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PAYING OUR PRESIDENTS: WHAT DO TRUSTEES VALUE?

by

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I. Introduction

In 1997-98, five private college and university presidents earned more than $500,000 in salaries and benefits. One reporter quipped in a recent story in the *Chronicle of Higher Education*, "If you're a private college president and you are not making at least $300,000 a year, maybe its time to renegotiate your contract".[1]

To many faculty members at private doctoral level, comprehensive and baccalaureate institutions whose average compensation in 1997-98 was $91,972, $64,774 and $64,286, respectively, compensation packages for presidents of these magnitudes seem way out of line.[2] These presidents, however, are the chief executive officers (CEOs) of institutions whose operating budgets sometimes reach well over $1 billion a year. Viewed from this perspective, private college and university presidents are paid considerably less than their CEO counterparts who head similar size for-profit corporations. Nonetheless, just as some have argued that corporate CEOs are "over paid", high compensation levels or compensation increases for some college presidents have recently been well-publicized, criticized and used as examples of waste and inefficiency in higher education.[3]

Surprisingly, very little is known about the compensation structure faced by American college and university presidents. A long literature exists with respect to corporate CEOs that shows that their compensation is often either explicitly or implicitly structured in a way that provides incentives for them to act in their shareholders'

[1] Steven Burd (1999)
[2] American Association of University Professors (1998), table 4.

interests.[4] Studies have found that incentives also appear to exist in the compensation structures of appointed government executives, such as city managers and school superintendents, that "encourage" them to act in their constituents' interests.[5] However, the few studies that have addressed private college and university presidents' compensation have only used cross-section data to explain differences in compensation across institutions.[6] As we shall show, such data do not enable researchers to ascertain if academic presidents' compensation is structured in a way that provides incentives for them to act in the best interests of their institutions' constituents.

A private academic institution's constituents include its students, faculty and alumni. Its constituents also include corporations, private foundations and federal, state and local governments. However, in the end it is the board of trustees of the institutions at which a president is employed that determines his or her compensation and tenure in office. So ultimately our paper is an effort to infer what the trustees of private academic institutions value.

Our study makes use of data from a panel of over 400 private colleges and universities on the salaries and benefits paid to their presidents. These data are reported annually to the Internal Revenue Service on Form 990 by the institutions. The data have been collected by, and reported in, the *Chronicle of Higher Education* for academic years

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[3] For example, the New York State Board of Regents ruled in 1997 that the pay and benefits of Adelphi University's president Peter Diamandopoulos was excessive and then disbanded the Adelphi Board of Trustees for failing to exercise adequate fiduciary responsibility.
[4] See Kevin J. Murphy (1999)
[5] See for example, Gerald Goldstein and Ronald Ehrenberg (1976) and Ronald Ehrenberg, Richard Chaykowski and Randy Ehrenberg (1988).
[6] See for example, Kim Boulanger and Jeffrey Pliskin (1999) and Jeffrey Pfeffer and Jerry Ross (1988)

1992-93 through 1997-98.[7] We use these data through 1996-97 and merge them with data from a number of other sources including the American Association of University Professors, the American Council on Education, *Who s Who in America,* the National Association of College and University Business Officers, the Council on Aid to Education, and the National Science Foundation's CASPAR system. This permits us to estimate salary and compensation level and change equations.

The plan of our paper is as follows. We begin by providing some descriptive statistics on the compensation and mobility of American private college and university presidents, as well as on their personal characteristics. The next section estimates a model of the determinants of presidents' salary and compensation levels. We then exploit the longitudinal nature of our data and present analyses of presidents' salary and compensation changes. A brief concluding section summarizes our finding.

II. Descriptive Statistics

Each year private colleges and universities report the salaries and benefits of their five highest paid employees to the Internal Revenue Service on Form 990. If the president of an institution is not among the five highest paid employees, the institution is also required to report the same information for the president.[8] Starting with the data for academic year 1992-93 (for salary) and 1993-94 (for benefits), the *Chronicle of Higher Education* has collected and published information on private 4-year college and university presidents' compensation for a set of institutions. The set includes those institutions that

[7] Presidents' salary data have been reported since 1992-93, however presidents' benefits data are available only since 1993-94.

[8] This situation arises most often when a medical college is part of a university.

are classified as research, doctoral, comprehensive and liberal arts I by the Carnegie Foundation for the Advancement of Teaching (1994).

At the outset, we must acknowledge that these data are subject to considerable measurement errors. Sometimes institutions fail to report deferred compensation that was "earned" during the year. Sometimes they fail to report the portion of the president's compensation that comes from "related " organizations, such as university foundations. Institutions always exclude any compensation that the president receives from corporate or foundations boards on which he or she sits, even if the board membership is implicitly part of the president's compensation and is arranged by a key trustee or alumnus of the institution. Finally, institutions sometimes under-value or fail to report "perks" that the president receives as part of his or her compensation package. Nonetheless, the data from the form 990 reports are the best private college and university presidents' compensation data that are publicly available.

Table 1 presents data on the mean salaries of 4-year private college and university presidents annually for 1992-93 to 1997-98. Similar data are reported for the sum of salaries and benefits for 1993-94 to 1997-98. The means are reported each year in the aggregate and separately for Carnegie category research, doctoral, comprehensive and liberal arts institutions. Presidents have been excluded from this table if they had salaries less than $40,000 a year, were interim or part-year presidents, or if their salary data were not reported in a year.

The average president's salary was over $185,000 in 1997-98. President's average salaries vary widely across the Carnegie Foundation categories of institutions, however, ranging from a low of almost $160,000 at comprehensive institutions to a high of over

$343,000 at research universities. When reported benefits are added to the presidents' salaries to get a measure of their compensation, average compensation varied from about $187,000 at the comprehensive institutions to over $393,000 at the research universities.

How have the presidents' salaries and benefits changed over time? Panel A of table 2 presents information on the distribution of the president's salary changes during the 1992-93 to 1996-97 period, in the aggregate and by category of institution. Excluded from this table are presidents who began their terms of office after 1992-93, presidents who left their positions prior to 1996-97 and presidents whose institutions were not present in the sample each year.

