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Paying Our Presidents: What Do Trustees Value?

Abstract

Our study makes use of data from a panel of over 400 private colleges and universities on their presidents' salaries and benefits. These data, reported annually to the Internal Revenue Service on Form 990, have been collected by and reported in the *Chronicle of Higher Education* for academic years 1992–1993 through 1997–1998. We merge these data with those from 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 array of sources permits us to estimate salary and compensation level and change equations.

We first provide descriptive statistics on the compensation, mobility, and personal characteristics of presidents of American private colleges and universities. 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 conclusion summarizes our findings.

Keywords

higher education, college presidents, compensation, trustees, mobility

Disciplines

Benefits and Compensation | Education Economics | Higher Education | Labor Economics | Labor Relations

Comments

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Paying Our Presidents: What Do Trustees Value?

Ronald G. Ehrenberg, John J. Cheslock, and Julia Epifantseva

In 1997–1998, 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 it’s time to renegotiate your contract” (Burd, 1999).

To many faculty members at private, doctoral-level, comprehensive, and baccalaureate institutions whose average compensation in 1997–1998 was \$91,972, \$64,774 and \$64,286, respectively, compensation packages for presidents of these magnitudes do indeed seem excessive (American Association, 1998). These highly paid presidents, however, are the chief executive officers (CEOs) of institutions whose operating budgets sometimes reach

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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 for-profit corporations of similar sizes. 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 publicized, criticized, and used as examples of waste and inefficiency in higher education. 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 disbanded the Adelphi Board of Trustees for failing to exercise adequate fiduciary responsibility.

Surprisingly, very little is known about the compensation structure applied to American college and university presidents. The extensive literature on corporate CEOs shows that their compensation is often either explicitly or implicitly structured to provide incentives for them to act in their shareholders' interests (Murphy, 1999). Incentives also apparently exist in the compensation structures of such appointed government executives as city managers and school superintendents, encouraging them to act in their constituents' interests (Ehrenberg, Chaykowski, & Ehrenberg, 1988; Goldstein & Ehrenberg, 1976). However, the few studies that have addressed private college and university presidents' compensation have used only cross-section data to explain differences in compensation across institutions (Boulanger & Pliskin, 1999; Pfeffer, & Ross, 1988). Such data do not enable researchers to ascertain if academic presidents' compensation is structured to provide 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 that determines the compensation and tenure in office of private college presidents. At base, then, our paper is an effort to infer what the trustees of private academic institutions value.

This was not be an easy task. Nearly 20 percent of the private academic institutions that took part in one recent national survey do not require performance reviews from their presidents (Atwell & Wellman, 2000, p. 59). Similarly, there is not always agreement that president's compensation changes should be related to the results of board-conducted performance reviews (Ingram & Weary, 2000, pp. 17–18). Nonetheless, within these limitations, we strive to infer whether variables that we believe trustees should value do, in fact, influence their presidents' compensation changes.

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

years 1992–1993 through 1997–1998.¹ We merge these data with those from 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 array of sources permits us to estimate salary and compensation level and change equations.

We first provide descriptive statistics on the compensation, mobility, and personal characteristics of presidents of American private colleges and universities. 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 conclusion summarizes our findings.

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. (This situation arises most often when a medical college is part of a university.) Starting with the data for academic year 1992–1993 (for salary) and 1993–1994 (for benefits), the *Chronicle of Higher Education* has collected and published information on private four-year college and university presidents' compensation for institutions classified as research, doctoral, comprehensive, and liberal arts I (Carnegie, 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 foundation 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 undervalue or fail to report perquisites 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.

¹Presidents' salary data have been reported since 1992–1993; however, presidents' benefits data are available only since 1993–1994. Data for 1998–1999 were recently published—too late to be incorporated in our study.

Table 1 presents data on the mean salaries of four-year private college and university presidents annually for 1992–1993 to 1997–1998. Similar data are reported for the sum of salaries and benefits for 1993–1994 to 1997–1998. The means are reported each year in the aggregate and separately for Carnegie category research, doctoral, comprehensive and liberal arts institutions. We excluded presidents who had salaries under \$40,000 a year, were interim or part-year presidents, or whose salary data were not reported in any of the years of this study.

