122 | 17.4 | 14.5 | 15.2 | 15.2 |
| Large banks | 862,531 | 451,027 | 346,886 | 303,098 | 23.5 | 21.4 | 21.6 | 20.9 |
| ANOVA test (*F*-statistic) | Size effect = Yes (93.9)*<br>Rank effect = Yes (15.6)*<br>Interaction = Yes (6.3)* | | | | Size effect = Yes (81.6)*<br>Rank effect = No (1.2)<br>Interaction = No (0.2) | | | |
| ANOVA test of second tier, executives 2–4 (*F*-statistic) | Size effect = Yes (84.6)*<br>Rank effect = No (2.5)<br>Interaction = No (1.2) | | | | Size effect = Yes (67.1)*<br>Rank effect = No (0.1)<br>Interaction = No (0.2) | | | |
| 5. *Total compensation basic salary* | | | | | | | | |
| Small banks | 409,398 | 256,542 | 192,178 | 165,911 | | | | |
| Medium banks | 868,891 | 486,886 | 382,620 | 318,728 | | | | |
| Large banks | 3,077,435 | 1,722,352 | 1,291,660 | 1,108,953 | | | | |
| ANOVA test (*F*-statistic) | Size effect = Yes (172.0)*<br>Rank effect = Yes (32.5)*<br>Interaction = Yes (10.9)* | | | | | | | |
| ANOVA test of second tier, executives 2–4 (*F*-statistic) | Size effect = Yes (126.7)*<br>Rank effect = Yes (7.1)*<br>Interaction = No (2.3) | | | | | | | |

[a] For each bank we compute the average 1993–1996 level and weight in total compensation of each pay component for each of the top four executives. Then, across-banks averages are calculated for three bank-size groups: small banks (average 1993–1996 assets of less than $1.3 billion), medium banks (average 1993–1996 assets between $1.3 and $6.2 billion), and large banks (average 1993–1996 assets over $6.2 billion). Each of these size groups includes 51 banks. Analysis of Variance tests are used to examine any bank size and executive rank effects on the level and form of compensation.

[*] Statistical significance at the 5% level.

Table 4 shows that the level of each compensation component is monotonically increasing with bank size. In each case, the dollar amounts are larger for medium (over small) and large (over medium) banks. Similarly, the level of each compensation component increases with executive rank from executive #4 to the CEO, the only exception occurs in small banks where average option grants to the third highest ranking executives were slightly lower than those of the fourth highest ranking executives.

The form of compensation variation in Table 4 is also interesting. The weight of base salary as percentage of total pay was decreasing with bank size. Base salary accounts for 62.3% (33.0%) of CEO compensation in small (large) banks, respectively. For executive #4, base salary comprises 70.9% of total compensation in small banks and 41.2% in large banks. It appears that large banks offer higher performance pay to their executives in both absolute (dollar level) and relative (percentage of total pay) terms.

The differences in the form of compensation across executive rank are more modest. The weight of base salary increases with executive rank in all bank-size groups, while the weight of annual bonus, long-term compensation and option grants declines.

The variations in pay level and pay structure across executive rank and bank size are formally examined using a series of two-way ANOVA tests. For each compensation component we run four tests, two on the level of compensation and two on the form (weight in total compensation). The two tests of the level of compensation are: a test of pay component equality across bank size and executive rank using all executives, and a test of pay component equality across bank size and executive rank using executives 2–4 data only. Similarly, the two tests of the form of compensation differ in their sample: for all executives, and for executives in ranks 2–4 only.

In tests of the level of compensation, summarized in the first four columns of Table 4, we find significant differences among executives across all pay components. For example, ANOVA tests of base salary, summarized beneath the mean base salary statistics, reveal a significant size effect ($F$-statistic of 421.3) and a significant rank effect ($F$-statistic of 143.3) on the level of base salary. Even among second-tier executives (executives 2–4) there are significant cross-rank differences in the level of base salary, bonus, and long-term compensation.

The results on the form of compensation are presented in the last four columns of Table 4. When all executives are considered, in the first set of tests, base salary and long-term compensation as percent of total compensation differ significantly across executive rank. When only executives 2–4 are examined, in the second set of tests, we cannot find any significant differences in the form of compensation. It appears that as far as the structure of compensation is concerned, there are two tiers in the executive suite: CEO and the rest. CEOs receive a significantly higher fraction of their compensation in the form of performance contingent and incentive pays. Looking back at Table 3, none of the findings about the effects of executive rank has changed. Nevertheless, the size control is important because the size effect is present and cannot be ignored.