During the 1992-93 to 1996-97 period, the presidents received an average 25.5 percent increase in salary. The median salary increase was 20.8 percent. Presidents of research universities and liberal arts colleges fared slightly better, on average, than their counterparts at doctoral and comprehensive institutions did. To focus on the average increases, however, is to ignore the variation in the increases that occurred across presidents. Indeed, the 25^{th} to 75^{th} percentile range for presidents' salary increases during the period was about 13 to 33 percent.

Each year, average salary increases for faculty members differ across institutions. Hence, it is natural to ask how the presidents' salary increases varied relative to the changes in the average salaries of the faculty members at their institutions.[9] As panel B of the table indicates, the average salary increase of the presidents exceeded the average

[9] We caution that we truly are comparing apples and oranges here. A president's salary change is the growth of a single individual's earnings over time. The change in the average faculty salary at an institution is determined both by the percentage change in the salary pool that is provided by the institution each year and the change of the distribution of faculty members across ranks and ages during the period.

salary increase of faculty at their institutions by 13.5 percentage points during the period. Presidents of research universities gained less relative to their faculty than did presidents at other categories of institutions. The median differences between the salary increases of presidents and their faculty members' average salary increases are somewhat smaller in the aggregate and in each institutional category. There is considerable variation in this difference across all institutions and across institutions within each institutional category. The 25th to 75th percentile range for this measure across all institutions was 0.8 to 21.0 percentage points. However, as panel B indicates, some president's salaries increased at rates that were slower than the rate of increase of their faculty members' average salaries during the period.

Data on the benefits received by the president's are available starting in 1993-94. In panels C and D of the table we examine how increases in presidents' pay (panel C) and pay plus benefits (panel D) compared to the increases in the average salary of faculty at their institutions during the three-year period 1993-94 to 1996-97. The pattern of results for presidents' pay is very similar to that reported in the previous panel, although the increases are somewhat smaller because we are now using one less year of data. When presidents' pay plus benefits is used, the patterns are again similar.

Our empirical analyses in section IV will address the relationship between salary increases and "institutional performance" for presidents who remain at their position for a four-year period. This may understate the reward president's receive for performance if part of the reward comes in the form of opportunities for the movement to other higher

paying positions.[10] So it is important to understand what the mobility pattern of individuals in the sample actually looks like.

Table 3 summarizes where each president who was in the sample either in 1993-94, 1994-95, 1995-96, or 1996-97 was in the following year. A few institutions that report data in one year do not report it in the next year and we cannot follow their presidents' careers. About 90% of the presidents in the sample each year were at the same institution the next year. In total, only 7 individuals moved to a presidency at another private institution that was in the sample during the four-year period. Finally, between 5 to 12 percent of the presidents in the sample in each year (26 to 48 in number) were not observed in the sample the next year.

Our empirical analyses of presidents' salary and compensation changes in section IV are restricted to those presidents who remained in office through 1996-97, because data on several of the explanatory variables we use in the salary change models were not available for 1997-98 at the time we wrote the paper. One hundred sixteen of the presidents had left the sample by 1996-97. A search of *Who s Who in America* provided biographical information for slightly less than half of them. Information on subsequent activities for all but 2 of the remaining presidents who had left the sample by 1996-97 was obtained from exhaustive searches of the World Wide Web that we conducted and a phone survey of Presidents' offices conducted by Cornell's Computer Assisted Survey Team (CAST) in May 2000.

[10] Ehrenberg, Chaykowski and Ehrenberg (1988) showed that the reward for school superintendents who were "high performers" was most often opportunities for mobility to positions in larger better paying school districts and less often, larger salary increases in their current school district.

The post presidency activities of the presidents who left the sample were varied. Sixty-four were retired or president-emeritus, while 5 were presidents at institutions that were not included in our sample. Nine held administrative positions below the rank of president or faculty positions at other academic institutions, while 7 had returned to the faculty at their own, predominantly liberal arts, institutions. Twenty were employed in the government or nonprofit sectors, primarily as executives or trustees of private foundations; this latter group also included a congressman and an ambassador Finally, 6 were self-employed, often as consultants, or employed in the corporate world and 3 were deceased.

Interestingly, only one individual who was a president in our sample in any year moved to a presidency of a public college or university during the period. Table 4 presents data from an annual survey of the pay of academic administrators conducted by the College and University Personnel Association (CUPA) that sheds some light on why this lack of mobility to the public sector occurred.

We caution that the public and private institutions that respond to the CUPA survey are not a random sample. Hence the reader should not presume that the average salary figures we report below are accurate estimates for the populations of public and private institutions. In addition, we do not have access to the CUPA data at the individual institutional level and are restricted to making comparisons from the data in the way that are reported in the CUPA report. Despite these weaknesses, the CUPA data do permit us to compare public and private presidents' median salaries, along with two measures of the relative size of their institutions.

The top panel of the table indicates that the median size public institution in the CUPA sample in 1999 had an annual operating budget of $50.5 million, while the median size private institution had a budget of $34.8 million. The salaries of the presidents at the median private and public institutions were $132,098 and $176,800, respectively. Thus, although the median private institution had an operating budget that was only .689 times the operating budget of the median public institution, the ratio of the median private president's salary to the median public president's salary was 1.338. The bottom panel of the table presents similar data when the institutions are ranked by enrollment size. It yields the same conclusion; namely that presidents of private institutions get paid considerably more than their counterparts at public institutions even though their counterparts lead substantially larger institutions.[11]

Who are the presidents in our sample? Table 5 presents some background data on their characteristics, as of 1996-97. The typical president in our sample began his or her presidency at the age of 48 and had been in the position for over 8 years. About 15 percent of the presidents were members of the clergy and these clergy-presidents are found most often in comprehensive institutions. About 18 percent of the presidents were females, but the percentage of female presidents at research and doctoral institutions was only 8 percent. Finally one quarter of the presidents held at least one prior presidency before assuming their current position. We were able to identify the institution in which the prior presidency was held for 57 of these individuals. Almost three-quarters of the prior presidencies were at other private, primarily 4-year institutions. The other quarter of prior presidencies were at individual public campuses or statewide public systems. Among

[11] The slight difference in the median salaries in the two panels of the table probably reflects incomplete

the presidents who previously held public presidencies were the presidents of three Ivy League institutions. Each of these three previously had been a president at a Big Ten institution.