The average president's salary was over \$185,000 in 1997–1998. 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 1992–1993 to 1996–1997 period, in the aggregate and by category of institution. Excluded from this table are presidents who began their terms of office after 1992–1993, presidents who left their positions prior to 1996–1997, and presidents whose institutions were not present in the sample each year.

During the 1992–1997 period, the presidents received an average 25.5% increase in salary. The median salary increase was 20.8%. Presidents of research universities and liberal arts colleges fared slightly better, on average, than their counterparts at doctoral and comprehensive institutions. To focus on the average increases, however, is to ignore the variation in the increases that occurred across presidents. Indeed, the 25th to 75th percentile range for presidents' salary increases during the period was about 13 to 33%.

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.² As Panel B of the table indicates, the average salary increase of the presidents exceeded the average salary increase of faculty at their institutions by 13.5% during the period. Presidents of research universities gained less relative to their faculty than presidents at other categories of institutions. The median differences between the salary increases of

²It is important to recognize that we are truly 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.

TABLE 1
MEAN SALARIES AND BENEFITS OF PRIVATE COLLEGES AND
UNIVERSITY PRESIDENTS
1992–1993 TO 1997–1998

<i>Types of Institutions</i>	<i>Salaries</i>			<i>Salaries and Benefits</i>		
	<i>Obs.</i>	<i>Mean</i>	<i>Std Dev</i>	<i>Obs.</i>	<i>Mean</i>	<i>Std Dev</i>
All Institutions						
1992–1993	385	\$142,428	62,719			
1993–1994	429	146,603	58,291	384	\$174,072	72,708
1994–1995	422	156,587	65,054	385	185,073	79,438
1995–1996	421	162,570	63,693	391	191,473	85,202
1996–1997	427	172,226	71,061	401	200,741	83,122
1997–1998	418	185,539	89,247	392	217,232	102,694
Research						
1992–1993	31	\$254,406	92,407			
1993–1994	34	259,218	66,993	33	\$302,086	78,752
1994–1995	37	288,685	87,127	37	335,378	97,712
1995–1996	36	296,778	55,856	36	353,108	125,583
1996–1997	38	314,330	74,142	38	355,682	85,596
1997–1998	35	343,469	79,220	34	393,644	89,978
Doctoral						
1992–1993	32	\$184,127	70,388			
1993–1994	35	184,798	63,517	33	\$223,539	92,672
1994–1995	33	194,970	64,041	31	234,821	81,002
1995–1996	30	207,517	67,572	30	246,906	84,711
1996–1997	30	211,668	73,838	30	250,913	84,691
1997–1998	30	239,046	88,997	30	278,025	102,304
Comprehensive						
1992–1993	186	\$123,651	49,233			
1993–1994	211	125,666	39,894	175	\$146,901	50,313
1994–1995	210	133,718	42,516	182	154,577	52,701
1995–1996	206	141,095	47,982	181	161,322	55,932
1996–1997	211	150,069	54,518	189	171,786	61,743
1997–1998	205	159,933	59,509	187	186,695	72,353
Liberal Arts						
1992–1993	136	\$132,773	31,004			
1993–1994	149	141,582	41,615	143	\$166,366	49,769
1994–1995	142	147,068	35,969	135	173,568	45,726
1995–1996	149	150,784	33,444	144	177,412	44,427
1996–1997	148	159,335	38,972	144	187,405	52,629
1997–1998	148	172,899	84,102	141	202,362	92,824

Source: Authors' calculations from data reported in the *Chronicle of Higher Education*.

Note: Interim, partial-year presidents, and presidents with salaries below \$40,000 not included.

presidents and the faculty members' average salary increases at their institutions 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 slower rates than the rate of increase of their faculty members' average salaries during the period.

Data on presidents' benefits are available starting in 1993–1994. Table 2 also shows 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 between 1993–1994 and 1996–1997. The pattern of results for presidents' pay is very similar to that reported in the previous panel, although the increases are somewhat smaller, due to the three-year period for which data are available. When presidents' pay plus benefits is used, the patterns are again similar.

Our empirical analyses of changes in compensation (below) address the relationship between salary increases and "institutional performance" for presidents who remain in their positions for the entire four-year period. This time frame may overlook rewards that come in the form of opportunities to move to higher paying positions.³ Thus, it is important to also understand the mobility pattern of individuals in the sample.

