Presidential Compensation in Public Higher Education Institutions: Is There Pay for Performance?

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ABSTRACT

This paper discusses the theoretical background of the pay-for-performance incentive as well as its implication for administrators in higher education institutions. Using pay data of a large state university system in the U.S., the paper finds that presidents in public research universities receive significantly higher pay than their counterparts in comprehensive or liberal arts colleges. Presidential pay in public colleges is also positively related to college ranking, admission selectivity, and student entrant exam scores, and is higher on larger campuses as well. In addition, newly hired presidents earn more than their peers remaining in the post. We conclude the paper by discussing hidden costs of rewarding college administrators based on campus performance as well as policy implications of such a compensation design.

Introduction

Whether the public sector and non-for-profit organizations need to become more business oriented in their operations is a trendy topic. Over the past decades, such reforms as budgeting techniques, benefit and cost analysis, and performance management have been introduced to the administration of public sectors. It has been argued that linking public administrators' pay to the performance of their organizations is crucial for motivating public service employees and improving public sector management (Moynihan et al., 2005, 2011). Ms. Linda Springer, the former Director of the U.S. Office of Personnel Management, stated in her Senate Committee testimony that pay for performance had a positive impact on the federal government because it provided government agencies with the ability to recruit and retain top talents by rewarding better performers with greater pay (Springer, 2008). Similarly, recent OECD reports also suggest that public sector and non-for-profit organizations are more likely to improve their performance by adopting the same evaluation and compensation methods of successful private firms who reward better performers using differentiated and higher pay (OECD, 2008, 2012). This trend likewise has become more acceptable in the field of higher education and it has been widely advocated that modern universities can benefit from learning governance mechanisms of the private sector (Henze, 2010, Shattock, 2006, 2012).

In this paper, we first discuss the theoretical background of the pay-for-performance incentive design and review extant literature on the determinants of administrator pay in higher education institutions. We then present new evidence on the compensation of public college presidents using presidential pay data of a large U.S. state university system-the State University of New York. We conclude the paper by discussing hidden costs of rewarding college administrators based on campus performance as well as policy implications of such a compensation design.

Literature Review

The rationale behind pay-for-performance in the private sector is grounded in agency theory in economics (Fama & Jensen, 1983; Jensen & Meckling, 1976). Agency theory argues that the separation of ownership and control in modern corporations gives rise to the agency problem, where shareholders (the principal) delegates the decision-making right to management (the agent) but the latter

may not necessarily act in the best interests of the former due to conflicts of interest between these two parties. To mitigate the agency problem and to better protect shareholders' interests in their invested firms, shareholders could directly monitor management's activities through corporate boards or by themselves. However, because shareholders and boards of directors are not engaged in day-to-day management of the company and typically do not possess complete information that managers have about the firm, they are often unable to closely monitor managerial behaviors and evaluate managerial decision-making. Another important internal corporate governance mechanism is pay for performance incentives. By linking managerial compensation to firm performance, corporate managers will be motivated to improve firm value since it is for their own personal interests as well. In this regard, pay for performance supplements deficiency in direct monitoring to align interests of management with those of shareholders. Under such a rationale, pay for performance incentives have been widely implemented in the corporate world to reward top executives and key employees in for-profit companies (Murphy, 2013).

Recognizing the effectiveness of pay for performance incentives in the private sector, a growing number of researchers suggest introducing the same concept to the public sector to help better align public leaders' interests with key stakeholders of their organizations (Binderkrantz & Christensen, 2011, Langbein, 2010). Such an advocate is particularly salient in case of higher education. Langbert (2006), for example, explicitly advocates that university trustees should seriously consider linking university presidents' pay with the performance of their institutions so as to enhance the quality of higher education. In spite of such an advocate, empirical evidence on the determinants of university administrators' compensation, particularly whether campus performance is a key driving factor in the compensation design of higher education leaders, is rather limited. In addition, the majority of these studies have been conducted using compensation data of private universities while public higher education institutions are often excluded from the studies, since private institutions bears more similarity with for-profit companies.