III. Analyses of Presidents Salary and Compensation Levels[12]

What might be hypothesized to determine the salary and compensation level of an American private college or university president? On the one hand, we expect that the characteristics of the president will matter, including years in the position, whether the president held a prior presidency, and, if so, the number of years of experience at that position. Presidents who are members of the clergy might be expected to have lower salaries because they are less motivated by market forces and often are presidents of religious affiliated institutions. Holding constant prior experience and tenure in the position, evidence that a president's age or gender influence his or her salary might reflect different market conditions for presidents with these types of characteristics or the operation of age or gender discrimination in the market for presidents.

Characteristics of the institution that affect the responsibility that the president has such as the size, as measured by enrollments, and complexity, as measured by institutional type and the level of research volume (for research and doctoral institutions), should matter. Variables that reflect the revenues coming into the institution should also matter. Institutions with higher endowments per student, larger enrollments, higher average faculty salaries and entering classes with higher average test scores should also pay higher salaries to presidents. The latter variable is expected to be important because the academic

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data from some institutions on either budgets or enrollments.

[12] The empirical models in this section are similar in spirit to those found in Boulanger and Pliskin (1999) who use presidents' compensation data for 1995-96 obtained from the *Chronicle of Higher Education.*

selectivity of an institution affects it applicant flow, its yield on accepted applicants, the level of tuition that it can charge and the fraction of its tuition that it must give back to students in the form of grant aid to induce them to attend the institution.

Column 1 of table 6 presents estimates of the determinants of the logarithm of a president's salary, using data pooled across presidents/institutions and years for the 1992-93 to 1996-97 period. With slightly more than 400 presidents per year and 5 years of data, we have more than 2000 observations. The explanatory variables in the model include the president's age, gender, tenure in position, whether a prior presidency was held, the tenure at the prior presidency, whether the president is a member of the clergy. The logarithms of endowment per student, annual fund raising level per student, full-time equivalent enrollment, the average salary of professors at the institution and the institution's research and development expenditures (for research and doctoral institutions) are also included in the model[13]. Also included is an estimate of the average SAT scores of enrolled freshman at the institution, dichotomous variables for the year that the observation comes from and dichotomous variables to control for non-reporting of many of the included variables. The data appendix provides the source for each variable.

It is plausible to hypothesize that doctoral and research universities are more difficult to lead than comprehensive universities, which are in turn more difficult to lead than liberal arts institutions. The presence of a substantial volume of research, along with large Ph.D. programs increases the complexity of the doctoral and research universities and adds another set of objectives that their presidents must be concerned about that presidents of comprehensives do not face. The multiplicity of programs present at the

comprehensives, as compared to the liberal arts colleges, may lead the presidencies of the comprehensive to be more difficult jobs than the presidencies of liberal arts colleges. If this is the case, institutional type per se may be an important determinant of presidents' salaries and we also include dichotomous variables for institutional type in our estimating equation.

The coefficient estimates for this model are found in column 1 of table 6. They imply that presidents' receive about 0.6 percent higher salaries a year for each year of tenure in their current position and 0.5 percent higher salaries for each year of tenure in a prior presidency.[14] Presidents who are members of the clergy receive about 19% less than other presidents, other factors held constant. Higher endowments per student, enrollments, and average faculty salaries are all associated with higher presidents' salaries, but the annual fund raising level per student is not. Finally, an increase in average SAT scores of 100 points at an institution is associated with about a 2 percent increase in the president's salary.

The estimated coefficients also suggest that presidents of research and doctoral universities receive salaries that are about 12 percent higher, other variables held constant, than their colleagues at other institutional types. However, presidents of comprehensive universities do not appear to receive a pay premium relative to presidents of liberal arts colleges, once we control for other variables in the model.

The remaining columns of table 6 present coefficient estimates that test the sensitivity of our findings to various permutations of the data and assumptions. Column

[13] Interestingly, endowment per student and annual fund raising level per student are not very highly correlated across institutions in the sample.

(2) presents coefficient estimates of the identical model save that the dependent variable is now the logarithm of compensation (salary plus reported benefits). The sample size is reduced because data on presidents' benefits were reported in the *Chronicle of Higher Education* only starting in 1993-94. However, the pattern of results is very similar to those in the previous column.

The models estimated so far specify that a president's salary is related to the average salary of faculty at the same institution. A goal of the next section will be to see if we can "explain" differences across institutions in the rate of growth of presidential compensation relative to the rate of growth of faculty compensation. However, it is reasonable to argue here that average faculty salary is endogenous and determined by many of the same forces that influence a president's salary. So in column (3) we present coefficients of the president's salary equation that omit the average professor salary variable.

The coefficients of the variables in this equation are very similar to the corresponding coefficients found reported in column (1). As we expected, the coefficients of endowment per student, enrollment and freshman test scores increase in magnitude, with the impact of the level of average SAT scores on presidents' salaries tripling in magnitude. The increases in the magnitudes of these variables' coefficients occur because part of these variables impact on presidents' salaries operated in the previous equations through their effects on average faculty salaries.

Column (4) of table 6 presents estimates of coefficients from the same president's salary equation that is found in column (1). We have omitted from the estimation sample

[14] We experimented with including quadratic terms in current and prior tenure to allow for diminishing

here any year-president observation in which the president was in the last year of his or her tenure. However, this restriction leads to only marginal changes in any of the estimated coefficients. Finally, in column (5), we exclude all presidents who are clergy from the sample. This exclusion does not significantly change any of the remaining coefficients in the model.

The estimates presented in table 6 assume that the impact of any explanatory variable on a president's salary, other than the dichotomous variable for institutional type is the same for presidents at all types of institutions. To see whether this is true, we estimate our basic model for each institutional type, both including and excluding, average faculty salaries from the equations. The estimated coefficients from these models appear in Table 7.