Table 3 summarizes where each president, who was in the sample in 1993–1994, 1994–1995, 1995–1996, or 1996–1997, was residing the following year. A few institutions that reported data in one year did not report it in the next year, thus making it impossible to follow their presidents' careers. About 90% of the presidents in the sample each year were at the same institution the next year. Only seven moved to a presidency at another private institution that was in the sample during the four-year period. Finally, between 5 to 12% of the presidents in the sample in each year (26 to 48 in number) disappeared from the sample the next year.

Our empirical analyses of presidents' salary and compensation changes (below) are restricted to those presidents who remained in office through 1996–1997, because data on several of the explanatory variables we use in the salary change models were not available for 1997–1998 at the time we wrote the paper. One hundred sixteen of the presidents had left the sample by 1996–1997. A search of *Who's Who in America* provided biographical information for slightly fewer than half. Information on subsequent activities for all but two of the remaining presidents who had left the sample by

³Ehrenberg, Chaykowski, and Ehrenberg (1988) showed that the reward for high-performing school superintendents was most often offers from larger, better-paying school districts and, less often, salary increases in their current school district.

TABLE 2
PERCENTAGE CHANGES IN PRESIDENTS' SALARIES AND BENEFITS

	<i>N</i>	<i>Mean</i>	<i>Median</i>	<i>25th Percentile</i>	<i>75th Percentile</i>
<i>A. Percent of Change in Salary: 1992–1993 to 1996–1997</i>					
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
<i>B. Percent of Change in Salary - Percent of Change in Average Faculty Salary: 1992–1993 to 1996–1997</i>					
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
<i>C. Percent of Change in Salary - Percent of Change in Average Faculty Salary: 1993–1994 to 1996–1997</i>					
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
<i>D. Percent of Change in Salary and Benefits - Percent of Change in Average Faculty Salary: 1993–1994 to 1996–1997</i>					
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*.

Note: Interim, partial-year presidents, and presidents with salaries below \$40,000 not included.

1996–1997 was obtained from exhaustive searches of the World Wide Web that we conducted and from a telephone survey of presidents' offices conducted by Cornell's Computer Assisted Survey Team (CAST) in May 2000.

TABLE 3
MOBILITY OF PRIVATE COLLEGE AND UNIVERSITY PRESIDENTS,
1992–1993 AND 1996–1997

	<i>Academic Year</i>			
	1992–93	1993–94	1994–95	1995–96
Presidents in the sample who, in the next year:	484	477	474	470
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.

*We obtained information on the post-presidency status of many of the individuals who left the sample of institutions 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.

The post-presidency activities of the presidents who left the sample were varied. Sixty-four were retired or emeritus. Five were presidents at institutions not included in our sample. Nine held administrative positions below the rank of president or faculty positions at other academic institutions, while seven 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, six were self-employed, often as consultants, or employed in the corporate world. Three were deceased.

Interestingly, only one individual in our sample became president 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 this lack of mobility to the public sector.

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

TABLE 4
MEDIAN SALARIES OF PRESIDENTS OF PUBLIC AND PRIVATE
INSTITUTIONS IN 1999: BY OPERATING BUDGETS AND ENROLLMENT

	<i>Public</i>	<i>Private</i>	<i>Private / Public Ratio</i>
<i>By Budgets</i>			
Median size institution	\$50.5 million	\$34.8 million	0.689
Median institution's president salary	\$132,098	\$176,800	1.338
<i>By Enrollments</i>			
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), Tables 2, 3, 6, 7.

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 public and private 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.⁴

⁴The slight difference in the median salaries in the two panels of the table probably reflects incomplete data from some institutions on either budgets or enrollments.

TABLE 5
MEAN VALUES OF PRIVATE COLLEGE AND UNIVERSITY
PRESIDENTS' CHARACTERISTICS IN 1996

	<i>All</i>	<i>Research & Doctorate</i>	<i>Comprehensive</i>	<i>Liberal Arts</i>
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).

Who are the presidents in our sample? Table 5 presents some background data on their characteristics as of 1996-1997. The typical president in our sample began his or her presidency at age 48 and had been in the position for over eight years. About 15% of the presidents were members of the clergy; they are found most often in comprehensive institutions. About 18% of the presidents were women, but the percentage of women presidents at research and doctoral institutions was only 8%. Finally one quarter of them had been president at least once before coming to their current position. We were able to identify the institution of the prior presidency for 57. Almost three-quarters of the prior presidencies were at other private, primarily four-year institutions. The other quarter of prior presidencies were at individual public campuses or statewide public systems. Among the presidents who had previously held public presidencies were the presidents of three Ivy League institutions. Each of these three had previously been a president at a Big Ten institution.