Several common themes emerge from these studies. First, extant literature documents a consistent size effect for presidential pay. Universities with more students, more full time faculty, and larger campus budgets are all associated with higher presidential pay (Bartlett & Sorokina, 2005; Ehrenberg et al., 2001; Monks & Mcgoldrick, 2004; Langbert, 2006; Langbert & Fox, 2013). These studies also note that types or tiers of universities matter. Presidents in research universities are found to receive significantly higher compensation than their counterparts in Master's and liberal arts institutions (Tang, et al., 2000; Monks & Mcgoldrick, 2004; Langbert, 2006; Langbert & Fox, 2013). Individual characteristics of these presidents also affect their pay level. For example, Monks & Mcgoldrick (2004) documents a gender pay gap, with compensation of female administrators being 13% lower than that of male administrators, while such results are not confirmed by other studies (e.g., Ehrenberg et al., 2001; Monks, 2007). Bartlett & Sorokina (2005) finds that presidents with longer tenure receive higher pay. Similar findings are echoed by Langbert & Fox (2013) which also show that externally recruited presidents are paid more than those promoted from within. Importantly, there is some evidence of pay for performance in higher education institutions. Institutional performance measured by the college's overall academic ranking, freshmen quality captured by average entrant exam scores, and campus endowment amounts are all found to be positively associated with compensation of private college presidents (Tang et al., 2000; Ehrenberg et al., 2001; Monks, 2007; Langbert & Fox, 2013).

Within the limited studies using presidential pay data of both public and private universities, a significant pay gap between administrators in public universities and private universities is recognized. An earlier study conducted by Pfeffer & Ross (1988) finds that college presidents in public research universities on average receive 35% less compensation than their counterparts in private institutions. Consistent with this study, Ehrenberg et al. (2001) also identifies a private presidential earnings premium of 33% to 34% using a more comprehensive survey sample covering colleges in all ranks. Using data from the *Chronicle of Higher Education*, Monks (2007) calculates the public-private gap to be as high as 49%. The significant public-private pay gap could be attributed to systematic differences in compensation decision processes of these two types of universities. Unlike boards of trustees in private universities who often rely on the "invisible hand" of the labor market to determine presidential pay, administrators in public higher education institutions are state employees, whose compensation packages are strongly influenced by the "grabbing hand" of the government and subject to various state regulations and public scrutiny.

Alongside this widely recognized public-private pay gap, what affects pay differential among public higher education institutions? Specifically, do public universities reward their presidents based on campus performance? The objective of this paper therefore is to supplement extant literature on compensation of private college administrators to provide additional evidence on the determinants of presidential pay in public higher education institutions. We investigate whether the same factors identified by studies of presidential pay in private institutions influence presidential pay in public higher education institutions.

Data and Variables

To control for the influence of regional regulatory differences in setting state employee compensation, we adopt an intrastate instead of an interstate sample. Our sample consists of 26 campuses offering Bachelor and more advanced degrees in a large U.S state university system, the State University of New York (SUNY). Community colleges providing associate degrees are excluded from our sample. We also exclude two state-owned medical schools providing doctoral education and medical services due to specificity of these institutions. All these campuses are managed by the same governing body, the Board of Trustees of SUNY that consists of 18 members with 15 of whom appointed by the Governor with consent of the New York State Senate. We collect presidential pay information from *SeeThroughNY.NET*, which regularly publicizes annual payroll information of all New York State public employees. Pay data on 2011 compensation were collected. It should be noted that although longitudinal pay information is available, there is very little pay variation across years for college presidents remaining in the post. Using one campus as an example, the presidential pay in this campus remains at the level of $215,000 for 2009, 2010, 2011, and has a $10,000 increase to the level of $225,000 in 2012 and stays the same at $225,000 in 2013. In the meantime, there are also very limited temporal changes in campus size and performance. As a result, we use cross-sectional data on 2011 to conduct our analysis and focus on between-sample instead of within-sample differences. That is, we investigate what factors affect differences in presidential pay across SUNY campus governed by the same Board of Trustees. We collect size and performance information of these campuses from the *Princeton Review 2011* and the *U.S. News & World Report of Best Colleges 2011*. We also supplement our data with demographic information of these presidents collected from campus websites.