These results suggest that it is important to stratify of the data by institutional type when analyzing presidents' salaries. Remembering that all finding are *ceteris paribus* (other variables in the model held constant), we find the following: A president's age is positively associated with salary for research and doctorate universities, but negatively associated for liberal arts colleges. Female presidents receive 3 to 6 percent less than male presidents at comprehensive universities, but about 3.5 percent more than male presidents at liberal arts colleges.[15] Years of tenure at the current and at any past presidency do not affect salaries of presidents of research and doctoral universities. Both tenure measures are positively associated with the salaries of comprehensive university president's, however only tenure on the current job matters for liberal arts college presidents. Increases in

returns to tenure but these variables' coefficients never proved to be statistically significant.

[15] Additional analyses suggest that this latter differential is not solely a "women's college" effect. Female presidents of coeducational liberal arts colleges also receive higher salaries than their male counterparts.

endowment per student have the largest impact on presidents' salaries at liberal arts colleges and increases in freshman SAT scores do not lead to higher salaries for the presidents of research and doctoral universities. Finally, at research and doctoral institutions, the level of the president's salary is positively associated with the institution's level of research and development expenditures.[16]

IV Analyses of Presidents Salary and Compensation Changes

Interesting as they are, the results presented in the previous section tell us little about whether private college university presidents are rewarded for their "performance". To say, for example, that wealthier institutions with larger endowments pay higher salaries to their presidents, is not the same thing as saying that presidents whose institutions' endowments grow at above average rates receive, other factors held constant, above average salary increases. Indeed while the first statement has been shown to be true, there are good reasons why the second statement should not be true.

To see this, note that the growth of an institution's endowment depends upon four factors the total rate of return on the institution's endowment, the fraction of the endowment value that the institution spends each year (its "spending rate"), the total level of gifts to the institution in a year, and the fraction of those gifts which are placed in the endowment rather than being used to fund current expenditures or capital projects. The total rate of return on the endowment depends heavily on market conditions and the investment policies specified by the trustees of the institution and the president has little influence over these factors. Similarly, the institution's trustees determine the "spending

[16] Substitution of federally funded research and development expenditures for this measure in the model yielded a similar positive relationship.

rate". While the president can marshal arguments to influence the trustees' decision, such arguments do not always carry the day.

The president plays a major role, often the major role, in determining the institution's fund raising success. Decisions on the current and capital budgets to recommend to the trustees ultimately also rest with the president. If a president's salary increases were tied to the growth in the endowment, this would provide him or her with an incentive to skimp on capital projects and to not devote any spending of annual gifts on current operations.

This line of reasoning suggests that it would be foolish for trustees to tie a president's salary or compensation growth to the growth rate of the institution's endowment. A much better strategy would be to reward the president for maintaining an already high level of annual fund raising or for increasing the institution's fund raising levels. So we expect to find relationships between fund raising success and presidents' salary and compensation increases, rather than between endowment changes and their salary and compensation increases.

Boards of trustees have been strongly advised by two successful university presidents (one now doing other things) that the best way to reward a successful president is via the route of deferred compensation payments, which are not as "visible" as annual salary increases. They also note that such payments are often explicitly tied to presidents' success in raising funds.[17] Hence we expect that the performance-compensation relationship will be stronger than the performance-salary relationship.

[17] James L. Fisher and James V. Koch (1996), chapter 20.

However, teasing out any relationships that exist between presidents' salary or compensation changes and their "performance" will not be an easy task. Explicit or implicit incentive payments may occur at discrete points in time, which differ across presidents. For example, the highest paid president in 1997-98 was a liberal arts college president who was rewarded a hefty retirement package in recognition of his years of outstanding service to the college. The chairman of the college's board of trustees credited the president for having built the college's endowment, reduced its debt and enhanced its academic reputation during his 28 years of service to the institution.[18] Because this reward for performance was a discrete one that came at the end of the president's term, focusing on the relationship between his compensation change and the institution's performance over any period of time that did not include his last year in office, would drastically understate the long-run relationship.

Similarly large compensation increases may be used as a way of "encouraging" a president to voluntarily resign and thus may reflect "nonperformance" rather than performance. One long-term comprehensive university president who retired from his position in 1997-98 was widely blamed for the financial difficulties that his institution had suffered during his last years in office. His large increase in compensation during his last year of office included a retirement package and a severance payment that will be paid out over time. In accordance with IRS regulations, such payments were recorded as deferred compensation in the year that they were granted.[19]

If we exclude presidents who are in their last year of service from our sample, we run the risk of substantially understating the relationship between compensation changes

[18] See Stephen Burd (1999).

and performance. On the other hand, if we include them, we run the risk that large increases in compensation may reflect attempts to "buy presidents out" and bad performance, rather than good performance. Either way, if data that span a relatively short-time period are used, it is unlikely that we will observe a tight compensation change performance relationship.

The results of our efforts to estimate such a relationship appear in table 8. The estimates in the table are based upon the sample of presidents who remained in the same position between academic years 1992-93 and 1996-97 when salary changes are analyzed and 1993-94 to 1996-97 when compensation changes are analyzed. In column (1), the logarithm of the president's salary in 1996-97 minus the logarithm of his salary in 1992-93, a measure of his percentage salary change over a 4 year period, is specified to depend upon the type of institution that the president leads, the change in each of the institutional level variables used in the analyses of the presidents' salary levels.

Presidents' salary changes during the period are seen to be positively and statistically significantly associated with their institutions' enrollment growth, average professor salary growth and, for research universities, their institutions' growth in research and development expenditures.[20] While a positive association between presidents' salary growth and the growth in annual giving at institutions is observed, this relationship is not

[19] Burd (1999).