ANALYSES OF PRESIDENTS' SALARY AND COMPENSATION LEVELS

What might be hypothesized to determine the salary and compensation level⁵ of an American private college or university president? On the one

⁵The empirical models in this section are similar in spirit to those found in Boulanger and Pliskin (1999) who use presidents' compensation data for 1995-1996 obtained from the *Chronicle of Higher Education*.

hand, we hypothesize that certain characteristics of the president will be influential, including years in the position, whether the president held a prior presidency, and, if so, the number of years 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 are often presidents of religiously 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 influence the president's responsibility include size (measured by enrollments), complexity (as measured by institutional type), and the level of research volume (for research and doctoral institutions). 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. We project that this last variable is important because the academic selectivity of an institution affects its 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 financial 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 1992–1993 to 1996–1997 period. With slightly more than 400 presidents per year and five years of data, we have more than 2,000 observations. The explanatory variables in the model include the president's age, gender, tenure in position, whether he or she held a prior presidency, tenure at the prior presidency, and 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.⁶ 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 nonreporting many of the included variables. For the source of each variable, see the Data Appendix.

It is plausible to hypothesize that doctoral and research universities are more difficult to lead than comprehensive universities, which are in turn

⁶Interestingly, endowment per student and annual fund-raising level per student are not very highly correlated across institutions in the sample.

TABLE 6
PRESIDENT SALARY AND COMPENSATION EQUATIONS,
1992–1993 TO 1996–1997 SAMPLE
 (absolute value t-statistics)

	(1)	(2)	(3)	(4)	(5)
Age	0.0001 (0.1)	0.0011 (0.8)	0.0010 (0.8)	0.0004 (0.4)	0.0000 (0.0)
Female	-0.0076 (0.5)	0.0176 (1.0)	0.0008 (0.1)	-0.0105 (0.7)	0.0145 (0.8)
Seniority	0.0058 (5.1)	0.0075 (5.5)	0.0051 (4.5)	0.0063 (5.3)	0.0067 (5.9)
Prior presidency	0.0054 (0.3)	-0.0100 (0.5)	0.0270 (1.3)	0.006 (0.3)	10.0048 (0.2)
Years at prior presidency	0.0057 (2.1)	0.0070 (2.4)	0.0042 (1.5)	0.0056 (2.1)	0.0065 (2.3)
Clergy	-0.1938 (10.1)	-0.2163 (9.9)	-0.1741 (8.7)	-0.1962 (9.7)	
Professor average salary	0.4896 (3.5)	0.4347 (3.0)		0.4675 (3.2)	0.4727 (3.1)
Endowment per student	0.0313 (3.6)	0.0424 (4.3)	0.0497 (6.9)	0.0329 (3.6)	0.0345 (3.9)
Gifts per student	0.0021 (0.5)	0.0037 (0.6)	0.0011 (0.3)	0.0016 (0.4)	0.0064 (1.6)
Enrollment	0.1415 (7.1)	0.1569 (7.0)	0.1890 (15.5)	0.1401 (6.8)	0.1494 (7.0)
Freshman test scores	0.0002 (2.2)	0.0003 (2.3)	0.0006 (7.3)	0.0003 (2.4)	0.0002 (1.6)
R&D expenditures	0.0138 (1.3)	0.0071 (0.6)	0.009 (0.8)	00.0147 (1.3)	0.0112 (1.0)
Research/doctoral university	0.1245 (2.5)	0.1311 (2.2)	0.1487 (3.2)	0.1322 (2.6)	0.1315 (2.6)

TABLE 6 (CONTINUED)

Comprehensive university	0.0154 (0.9)	0.0190 (0.9)	0.0129 (0.7)	0.0222 (1.3)	0.0196 (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
^aall 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.

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 about which their presidents must be concerned that presidents of comprehensives do not face. The multiplicity of programs present at the comprehensives, as compared to the liberal arts colleges, may make being president of the comprehensives 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% higher salaries a year for each year of tenure in their current position and 0.5% higher salaries for each year of tenure in a prior presidency.⁷ Clergy presidents 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% increase in the president's salary.