Our dependent variable is annual salary of college presidents (denoted as *Presidential Pay*). We measure campus performance in the following four ways following prior literature. Frist, we capture performance using research outputs of these campuses. The SUNY system has three tiers of campuses engaging in undergraduate education. The first tier is the University Center, which is a research focused institution offering doctoral degrees. The second tier is the Comprehensive College, which is a balanced institution offering both Masters' and Bachelors' degrees. The third tier is liberal arts colleges concentrating on undergraduate education. We subsequently create three dummy variables, *Center, Comprehensive,* and *College*, to indicate types and research outputs of these campuses. The second type of performance measure is admission selectivity of these campuses, which is captured using *admission rating* (ranging from 1 to 100) reported by *U.S. News & World Report*. We next use quality of incoming students as a proxy of campus performance, measured using 75 percentile of incoming freshmen's SAT scores (denoted as *SAT 75*). Finally, we measure campus performance by whether the campus is identified as one of the Best Colleges in the *Princeton Review*. We create a dummy variable, *Princeton Best*, which is set to one when the college is included in the list and zero otherwise. Apart from performance measures, we also control for other factors that may affect presidential pay. First, we control for the history of the campus calculated as 2011 minus the college's founding year and plus one (denoted as *History*). We also control for campus size using the number of fulltime faculty (denoted as *Faculty Number*), the number of total student enrolment (denoted as *Student Number*), and the student to faculty ratio. We also include demographic information of these presidents, including *gender*, *age*, and *tenure*. We create a dummy variable, *Professional*, to capture these presidents' professional background, which is equal to one if the president holds a J.D or a M.D degree and zero otherwise (Ph.D). Finally, to capture the influence of turnover on presidential pay, we include a dummy variable, *Newly Appointed*, to indicate whether this is the first year of the president's tenure and zero otherwise.

Empirical Results

Table 1 reports mean, median, minimum, and maximum values of our key variables. Table 1 suggests that a college president in our sample on average earns a salary of $226,431 (mean) with the median being $206,500. Fifteen percent of our sample institutions are research-oriented universities offering doctoral degrees, 50% are comprehensive colleges offering masters' and bachelors' degrees, and 35% are liberal arts colleges focusing on undergraduate education. The mean admission rating of our sample universities is 77 out of 100. The average 75 percentile SAT scores for incoming freshmen is 1143, with the median being 1160. Twenty-three percent of our sample colleges are listed as Princeton Review's Best Colleges. An average college in our sample is 116 years old, has 303 full time faculty, and 6,322 students. The average student to faculty ratio is 23.41. Sixteen percent of presidents in our sample are female and 19% own a professional degree such as JD or MD instead of a PhD. An average college president is 64 years old and has been in the post for 7 years.

Table 1
Descriptive Analysis of Key Variables

	Mean	Median	Minimum	Maximum
Presidential Pay	$226,431	$206,500	$176,000	$400,000
Research University	0.15	0	0	1
Comprehensive Colleges	0.50	1	0	1
Liberal Arts College	0.35	0	0	1
Admission Rating	77.00	80	60	94
SAT 75	1143.27	1160	900	1380
Princeton Best	0.23	0	0	1
History	116.11	113	40	195
Faculty Number	302.85	246	70	1209
Student Number	6321.92	5408	1541	19149
Student Faculty Ratio	23.41	21.29	10.55	75.75
Female	0.16	0	0	1
Professional	0.19	0	0	1
Age	64	64	51	79
Tenure	7.12	5	1	19

Table 2 reports the correlation matrix of key variables used in our analysis. Table 2 indicates that presidential pay has a significant positive association with campus size as measured by the number of students and the number of faculty members. Importantly, we observe consistent evidence of pay for performance. First of all, presidents in research universities with higher research outputs receive significantly higher pay than their counterparts. Presidential pay is also significantly higher at colleges appearing on the Princeton Review's Best College list. In addition, colleges with higher admission ratings and higher incoming freshmen SAT scores are associated with significantly higher presidential pay. Table 2 also reveals that presidents with professional degrees and newly hired presidents are associated with significantly higher pay.

Table 3 presents univariate analysis to illustrate the existence of pay for performance for administrators in public higher education institutions. We first classify our sample into high performance and low performance subgroups using all four performance measures identified above: 1) whether the college is research intensive; 2) whether the college has above average admission selectivity rating; 3) whether the college has above average freshmen quality captured by entrant exam scores; and 4) whether the college is listed as one of the Best Colleges by the *Princeton Review*. Table 3a presents mean salary of high performance versus low performance campuses, salary differences between these two subgroups, as well as t-statistics and statistical significance based on a 2-tailed t-test. We can tell from table 3a that presidents in research universities with larger research outputs on average earn $355,000 per year, while presidents in non-research universities make $203,054 per year, significantly lower than the former subgroup. In addition, presidents in campuses with above-average student selectivity ratings earn $257,354 per year, while their counterparts' annual salary is significantly lower at the level of $195,508. When evaluated by student quality, college presidents in campuses with above-average freshmen entrant exam scores earn $252,257 per year. In contrast, their peers in campuses with below-average student entrant exam scores earn significantly lower salaries at the level of $196,300 per year. Finally, presidents in colleges identified as Best Colleges by the *Princeton Review* make $307,333 per year, while presidents not on the list make $202,160 per year. The difference is again statistically significant at the 0.01 level.