A significant finding of size effect could lend support to the agency theory perspective. Potential agency problems are more severe in large banks whose operations are more complex and where monitoring is relatively more difficult. Hence, in large banks, much larger incentive pays are required to offset the executives' greater potential gains from agency behaviors. The larger incentive compensation in large banks is also consistent with the ideas below.

(a) There is a political constraint on executive pay (Jensen and Murphy, 1990), as public opinion tends to perceive high pay, especially large cash salary, as unconscionable. Therefore, large banks, which are more likely to have pay exceeding the "politically correct" constraint, rely more on contingent pay vis-à-vis cash salary.
(b) Some small and medium-size banks are owned by their managers. Such owner-managers prefer more cash payments and less contingent pay, because a considerable proportion of their wealth is already tied up to the bank's stock value. Given their high bank stock ownership, the need to better align their objectives through the use of incentives is much lower.

### 4.3. Pay to performance relations

Table 5 examines the pay to performance elasticity and its variation across executive rank. The pay performance elasticity of CEOs total compensation is highest, at 0.65. Executives in ranks 2–4 have estimated pay elasticities of 0.49, 0.37, and 0.40, respectively.

The estimates of pay elasticity in Table 5 are higher than the approximately 0.3 CEO pay elasticity found by Hall and Liebman (1998) in a sample of publicly traded companies. This difference may be due to our more recent sample. Hall and Liebman's sample period is 1980–1994, and ours is 1993–1996. Several studies observe that option grants and other contingent pay increase dramatically in the 1990s – see Murphy (1999, pp. 21–23) for a discussion. Murphy (1999) further reports, in

Table 5
Executive rank effects on the pay performance elasticities[a]

| | Intercept | Coefficient of average stock return | Adjusted $R^2$ |
|---|---|---|---|
| Highest paid executive | 0.002 | 0.65 | 0.087 |
| | (0.034) | (0.19) | |
| Second top executive | 0.027 | 0.49 | 0.061 |
| | (0.034) | (0.19) | |
| Third top executive | 0.055 | 0.37 | 0.039 |
| | (0.030) | (0.16) | |
| Fourth top executive | 0.032 | 0.40 | 0.031 |
| | (0.036) | (0.18) | |

[a] The average 1993–1996 raise in total compensation of executive $i$ is regressed on the average 1993–1996 bank stock return, where $i = 1, \ldots, 4$ indicates executive rank. Sample size is 153 banks. Standard errors, corrected for heteroscedasticty using White's method, are reported in parentheses.

Table 8, a pay elasticity of 0.7 in 1990–1996, for a sample of finance firms included in the S&P index. Thus, our pay elasticity estimates appear consistent with existing evidence.

It may be of interest to analyze the explicit economic implications of Table 5's findings. Based on the fitted relations, a CEO who manages her bank successfully and keeps it consistently in the 75 percentile of bank stock returns (with a 25.6% average yearly stock return) receives about 6% higher annual raises than a less successful CEO who scores consistently in the 25 percentile mark (an average yearly stock return of 15.6%). The more successful CEO receives an average annual raise of 16.2%, about 60% more than the 10.1% average annual raise of her less successful colleague.

On the one hand, the 6.1% raise differential appears small, and supports Jensen and Murphy (1990)'s contention that pay performance relations are weak. On the other hand, the cumulative value of a 6.1% annual differential is non-trivial. Suppose that both CEOs started with the same total compensation, have 10 years left in office, receive the pay raises for each performance quartiles above, and use a discount rate of 10%. Under these parameters, the present value of the successful CEO compensation is 37% more than that of the less successful counterpart. Nevertheless, the figure on the compensation advantage of the successful CEOs might still be severely downward biased for two reasons. One, the unsuccessful CEO is likely to get fired before the end of her term, and two, the future value of the successful CEOs options and stocks would be much higher. Thus, the pay to performance relations could translate to considerable impact on executive wealth.