The estimated coefficients also suggest that presidents of research and doctoral universities receive salaries that are about 12% higher, other variables held constant, than their colleagues at other institutional types. However, presidents of comprehensive universities do not appear to receive a

⁷We experimented with including quadratic terms in current and prior tenure to allow for diminishing returns to tenure, but these variables' coefficients never proved to be statistically significant.

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 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* starting only in 1993–1994. 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 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 clergy presidents 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 reestimated our basic model for each institutional type, first including and then excluding average faculty salaries from the equations. The estimated coefficients from these models are available in an earlier version of our paper (Ehrenberg, Cheslock, & Epifantseva, 2000).

The estimates of these models suggest that it is important to stratify the data by institutional type when analyzing presidents' salaries. Remembering that all findings 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% less than male presidents at comprehensive universities, but about 3.5% more than male presidents at liberal arts colleges. 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. 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 presidents; however, only tenure on the current job matters for liberal arts college presidents. Increases in endowment per student have the largest impact on presidents' salaries at liberal arts colleges, but increases in incoming first-year student 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. Substituting federally funded research and development expenditures for this measure in the model yielded a similar positive relationship.

ANALYSES OF PRESIDENTS' SALARY AND COMPENSATION CHANGES

Interesting though 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: (a) the total rate of return on the institution's endowment, (b) the fraction of the endowment value that the institution spends each year (its "spending rate"), (c) the total level of gifts to the institution in a year, and (4) the fraction of those gifts which is 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; the president has little influence over these factors. Similarly, the

institution's trustees determine the "spending 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. Tying a president's salary increases to growth in the endowment would provide him or her with an incentive to skimp on capital projects and to not earmark annual gifts for 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 by 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 (Fisher & Koch, 1996). Hence we expect the performance-compensation relationship to be stronger than the performance-salary relationship.

However, teasing out any relationships that exist between presidents' salary or compensation changes and their "performance" is not 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 1997–1998 was a liberal arts college president who received a hefty retirement package in recognition of twenty 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 (Burd, 1999). 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 1997–1998 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 (Burd, 1999).

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 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 reward 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 relationship between compensation changes and performance.

The results of our efforts to estimate such a relationship appear in Table 7. Its estimates are based on the sample of presidents who remained in the same position between academic years 1992–1993 and 1996–1997 when salary changes are analyzed and 1993–1994 to 1996–1997 when compensation changes are analyzed. In Column 1, the logarithm of the president’s salary in 1996–1997 minus the logarithm of his or her salary in 1992–1993 (a measure of percentage salary change over a four-year period) is specified to depend upon the type of institution that he or she leads, as well as 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 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. Analyses further 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. While there is a positive association between presidents’ salary growth and the growth in annual giving at institutions, this relationship is not statistically significant. Institutional type per se does not appear to be associated with salary growth. We also estimated presidents’ annual salary change equations using annual measures 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.

The estimates in Column 1 are for a model that permits the personal characteristics that were assumed to influence presidents’ salary levels in Table 6 to also influence presidents’ salary changes. These characteristics are “dated” as of 1992–1993. Presidents with more seniority in their position received larger salary increases during the period than presidents with less seniority. Presidents who had held a previous presidency received smaller

TABLE 7
PRESIDENTS' SALARY AND COMPENSATION CHANGE EQUATIONS^a
1992–1993 TO 1996–1997 SAMPLE
 (absolute value t-statistics)