We next create an aggregate index variable Performance Index to capture college performance by adding up these four performance indicators. Briefly speaking, the Performance Index is a categorical variable ranging from 0 to 4. A value of 0 suggests the campus is not a research intensive college, it has below average student selectivity, below average student quality, and it does not appear on the *Princeton Review's Best Colleges* list either. In contrast, a value of 4 indicates the campus is not only research intensive, but also has above average student selectivity rating and above average student entrant exam scores, as well as being one of the Best Colleges identified by the *Princeton Review*. Table 3b reveals mean, median, and the range of presidential salary for each performance category. We can tell that mean and median values of presidential salary gradually increase with performance index except for tier

Table 2
Correlation Matrix of Key Variables

Variables	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]
Presidential Pay (1)	1.00											
History (2)	0.03	1.00										
Student Size (3)	0.73*	0.03	1.00									
Faculty Size (4)	0.93*	0.22	0.84*	1.00								
Research Univ. (5)	0.92*	0.05	0.61*	0.84*	1.00							
Comprehensive (6)	-0.31	0.33	-0.05	-0.19	-0.46*	1.00						
Princeton Best (7)	0.69*	-0.14	0.63*	0.65*	0.66*	-0.34	1.00					
SAT 75 (8)	0.39*	0.12	0.38*	0.40*	0.24	0.27	0.61*	1.00				
Admission Rating (9)	0.47*	0.19	0.45*	0.47*	0.29	0.30	0.61*	0.92*	1.00			
Female (10)	-0.17	0.08	-0.18	-0.18	-0.19	0.01	-0.22*	0.02	0.02	1.00		
Professional (11)	0.39*	0.10	0.19	0.35	0.43*	-0.16	0.36	0.14	0.27	0.03	1.00	
Newly Appointed (12)	0.44*	0.08	0.39*	0.42*	0.34	-0.19	0.28	0.24	0.25	0.12	-0.22	1.00
Tenure (13)	-0.36	-0.01	-0.39*	-0.39*	-0.38	0.16	-0.13	-0.02	-0.06	0.09	-0.06	-0.45*

*Significant at the 5% level or above.

Table 3
Univariate Analysis of Pay for Performance

3a: Separate Performance Measures

Campus Performance	High Performance	Low Performance	Difference	t Statistics
Research Outputs	355,000	203,054	151,946	12.15***
Program Selectivity	257,354	195,508	61,846	3.01***
Student Quality	252,257	196,300	55,957	2.62**
Best College	307,333	202,160	105,173	5.55***

***significant at the 0.01 level,
** significant at the 0.05 level,
* significant at the 0.10 level.

3b: Aggregate Performance Measure

Performance Index	Mean	Median	Minimum	Maximum
0	195,509	193,600	176,000	225,000
1	198,667	196,000	195,000	205,000
2	216,100	217,500	205,000	225,000
3	212,000	212,000	209,000	212,000
4	355,000	370,000	280,000	400,000

3. The pay difference is particularly salient when comparing the top tier (colleges with a performance index rating of 4) with the bottom tier (colleges with a performance index rating of 0). For example, presidents in tier 0 on average earn $195,509 per year, while the presidential pay almost doubles for tier 4 and reaches the level of $355,000 per year.

Because presidential pay may also be affected by other confounding factors such as campus size, history, and demographic background of presidents, we next conduct a multivariate analysis using the ordinary least squares (OLS) method and present our results in Table 4. To be consistent with prior compensation literature, we use log value of presidential pay as the dependent variable. Since measures of institutional performance are highly correlated with each other and may cause a multicollinearity problem if entering together in the regression, we first enter each performance variable separately in columns 1, 2, 3, and 4 of Table 4 respectively. We then enter these four measures jointly in column 5 and replace these four measures with our aggregate Performance Index variable in column 6. In addition, because both size measures, faculty number and student number, are highly correlated as well, we

include faculty number and the student to faculty ratio in the regression models.