To test for significant differences in pay elasticity across executive rank, we set up the following multi-variate regression system:

$$\mathrm{RAISE}_{1,j} = a_1 + b_1 \mathrm{RET}_j + e_{1,j}, \tag{1}$$

$$\mathrm{RAISE}_{2,j} = a_2 + b_2 \mathrm{RET}_j + e_{2,j}, \tag{2}$$

$$\mathrm{RAISE}_{3,j} = a_3 + b_3 \mathrm{RET}_j + e_{3,j}, \tag{3}$$

$$\mathrm{RAISE}_{4,j} = a_4 + b_4 \mathrm{RET}_j + e_{4,j}, \tag{4}$$

where $\mathrm{RAISE}_{i,j}$ is the average 1993–1996 annual (continuously compounded) raise in the total compensation of executive $i$ in bank $j$, and $\mathrm{RET}_j$ is the average 1993–1996 annual (continuously compounded) return on the bank stock. Then, we use the seemingly unrelated regressions (SUR) methodology to test the hypothesis that the pay elasticity coefficients are equal across all executive ranks, i.e., that $b_1 = b_2 = b_3 = b_4$. Judge et al. (1988) show (in Chapter 11) that SUR provides more efficient estimators than other least squares methods in the presence of cross-equation parameter restrictions.

We find that the hypothesis of equal pay elasticity across all executive ranks can be rejected at the 10% level. The Chi-square likelihood ratio test statistic for the restriction that $b_1 = b_2 = b_3 = b_4$ is 6.40 ($P$-value of 0.09). In contrast, we cannot find differences in pay elasticity across second-tier executives (executives 2–4). The Chi-

square likelihood ratio test statistic of the restriction that $b_2 = b_3 = b_4$ is 1.79 (*P*-value of 0.4). This evidence further confirms a two-tier structure in performance pay: CEO and the rest. The elasticity of CEOs pay with respect to stock performance appears higher than that of the rest of the executives.

Size adjustments strengthen the statistical significance of the two-tier structure of the pay performance elasticity. The following SUR system is employed:

$$\begin{aligned}\mathrm{RAISE}_{1,j} &= a_1 + b_1\mathrm{RET}_j * \mathrm{LARGE}_j + c_1\mathrm{RET}_j * \mathrm{MEDIUM}_j \\ &\quad + d_1\mathrm{RET}_j * \mathrm{SMALL}_j + e_{1,j}, \qquad (5)\\ \mathrm{RAISE}_{2,j} &= a_2 + b_2\mathrm{RET}_j * \mathrm{LARGE}_j + c_2\mathrm{RET}_j * \mathrm{MEDIUM}_j \\ &\quad + d_2\mathrm{RET}_j * \mathrm{SMALL}_j + e_{2,j}, \qquad (6)\\ \mathrm{RAISE}_{3,j} &= a_3 + b_3\mathrm{RET}_j * \mathrm{LARGE}_j + c_3\mathrm{RET}_j * \mathrm{MEDIUM}_j \\ &\quad + d_3\mathrm{RET}_j * \mathrm{SMALL}_j + e_{3,j}, \qquad (7)\\ \mathrm{RAISE}_{4,j} &= a_4 + b_4\mathrm{RET}_j * \mathrm{LARGE}_j + c_4\mathrm{RET}_j * \mathrm{MEDIUM}_j \\ &\quad + d_4\mathrm{RET}_j * \mathrm{SMALL}_j + e_{4,j}, \qquad (8)\end{aligned}$$

where $\mathrm{RAISE}_{i,j}$ and $\mathrm{RET}_j$ definitions are as before, and $\mathrm{LARGE}_j$, $\mathrm{MEDIUM}_j$, and $\mathrm{SMALL}_j$ are size dummy variables equal to 1 when the average 1993–1996 total assets of bank $j$ are above \$6.2 billions, between \$1.3 and \$6.2 billions, and below \$1.3 billions, respectively.

Results of the size-controlled analysis are reported in Table 6. First, an unrestricted estimation of the system of Eqs. (5)–(8) is performed. It can be observed that for all executive ranks pay elasticity tends to increase with bank size. The size effect is formally tested by imposing the restriction that in the system of Eqs. (5)–(8): $b_1 = c_1 = d_1$, $b_2 = c_2 = d_2$, $b_3 = c_3 = d_3$, and $b_4 = c_4 = d_4$. This restriction allows pay elasticity to vary with executive rank while requiring no differences in pay elasticity across bank size.

The "no size dependence" hypothesis is rejected at the 1% level by the data. Clearly, pay elasticity increases with bank size. This result differs from Gibbons and Murphy (1992)'s finding that in an earlier period pay elasticity is almost invariant across firm size. In addition to our sample having more smaller firms/banks another possible explanation is that in the 1990s large banks increased their performance-based pay (options grants, for example) more than that of small banks. Anyway, the finding that pay-performance elasticity increases with bank size appears consistent with agency theory. The more-complex and less easily monitored large banks offer their top executives a compensation package entailing more generous pay for performance – higher pay performance elasticity.