[20] Additionally analyses indicate that research and doctorate university presidents' salary growth is also significantly associated with the growth in total external (federal state and corporate) research and development funding at their institutions.

statistically significant. Institutional type, per se, does not appear to be associated with salary growth.[21]

The estimates in column (1) are for a model that permits the personal characteristics that were assumed to influence presidents' salary levels in tables 6 and 7 to also influence presidents' salary changes. These characteristics are "dated" as of the 1992-93. Presidents with more seniority in their position received larger salary increases during the period than presidents with less seniority. Presidents who held a previous presidency received smaller salary increases. Finally, presidents who were members of the clergy also received smaller salary increases during the period.

In column (2) we use compensation changes rather than salary changes as the dependent variable. Inasmuch as compensation includes deferred payments and, as noted above, deferred payments are believed to be the route via which a good deal of the pay for performance for presidents' occurs, we expect the compensation change model to "outperform" the salary change model. While we caution that the compensation change data cover fewer years (because the *Chronicle* first reported benefit data for 1993-94), in fact the opposite is true. We are less successful in explaining presidents' compensation changes than we are in explaining their salary changes.[22] The only variable that proves to be statistically significant is the change in research and development expenditure variable for the research universities. Reporting errors in the benefits (deferred compensation) data

[21] We also estimated presidents' annual salary change equations using annual measure of "performance" and pooling the data across years. The fit of these models was very poor and many fewer variables were significant in each equation

[22] When we estimated the presidents' salary change equation for the shorter period, its fit was somewhat poorer than the fit of the model reported in table 1, but still better than that of the compensation equation.

and the timing of deferred compensation awards make inferring relationships from the compensation change data very difficult.

Returning to the salary change data, in column (3) we present estimates of a model that excluded average faculty salary growth because this variable is likely influenced by several of the other variables in the model. The parameter estimates that we obtain are very similar to those obtained in column (1). In column (4), we reestimate the model, excluding presidents who are in the last year of their presidency. Doing so improves the fit of the model and increases in the level of external gifts per student received are now seen to be significantly positively related to the presidents' salary increases. Finally in column (5) we exclude presidents who are clergy from the sample; this only marginally changes the remaining coefficients of the model.

Table 9 estimates presidents' salary level change equations with the data stratified by institutional type. Presidents' salary changes are associated with their faculty members' average salary increases at all three types of institutions, with the relationship being strongest at the research/doctoral institutions. Research and development expenditure changes are associated with presidents' salary changes at the latter institutions and president's salaries at comprehensive institutions are associated with their institutions' enrollment growth over the period. However, none of our other performance measures ever proves significant.

IV. Concluding Remarks

Taken together, our results provide only weak support for the hypothesis that presidents' salary and compensation changes are related to measures of their institutions' performance. Somewhat surprisingly freshman test score changes are not associated with

president's salary growth. Only when presidents in their last year of tenure are excluded from the sample are presidents' salary increases associated with improvements in their fund raising success. Reporting error problems and the problems associated with the timing of deferred payments made it difficult for us to tease out any behavioral relationships from the presidents' compensation change equations.

Our salary and compensation change analyses are for a sample of presidents who remain in office for a four-year period during the 1990s. It may well be the case that the major rewards that presidents receive for their performance are continued tenure in office, and opportunity to retire at later ages, or opportunities to move to higher paying positions in either the academic or nonacademic sectors. In future work we hope to explore the determinants of presidents' tenure in office, retirement ages, and mobility to different positions.

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Data Appendix

Compensation Data

We use College President's compensation data from the *Chronicle of Higher Education s* pay-and-benefit survey, which restricts us to studying private institutions. From this sample, we exclude presidents with very low salaries (< $40,000), interim presidents, presidents who only worked part of the year, and presidents with missing data.

Demographic and Experience Variables

We use the *American Council of Education s National President Study* for data on age, gender, seniority, prior presidency, and years of experience at prior presidency. For some presidents without information in the ACE data set, we were able to obtain data from *Who s Who in America* or *Who s Who in Education*. The prior presidency variable equals one if the individual was a president at another institution in at least one of his or her previous two jobs. If the individual was a president during both jobs, then years at prior presidency is a sum of the two tenures.

Clergy

Chronicle of Higher Education s pay-and-benefit survey provides data on whether a president is a member of the clergy.

Enrollment

With data from the *IPEDS Enrollment Survey*, we compute full-time equivalent enrollment by weighting part times students as 1/3. Both undergraduate and graduate students are included.

Endowment per Student.

Data on the market value of endowment assets, from the *IPEDS Finance Survey*, is divided by full-time equivalent enrollment.

Average Professors Salary

We compute average professors' salary from the *IPEDS Faculty Salary Survey*. This variable is computed by summing the expenditures on assistant, associate and full professors and dividing by the number of professors in these three groups. When examining changes in average faculty salary over time, we also conduct analyses using faculty salary data obtained from the American Association of University Professors (AAUP), as published yearly in *Academe*. This data contains information on the average percentage change in salary for continuing full professors. This variable is superior to the change in the average salary of professors because the latter is sensitive to new hires, retirements and faculty turnover. However we also use the latter in our analyses of presidents' salary changes because the AAUP data set does not contain data for many of the institutions in our sample.

Test Scores

We use the *College Board s Annual Survey of Colleges* for data on the SAT and ACT scores for the freshman class of each institution. This data set contains the 25th and 75th percentile for both verbal and math scores on the SAT, and 25th and 75th percentiles for the overall score on the ACT. To compute one SAT score, we add the 25th percentile of the verbal score with the 75th verbal, 25th math, and 75th math and divide by 2. To compute one ACT score, we add the 25th and 75th percentile of the overall score and divide by 2. We do not use test scores that are computed from less than 50% of an institution's freshman class. In our analysis, we use SAT scores whenever possible. For institutions with missing SAT scores that have ACT scores, we use convert the ACT scores to SAT scores. The conversion is sensitive to the SAT Scale recentering that changed student scores in the mid-1990s and we take account of the recentering in our conversion.

Research and Development Expenditures

The *National Science Foundation (NSF) Survey of Research and Development Expenditures* provides data on total research and development expenditures. We only use this variable for Research and Doctoral institutions.