Table 4 suggests that presidential pay is significantly higher in research universities. In addition, the higher the admission rating, the higher the presidential pay. There is also modest evidence indicating a positive relationship between presidential pay and student entrant exam scores. No significant relationship is observed between the Best Colleges rating and presidential pay. In addition, we find a statistically significant relationship between the aggregate campus performance index and the level of presidential pay. Overall, our empirical results suggest that presidential pay is positively associated with campus performance in public higher education institutions.

Some of our control variables are also worth mentioning. First, we notice that presidential pay is positively related to the history of the college. There is also a consistent size effect as demonstrated by the positive relationship between the number of full-time faculty and the level of presidential pay. Table 4 also suggests that newly hired presidents

Table 4
Determinants of Presidential Pay in Public Higher Education Institutions

Performance Variables	(1)	(2)	(3)	(4)	(5)	(6)
Center	0.222**				0.267***	
	(0.084)				(0.079)	
Admission rating		0.004**			0.005*	
		(0.002)			(0.002)	
SAT Scores			0.003*		-0.000	
			(0.001)		(0.000)	
Princeton Best				0.069	-0.059	
				(0.058)	(0.056)	
Performance Index						0.045***
						(0.015)
History	0.000	0.001**	0.001**	0.001*	0.001*	0.001**
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Faculty Number	0.004***	0.006***	0.006***	0.001***	0.003***	0.005***
	(0.001)	(0.001)	(0.001)	(0.000)	(0.000)	(0.000)
Student/Faculty Ratio	0.000	0.001	0.001	-0.000	0.001	0.000
	(0.000)	(0.001)	(0.002)	(0.001)	(0.001)	(0.001)
Newly Appointed	0.098*	0.088	0.098*	0.094	0.083*	0.107**
	(0.049)	(0.051)	(0.054)	(0.059)	(0.043)	(0.047)
Tenure	0.003	0.001	0.002	0.001	0.003	0.000
	(0.003)	(0.003)	(0.003)	(0.004)	(0.003)	(0.003)
Female	-0.004	-0.006	-0.008	0.004	-0.011	-0.001
	(0.039)	(0.040)	(0.043)	(0.047)	(0.034)	(0.038)
Professional	0.057	0.037	0.058	0.051	0.027	0.020
	(0.039)	(0.043)	(0.044)	(0.049)	(0.039)	(0.041)
Constant	11.239***	10.058***	10.181***	10.801***	10.631***	10.683***
	(0.644)	(0.608)	(0.640)	(0.717)	(0.587)	(0.549)
Observations	26	26	26	26	26	26
R Square	0.939	0.936	0.928	0.920	0.965	0.945

Robust standard errors reported in parenthesis.
*** significant at the 0.01 level,
** significant at the 0.05 level,
* significant at the 0.10 level

receive significantly higher compensation than those remaining in the post. We do not identify a gender pay gap in our sample, and other demographic variables such as tenure and professional degrees do not have significant impact on presidential pay level either. Generally, our explanatory variables explain 92% to 96.5% of the variance in presidential pay.

Discussion and Conclusion

Using pay for performance in the public sector is a complicated issue (Binderkrantz and Christensen, 2011). First of all, quality and performance of an educational institution are reflected in many dimensions such as academic reputation, resource availability, student outcomes, curriculum and talent development (Astin, 1985). Performance measures applied in this study as well as those in extant literature may only capture a proportion of this comprehensive picture. In addition, goals for public sector organizations are complex and ambiguous (Rainey and Bozeman, 2000). Achieving all performance goals simultaneously is a comprehensive multi-tasking problem. Rewarding administrators for one instead of all performance measures may actually result in unproductive consequences. Langbein (2008), for example, shows that linking faculty pay raise with teaching evaluation results often leads to inflated grades on both the institutional level and the individual level. In a similar vein, Ehrenberg (2003) finds that although the *U.S. News & World Report* college rating system triggers universities to take actions to improve their overall rankings, some of these actions may not necessarily be in the best interest of the educational system as a whole. As a result, adopting a balanced score card approach may be more appropriate to evaluate performance of college administrators (Langbert, 2006).