	(1)	(2)	(3)	(4)	(5)
Age	0.0006 (0.3)	0.0011 (0.6)	0.0007 (0.4)	0.0014 (0.6)	0.0003 (0.1)
Female	0.0325 (1.0)	0.0320 (1.1)	0.0341 (1.1)	0.0391 (1.2)	0.0351 (1.0)
Seniority	0.0041 (1.8)	0.0000 (0.0)	0.0043 (1.9)	0.0041 (1.8)	0.0058 (2.6)
Prior presidency	-0.0980 (2.1)	-0.0483 (1.2)	-0.0950 (2.0)	-0.0973 (2.2)	-0.1048 (2.2)
Years at prior presidency	0.0088 (1.5)	0.0056 (1.1)	0.0096 (1.6)	0.0090 (1.6)	0.0095 (1.6)
Clergy	-0.0913 (2.5)	-0.0368 (1.0)	-0.1038 (2.9)	-0.1030 (2.9)	
Professor average salary	0.4677 (3.2)	0.1438 (0.9)		0.4596 (3.1)	0.2096 (1.4)
Endowment per student	0.0325 (1.0)	0.0000 (0.0)	0.0339 (1.1)	-0.0304 (0.9)	0.0614 (1.9)
Gifts per student	0.0417 (1.5)	-0.0003 (0.0)	0.0411 (1.4)	0.0589 (2.0)	0.0312 (1.1)
Enrollment	0.1540 (2.1)	-0.0036 (0.1)	0.1817 (2.5)	0.1310 (1.9)	0.1170 (1.6)
Freshman test scores ^b	0.0002 (0.1)	0.0000 (0.0)	0.0010 (0.3)	-0.0003 (0.1)	0.0023 (0.8)
R&D expenditures	0.1941 (2.9)	0.2425 (4.2)	0.1951 (2.8)	0.1912 (2.9)	0.2098 (3.2)
Research/doctoral university	-0.0741 (0.9)	0.0078 (0.1)	-0.0565 (0.7)	-0.0759 (0.9)	-0.0583 (0.7)

TABLE 7 (CONTINUED)

Comprehensive university	0.0188 (0.7)	0.0268 (1.1)	0.0212 (0.8)	0.0170 (0.7)	0.0298 (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 1992–1993 to 1996–1997, salary is dependent variable; (2) includes all presidents who remained at the same institution from 1993–1994 to 1996–1997, 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.

^aAlso 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

^bCoefficient has been multiplied by 10.

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 by 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 1993–1994), in fact the opposite is true. We are less successful in explaining presidents’ compensation changes than we are in explaining their salary changes. When we estimated the presidents’ salary change equation for the shorter period, its fit was somewhat poorer than that of the model (Table 1) but still better than that of the compensation equation. 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 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. Moreover, increases in the level of external gifts per student are now seen to be significantly positively related to the presidents’ salary increases.

Finally in Column 5 we exclude clergy presidents, only marginally changing the remaining coefficients of the model.

We also estimated presidents' salary-level change equations with the data stratified by institutional type. The estimated coefficients of these equations are again available in the earlier version of our paper. These estimates suggest that 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 presidents' salary changes at comprehensive institutions are associated with their institutions' enrollment growth over the period. However, none of our other performance measures proves significant.

CONCLUDING REMARKS

Taken together, our results provide only weak support for the hypothesis that presidents' salary and compensation changes are related to our measures of their institutions' performance. Somewhat surprisingly, freshman test score changes are not associated with presidents' 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 fundraising 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. Similarly, our excluding from our analyses other measurable variables (such as the football team's record) and less easily measured variables (such as the president's relationship with the board), added to our difficulty.

Our salary and compensation change analyses are for a sample of presidents who remained 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, the 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.

DATA APPENDIX

Compensation Data

We use college presidents' 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 worked only 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 "1" 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

The *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-time students as one-third. Both undergraduate and graduate students are included.

Endowment per Student

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

Professors' Average Salary

We compute professors' average salary from the *IPEDS Faculty Salary Survey* by summing the expenditures on assistant, associate, and full professors, then 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*. These data contain information on the average percentage of 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 change in average salary of professors in our analyses of presidents' salary changes because the AAUP data set does not contain continuous faculty salary change 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 added the 25th percentile of the verbal score with the 75th verbal, 25th math, and 75th math, then divided by 2. To compute one ACT score, we added the 25th and 75th percentile of the overall score and then divided by 2. We did not use test scores that are computed from less than 50% of an institution's first-year class. In our analysis, we used SAT scores whenever possible. For institutions with missing SAT

scores but complete ACT scores, we converted 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 took account of the recentering in our conversion.

Research and Development Expenditures

The National Science Foundation (NSF) *Survey of Research and Development Expenditures* provided data on total research and development expenditures. We used this variable only 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 1994–1995 presidential compensation data, we used the endowment value as of July 1, 1994, the enrollment data from fall 1993, the first-year student test score data from fall 1993, and the research and development data for the 1993–1994 academic year. We used the same pattern of timing with presidential compensation data for the other years.

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