The second test in Table 6 examines the restrictions implied by the hypothesis that the pay performance elasticity does not vary across executive rank. The test rejects this hypothesis at the 5% level. The statistical significance of the result is stronger than in the corresponding test in Table 5. In Table 5 the equality of pay elasticity across executive rank is rejected at the 10% level only. Apparently, the

Table 6
Executive rank effects on the pay performance elasticities: size-controlled results[a]

| Restrictions | Estimated coefficients ($t$-statistics in parentheses) | | | | | | | | | | | | Chi-square test of the restriction ($P$-value) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | $b_1$ | $b_2$ | $b_3$ | $b_4$ | $c_1$ | $c_2$ | $c_3$ | $c_4$ | $d_1$ | $d_2$ | $d_3$ | $d_4$ | |
| Unrestricted | 0.77 (4.0) | 0.59 (3.5) | 0.59 (3.8) | 0.67 (3.6) | 0.63 (3.5) | 0.48 (3.0) | 0.35 (2.5) | 0.38 (2.2) | 0.59 (3.1) | 0.40 (2.4) | 0.18 (1.2) | 0.18 (1.0) | |
| No difference across bank $b_1 = c_1 = d_1$ $b_2 = c_2 = d_2$ $b_3 = c_3 = d_3$ $b_4 = c_4 = d_4$ | 0.65 (4.0) | 0.49 (3.3) | 0.37 (2.8) | 0.40 (2.5) | 0.65 | 0.49 | 0.37 | 0.40 | 0.65 | 0.49 | 0.37 | 0.40 | 30.28 (0.000) |
| No difference across executive bank $b_1 = b_2 = b_3 = b_4$ $c_1 = c_2 = c_3 = c_4$ $d_1 = d_2 = d_3 = d_4$ | 0.64 (4.6) | 0.64 | 0.64 | 0.64 | 0.44 (3.4) | 0.44 | 0.44 | 0.44 | 0.32 (2.3) | 0.32 | 0.32 | 0.32 | 18.96 (0.03) |
| No difference across second-tier executives $b_2 = b_3 = b_4$ $c_2 = c_3 = c_4$ $d_2 = d_3 = d_4$ | 0.75 (4.1) | 0.60 (4.3) | 0.60 | 0.60 | 0.59 (3.4) | 0.40 (3.0) | 0.40 | 0.40 | 0.53 (2.9) | 0.26 (1.8) | 0.26 | 0.26 | 12.06 (0.06) |

[a] The following seemingly unrelated regressions system is fitted to the data:

$$\mathrm{RAISE}_1, j = a_1 + b_1\mathrm{RET}j * \mathrm{LARGE}j + c_1\mathrm{RET}j * \mathrm{MEDIUM}j + d_1\mathrm{RET}j * \mathrm{SMALL}j + e_1 j,$$

$$\mathrm{RAISE}_2, j = a_2 + b_2\mathrm{RET}j * \mathrm{LARGE}j + c_2\mathrm{RET}j * \mathrm{MEDIUM}j + d_2\mathrm{RET}j * \mathrm{SMALL}j + e_2 j,$$

$$\mathrm{RAISE}_3, j = a_3 + b_3\mathrm{RET}j * \mathrm{LARGE}j + c_3\mathrm{RET}j * \mathrm{MEDIUM}j + d_3\mathrm{RET}j * \mathrm{SMALL}j + e_3 j,$$

$$\mathrm{RAISE}_4, j = a_4 + b_4\mathrm{RET}j * \mathrm{LARGE}j + c_4\mathrm{RET}j * \mathrm{MEDIUM}j + d_4\mathrm{RET}j * \mathrm{SMALL}j + e_4 j,$$

where RAISE$i, j$ is the average annual raise in the total compensation of executive $i$ in bank $j$ over the period 1993–1996 ($i = 1$–4; $j = 1$–153); RET$j$ is the average annual stock return of bank $j$ over 1993–1996; and LARGE$_j$, MEDIUM$_j$, and SMALL$_j$ are size dummy variables equal to 1 when the average 1993–1996 total assets of bank $j$ are above \$ 6.2 billions, between \$ 1.3 and \$ 6.2 billions, and below \$ 1.3 billions, respectively. Then, several restrictions, representing alternative executive rank and bank size effects, are imposed on the system and are examined using the likelihood ratio test (see Gallant and Jorgensen, 1979).

size-control controls for some of the noise, and affords a more powerful test of the hypothesis.