Timing

Because salary decisions are made in the spring or summer of the preceding academic year, it is important to use data that are available to trustees at that time. Therefore, to examine the 1994-95 presidential compensation data, we use the endowment value as of July 1, 1994, the enrollment data from Fall 1993, the freshman test score data from Fall 1993, and the research and development data for the 1993-94 academic year. The same pattern of timing is used with the other years' presidential compensation data.

Table 1

Mean Salaries and Benefits of Private College and University Presidents 1992/93 to 1997/98

	Salaries			Salaries & Benefits		
	Obs.	Mean	Std Dev	Obs.	Mean	Std Dev
All Institutions						
1992-93	385	$142,428	62,719			
1993-94	429	146,603	58,291	384	$174,072	72,708
1994-95	422	156,587	65,054	385	185,073	79,438
1995-96	421	162,570	63,693	391	191,473	85,202
1996-97	427	172,226	71,061	401	200,741	83,122
1997-98	418	185,539	89,247	392	217,232	102,694
Research						
1992-93	31	$254,406	92,407			
1993-94	34	259,218	66,993	33	$302,086	78,752
1994-95	37	288,685	87,127	37	335,378	97,712
1995-96	36	296,778	55,856	36	353,108	125,583
1996-97	38	314,330	74,142	38	355,682	85,596
1997-98	35	343,469	79,220	34	393,644	89,978
Doctoral						
1992-93	32	$184,127	70,388			
1993-94	35	184,798	63,517	33	$223,539	92,672
1994-95	33	194,970	64,041	31	234,821	81,002
1995-96	30	207,517	67,572	30	246,906	84,711
1996-97	30	211,668	73,838	30	250,913	84,691
1997-98	30	239,046	88,997	30	278,025	102,304
Comprehensive						
1992-93	186	$123,651	49,233			
1993-94	211	125,666	39,894	175	$146,901	50,313
1994-95	210	133,718	42,516	182	154,577	52,701
1995-96	206	141,095	47,982	181	161,322	55,932
1996-97	211	150,069	54,518	189	171,786	61,743
1997-98	205	159,933	59,509	187	186,695	72,353
Liberal Arts						
1992-93	136	$132,773	31,004			
1993-94	149	141,582	41,615	143	$166,366	49,769
1994-95	142	147,068	35,969	135	173,568	45,726
1995-96	149	150,784	33,444	144	177,412	44,427
1996-97	148	159,335	38,972	144	187,405	52,629
1997-98	148	172,899	84,102	141	202,362	92,824

Source: Authors' calculations from data reported in the *Chronicle of Higher Education*. Interim, partial year presidents, and presidents with salaries below $40,000 not included.

Table 2

Percentage Changes in Presidents' Salaries and Benefits

	N	Mean	Median	25th Percentile	75th Percentile
A) Percentage Change in Salary: 1992/93 to 1996/97					
All	269	25.5	20.8	12.9	33.0
Research	21	23.2	18.7	15.6	31.6
Doctoral	17	23.3	17.4	11.1	22.3
Comprehensive	141	26.9	22.5	12.7	36.1
Liberal Arts	90	24.3	20.3	13.3	30.6
B) % Change in Salary - % Change in Average Faculty Salary: 1992/93 to 1996/97					
All	260	13.5	9.1	0.8	20.9
Research	21	6.5	2.7	-2.1	13.6
Doctoral	16	11.9	6.0	-2.5	14.4
Comprehensive	137	14.9	10.7	-0.7	23.1
Liberal Arts	86	13.1	8.5	2.3	20.3
C) % Change in Salary - % Change in Average Faculty Salary: 1993/94 to 1996/97					
All	288	8.8	5.1	-1.9	14.2
Research	26	8.2	5.4	1.1	13.5
Doctoral	17	14.2	1.4	-3.8	11.3
Comprehensive	150	9.9	5.8	-2.0	19.9
Liberal Arts	95	6.3	4.8	-0.8	12.3
D) % Change in Salary and Benefits - % Change in Average Faculty Salary: 1993/94 to 1996/97					
All	257	9.4	5.8	-2.3	16.1
Research	25	8.6	6.7	-2.6	13.4
Doctoral	16	21.4	4.7	-1.5	19.0
Comprehensive	124	9.5	6.5	-3.1	18.4
Liberal Arts	92	7.4	4.9	-1.5	13.6

Source: Authors' calculations from data reported in the *Chronicle of Higher Education*. Interim, partial year presidents, and presidents with salaries below $40,000 not included.

Table 3

Mobility of Private College and University Presidents
1992/93 to 1996/97

	Academic Year			
	1993-94	1994-95	1995-96	1996-97
Presidents in the sample	484	477	474	470
Who in the next year:				
1) stayed at the same institution	429	430	442	424
2) moved to another institution	4	0	2	1
3) left the sample of institutions*	48	42	26	41
4) their institution left the sample	0	3	4	4

Source: Authors' calculations from data reported in the *Chronicle of Higher Education*. Interim presidents are not included

* Information on the post presidency status of many of the individuals who left the sample of institutions was obtained from Who's Who in America, exhaustive searches of the World Wide Web and a telephone survey of the presidents' offices at their former institutions conducted by Cornell's Computer Assisted Survey Team (CAST) in May,2000"

Table 4

Median Salaries of Presidents of Public and Private Institutions in 1999: By Operating Budgets and Enrollment

	Public	Private	Private/Public ratio
By Budgets			
Median Size Institution	$50.5 million	$34.8 million	0.689
Median Institution's President Salary	$132,098	$176,800	1.338
By Enrollments			
Median Size Institution	4,532	1,560	0.344
Median Institution's President Salary	$132,196	$175,900	1.331

Source: *1999-2000 Administrative Compensation Survey* (Washington DC: College and University Personnel Association, 2000)- table 2, 3, 6, and 7.

Table 5

Mean Values of Private College and University Presidents' Characteristics in 1996.