The size-control also increases the power of tests examining the differences in pay elasticity across second-tier executives. The last test in Table 6 finds that the hypothesis of equal pay elasticity across second-tier executives can be rejected at the 10% level. However, the source of this marginally significant difference is most probably the relatively low pay elasticity of executives 3 and 4 in small banks. This suggests an alternative interpretation of the findings: there are indeed only two tiers as far as the structure of pay elasticity is concerned, but small banks do not really have meaningful #3 and #4 positions.

We have also attempted several extensions of the pay performance relations. We add the average 1993–1996 ROA of the bank as an explanatory variable in Eqs. (1)–(4). Lambert and Larcker (1987) advocate the use of accounting returns as a standard for performance pay. In all of the regressions attempted, the coefficient of ROA is statistically insignificant while the coefficient of average stock return remained highly significant. It does not appear that ROA can explain much of the cross-sectional variations in the pay raises received by executives. Accounting returns may still influence executive pay, especially via bonus plans. However, interbank differences in accounting returns cannot explain the cross-sectional differences in executive pay raises.

Further, we add a measure of relative performance to regression (1)–(4). The SNL data report the ROA ranking of each bank relative to a group of comparable "peer" banks. We calculate the 1996 percentile ranking of the bank (in its peer group) minus its 1993 percentile ranking. This difference captures the advance/decline of a bank relative to a controlled group of peer banks. The relative performance approach predicts compensation to be positively related to improved relative performance, i.e., a bank advances in performance ranking relative to comparable firms – see Gibbons and Murphy (1990). Hence, we expect to observe positive coefficients to the "ROA ranking advance" variable that we constructed. In the estimated results, however, the coefficients of the advance variable are statistically insignificant. Thus, we fail to support the relative performance hypothesis. Our results are consistent with Gibbons and Murphy (1990) who cannot find any significant relation between the CEOs compensation and firm performance relative to its industry index.

Finally, we would like to comment that our central conclusions are not likely to be sensitive to or emanate from our sample imperfections. For example, correcting for personal holdings of stocks and options will probably only reinforce our conclusion that CEOs' incentive pay and CEOs' pay performance elasticity are higher than those of lower rank senior executives. This is because CEOs usually own more stocks and options than other executives do. The only possible exception is the conclusion about small bank executives having a less performance sensitive compensation. If small bank CEOs are more likely to be owner-managers, they also have relatively larger personal stock holdings, and may end up with pay performance elasticities that are not lower than those of large bank CEOs. It should, however, be noted that we find that executives 2–4 in small banks also have a lower pay performance

elasticity than their counterparts in large banks, which may be due to the greater ability of small banks' owner managers to personally monitor their immediate subordinates.

## 5. Summary and conclusions

This study examines the compensation practices of 166 US banks using a previously unexplored data set collected from the SNL Executive Compensation Review. These data afford the extension of analysis to compensation of non-CEO top executives, and to compensation in various size banks, including some relatively small banks. In general, substantial variations in the level and mix of compensation are found. The compensation of top bank executives is shown to depend on executive rank, bank size, and bank performance.

More specifically, we observe two tiers of compensation in the executive suite: CEO and the rest. CEOs are paid more, especially in performance-contingent incentive-type payments such as options and awards based on multi-year goal achievements ("long-term" compensation). The weight of base salary in CEOs pay is significantly lower than in other senior managers' pay, and the pay performance elasticity of CEOs pay is significantly higher.

Beyond the CEO, top executives have a similar structure of compensation. That is, the weights (or percentages) of base salary, bonuses, long-term compensation, and option grants, in total compensation do not vary much across second-tier executives (top executives in ranks 2–4). Executives 2–4 also have a similar pay performance elasticity. Sometimes, though, executive 2 has a considerably higher level of compensation than executives 3–5 do. This may reflect the existence of an heir apparent in some banks.

The stylized facts we establish should serve as a basis for a theoretical model of pay structure in the firm and at the executive suite. We notice along the way that some findings are broadly consistent with elements of agency theory and labor economics models. Yet, a formal comprehensive model is as yet to be developed.

An interesting question is how representative are our results with respect to other industries. This question is left for future research. Future work can also explore the heir-apparent position in banks where it exists.

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