	All	Research & Doctorate	Comprehensive	Liberal Arts
Seniority	8.2	6.2	9.1	7.9
Age at Start of Position	48	51	47	48
Clergy	.15	.15	.24	.02
Female	.18	.08	.21	.21
Prior Presidency	.24	.31	.23	.23
n	378	72	185	121

Source: Authors computations from data on the presidents found in the American Council on Education's *The American President* data file, supplemented by information obtained from *Marquis Who's Who in American Education: 1996-97* (New Providence, NJ: Reed Reference Publishing, 1995) and *Marquis Who's Who in America: 1997* (New Providence, NJ: Reed Reference Publications, 1996)

Table 6

President Salary and Compensation Equations[a]
1992/92 to 1996/97 sample
(absolute value t-statistics)

	(1)	(2)	(3)	(4)	(5)
Age	0.0001	0.0011	0.0010	0.0004	0.0000
	(0.1)	(0.8)	(0.8)	(0.4)	(0.0)
Female	-0.0076	0.0176	0.0008	-0.0105	0.0145
	(0.5)	(1.0)	(0.1)	(0.7)	(0.8)
Seniority	0.0058	0.0075	0.0051	0.0063	0.0067
	(5.1)	(5.5)	(4.5)	(5.3)	(5.9)
Prior Presidency	0.0054	-0.0100	0.0270	0.0061	0.0048
	(0.3)	(0.5)	(1.3)	(0.3)	(0.2)
Years at Prior Presidency	0.0057	0.0070	0.0042	0.0056	0.0065
	(2.1)	(2.4)	(1.5)	(2.1)	(2.3)
Clergy	-0.1938	-0.2163	-0.1741	-0.1962	
	(10.1)	(9.9)	(8.7)	(9.7)	
Professor Average Salary	0.4896	0.4347		0.4675	0.4727
	(3.5)	(3.0)		(3.2)	(3.1)
Endowment Per Student	0.0313	0.0424	0.0497	0.0329	0.0345
	(3.6)	(4.3)	(6.9)	(3.6)	(3.9)
Gifts Per Student	0.0021	0.0037	0.0011	0.0016	0.0064
	(0.5)	(0.6)	(0.3)	(0.4)	(1.6)
Enrollment	0.1415	0.1569	0.1890	0.1401	0.1494
	(7.1)	(7.0)	(15.5)	(6.8)	(7.0)
Freshman Test Scores	0.0002	0.0003	0.0006	0.0003	0.0002
	(2.2)	(2.3)	(7.3)	(2.4)	(1.6)
R&D Expenditures	0.0138	0.0071	0.0090	0.0147	0.0112
	(1.3)	(0.6)	(0.8)	(1.3)	(1.0)
Research/Doctoral University	0.1245	0.1311	0.1487	0.1322	0.1315
	(2.5)	(2.2)	(3.2)	(2.6)	(2.6)
Comprehensive University	0.0154	0.0190	0.0129	0.0222	0.0196
	(0.9)	(0.9)	(0.7)	(1.3)	(1.1)
Number of observations	2074	1552	2074	1930	1851
R-squared	0.6456	0.6456	0.605	0.6488	0.6413

where (1) Includes all Presidents discussed in Table 1, salary is dependent variable; (2) same as (1), with Salary + Benefits is the depended variable; (3) same as (1); (4) same as (1) does not include presidents in their last year of presidency; (5) same as (1), does not include presidents who are clergy

[a]All regressions used robust standard errors. Also included in each equation are year dichotomous variables and dichotomous variables for nonreporting of Age, Endowment per Student, Average Professor Salary, Test Scores, Research and Development Revenue, and Prior Presidency.

Table 7

Presidents Salary Equations: 1992/93 to 1996/97 Sample[a]
Institutions Segmented by Institutional Type
(absolute value t-statistics)

	Research and Doctorate		Comprehensive		Liberal Arts	
	(1)	(2)	(1)	(2)	(1)	(2)
Age	0.0091	0.0111	-0.0023	-0.0004	-0.0027	-0.0029
	(2.6)	(3.2)	(1.7)	(0.3)	(2.3)	(2.4)
Female	-0.0952	-0.1155	-0.0548	-0.0192	0.0353	0.0347
	(1.4)	(1.5)	(2.7)	(0.9)	(2.3)	(2.2)
Seniority	-0.0016	-0.0024	0.0103	0.0084	0.0049	0.0048
	(0.3)	(0.5)	(6.2)	(5.0)	(3.8)	(3.6)
Prior Presidency	0.1367	0.0671	-0.0520	-0.0280	0.0360	0.0428
	(2.0)	(1.0)	(1.8)	(0.9)	(1.4)	(1.5)
Years at Prior Presidency	-0.0109	-0.0067	0.0162	0.0152	0.0020	0.0019
	(1.9)	(1.2)	(3.7)	(3.1)	(0.5)	(0.5)
Clergy	-0.1335	-0.1664	-0.2100	-0.2006	-0.0475	-0.0105
	(4.0)	(4.7)	(9.2)	(8.3)	(0.7)	(0.1)
Professor Average Salary	0.6498		0.6825		0.2011	
	(4.6)		(10.3)		(1.6)	
Endowment Per Student	0.0087	0.0353	0.0073	0.0214	0.0765	0.0824
	(0.6)	(2.2)	(0.9)	(2.4)	(6.9)	(8.7)
Gifts Per Student	0.0029	0.0118	0.0028	-0.0005	-0.0028	-0.0034
	(0.2)	(0.8)	(0.6)	(0.1)	(0.4)	(0.4)
Enrollment	0.0718	0.1074	0.1315	0.2404	0.1928	0.2063
	(3.0)	(4.5)	(6.7)	(15.3)	(10.2)	(14.7)
Freshman Test Scores	-0.0005	-0.0001	0.0003	0.0007	0.0004	0.0007
	(2.5)	(0.5)	(2.5)	(5.2)	(2.6)	(6.2)
R&D Expenditures	0.0506	0.0477				
	(3.4)	(3.2)				
Number of observations	333	333	1020	1020	721	721
R-squared	0.4792	0.4343	0.5415	0.4705	0.6048	0.5867

where each equation includes all Presidents discussed in Table 1, salary is dependent variable.

[a]All regressions used robust standard errors. Also included in each equation are year dichotomous variables and dichotomous variables for nonreporting of Age, Endowment per Student, Average Professor Salary, Test Scores, Research and Development Revenue, and Prior Presidency.

Table 8

President Salary and Compensation Change Equations[a]
(absolute value t-statistics)

	(1)	(2)	(3)	(4)	(5)
Age	0.0006	0.0011	0.0007	0.0014	0.0003
	(0.3)	(0.6)	(0.4)	(0.6)	(0.1)
Female	0.0325	0.0320	0.0341	0.0391	0.0351
	(1.0)	(1.1)	(1.1)	(1.2)	(1.0)
Seniority	0.0041	0.0000	0.0043	0.0041	0.0058
	(1.8)	(0.0)	(1.9)	(1.8)	(2.6)
Prior Presidency	-0.0980	-0.0483	-0.0950	-0.0973	-0.1048
	(2.1)	(1.2)	(2.0)	(2.2)	(2.2)
Years at Prior Presidency	0.0088	0.0056	0.0096	0.0090	0.0095
	(1.5)	(1.1)	(1.6)	(1.6)	(1.6)
Clergy	-0.0913	-0.0368	-0.1038	-0.1030	
	(2.5)	(1.0)	(2.9)	(2.9)	
Professor Average Salary	0.4677	0.1438		0.4596	0.2096
	(3.2)	(0.9)		(3.1)	(1.4)
Endowment Per Student	0.0325	0.0000	0.0339	-0.0304	0.0614
	(1.0)	(0.0)	(1.1)	(0.9)	(1.9)
Gifts Per Student	0.0417	-0.0003	0.0411	0.0589	0.0312
	(1.5)	(0.0)	(1.4)	(2.0)	(1.1)
Enrollment	0.1540	-0.0036	0.1817	0.1310	0.1170
	(2.1)	(0.1)	(2.5)	(1.9)	(1.6)
Freshman Test Scores[b]	0.0002	0.0000	0.0010	-0.0003	0.0023
	(0.1)	(0.0)	(0.3)	(0.1)	(0.8)
R&D Expenditures	0.1941	0.2425	0.1951	0.1912	0.2098
	(2.9)	(4.2)	(2.8)	(2.9)	(3.2)
Research/Doctoral University	-0.0741	0.0078	-0.0565	-0.0759	-0.0583
	(0.9)	(0.1)	(0.7)	(0.9)	(0.7)
Comprehensive University	0.0188	0.0268	0.0212	0.0170	0.0298
	(0.7)	(1.1)	(0.8)	(0.7)	(1.2)
Number of observations	267	268	267	238	238
Adj. R-squared	0.0959	0.0428	0.0657	0.1289	0.081

where (1) Includes all Presidents who remained at the same institution from 1992/93-1996/97, salary is dependent variable; (2) Includes all Presidents who remained at the same institution from 1993/94-1996/97, Salary + Benefits is the depended variable; (3) same as (1); (4) same as (1) does not include presidents in their last year of presidency in 1996/97; (5) same as (1), does not include presidents who are clergy.

[a]Also included in each equation are dichotomous variables for nonreporting of Age, Endowment per Student, Average Professor Salary, Test Scores, Research and Development Revenue, and Prior Presidency

[b]Coefficient has been multiplied by 10.

Table 9

Presidents Salary Change Equations[a]
Institutions Segmented by Institutional Type
(absolute value t-statistics)

	Research and Doctorate		Comprehensive		Liberal Arts	
	(1)	(2)	(1)	(2)	(1)	(2)
Age	-0.0053	0.0019	0.0034	0.0037	-0.0066	-0.0068
	(0.8)	(0.3)	(1.0)	(1.1)	(2.0)	(2.0)
Female	0.1542	0.2038	0.0047	0.0046	0.0376	0.0279
	(1.1)	(1.3)	(0.1)	(0.1)	(0.9)	(0.6)
Seniority	0.0141	0.0111	0.0075	0.0076	0.0038	0.0042
	(1.9)	(1.3)	(2.0)	(2.0)	(1.2)	(1.3)
Prior Presidency	-0.0371	0.0429	-0.1012	-0.0998	-0.1055	-0.0659
	(0.3)	(0.3)	(1.5)	(1.5)	(1.2)	(0.7)
Years at Prior Presidency	0.0111	0.0061	0.0137	0.0151	0.0042	0.0002
	(0.9)	(0.4)	(1.4)	(1.6)	(0.4)	(0.0)
Clergy	-0.0344	-0.0001	-0.1278	-0.1373	0.1295	0.0653
	(0.4)	(0.0)	(2.6)	(2.8)	(0.9)	(0.5)
Professor Average Salary	1.1095		0.5077		0.5413	
	(2.9)		(2.1)		(2.2)	
Endowment Per Student	-0.3171	0.0685	0.0633	0.0617	0.0648	0.0647
	(1.4)	(0.3)	(1.5)	(1.5)	(0.8)	(0.8)
Gifts Per Student	0.0139	0.0170	0.0315	0.0342	-0.0208	-0.0237
	(0.1)	(0.1)	(0.7)	(0.7)	(0.5)	(0.6)
Enrollment	-0.2024	-0.2045	0.2221	0.2577	0.0010	0.0521
	(0.9)	(0.9)	(2.1)	(2.6)	(0.0)	(0.3)
Freshman Test Scores[b]	0.0019	0.0097	0.0030	0.0022	-0.0005	0.0001
	(0.3)	(1.4)	(0.6)	(0.5)	(0.1)	(0.0)
R&D Expenditures	0.1980	0.2547				
	(2.9)	(3.4)				
Number of observations	38	38	140	140	89	89
Adj. R-squared	0.3597	0.1502	0.0938	0.0764	0.051	-0.0062

where each equation includes all Presidents who remained at the same institution from 1992/93-1996/97, salary is the dependent variable.

[a]Also included in each equation are dichotomous variables for nonreporting of Age, Endowment per Student, Average Professor Salary, Test Scores, Research and Development Revenue, and Prior Presidency

[b]Coefficient has been multiplied by 10.