Second, in a principal-agent framework presidents of public higher education institutions are agents of state legislators and governors. While individual colleges (the agents) value campus performance outcomes such as college ranking, research outputs, teaching quality, the political governing body (the principal) may care more about university revenues, endowments, and a balanced budget to cover costs due to its responsibility to taxpayers. Accordingly, from the principal's point of view, a college president who is good at increasing student enrollment numbers and raising funds for college endowments may be a better performer than a college president focusing on enhancing research outputs of the institution or setting higher college entrant standards, since efforts in the latter case may not necessarily lead to intended outcomes in the former case. Our results indicate that public higher institutions seem to reward their presidents in a similar way as their private counterparts by paying more for a larger campus, more for better research ranking, and more for higher entrant requirements. These results however do not necessarily imply these college presidents are actually doing what the political principals and taxpayers want. Therefore, the interests of the agent (college presidents) and the principal (state government and taxpayers) may still divert. Future studies could consider adopting different performance measures from the perspectives of state government and taxpayers to explore whether these alternative measures affect presidential pay in public higher education institutions.

Third, campus performance is not only difficult to measure but also hard to improve. The underlying premise behind pay for performance incentive is that managers can affect the outcomes of their organizations. As a result, linking managerial pay with organizational performance will create a strong incentive to motivate managers to work harder to improve organizational performance thus their own compensation as well. In the management field, Hambrick & Finklstein (1987) propose the concept of managerial discretion defined as a manager's latitude of action. According to their theory, managers in different industries face different external and internal contextual environments; they thus may possess various degrees of freedom to affect outcomes of their organizations. Although managers with greater discretion are able to exert stronger influence on their firms' outcomes, managers with low discretion may only have limited impact. In their examination of CEO compensation, Finkelstein & Boyd (1998) consequently document that the link between CEO pay and firm performance is weaker in industries with low managerial discretion, while is stronger in industries with high managerial discretion. They thus suggest the design of managerial incentives should take into account the magnitude of managerial discretion. In our case, if presidents of public higher education institutions only have limited influence on the performance of their institutions, i.e., their managerial discretion is rather low, imposing high-powered pay for performance incentives to link presidential pay with campus performance is not optimal and desirable because campus outcomes, no matter success or failure, are only remotely related to efforts and decisions of these college presidents. In this regard, whether imposing pay for performance in the design of presidential pay in public colleges is appropriate and desirable is conditional on the managerial discretion of these administrators to influence campus performance. In addition, some researchers in the public administration domain doubt the universal effectiveness of pay for performance and stress the effectiveness of this incentive mechanism is constrained by boundary conditions set by the organization's external and internal environment (Binderkrantz & Christensen, 2011; Moynihan, 2010;

Moynihan et al., 2011). For example, a meta-analysis conducted by Weibel et al. (2009) shows that although the general net effect of pay for performance in non-for-profit institutions is positive, such a relationship is moderated by task types and pay-for-performance only improves organizational performance in the case of non-interesting tasks, while it actually reduces performance in the case of interesting tasks. Examining contingency factors affecting the effectiveness of pay-for-performance in higher education institutions thus may be a valuable future research venue.

Apart from pay for performance, the level of presidential compensation may also be explained by the demand and supply conditions in the managerial labor market. For example, given both the number of potential candidates and the number of potential employers are relatively small in research intensive universities, higher compensation for presidents of these campuses may be the result of demand and supply conditions. On the one hand, the campus may have to pay more to compensate for more comprehensive job responsibilities in this type of institution. On the other hand, candidates possessing scarce human capital may be able to extract additional rent by demanding more for their positions. Future research therefore could explore how labor market conditions affect the level and change of presidential pay in higher education institutions. In addition, the cross-sectional feature of our study prevents us from establishing causality and solving the endogeneity problem. Future research could apply a panel data design or using a difference in difference method to better establish causality between presidential pay and campus performance.

Nevertheless, we generally believe linking university administrators' pay to the performance of their institutions could be an effective way to motivate these administrators to improve the quality of their institutions and the higher education system as a whole. However, such an incentive system needs to be carefully designed to reflect multiple dimensions of campus performance, to account for various needs of stakeholders, and to consider the magnitude of managerial discretion. With the prevalence of accreditation bodies to emphasize performance evaluation and accountability in higher education institutions, the pay-for-performance approach has received larger acceptance in the higher education system in recent years. We hope our paper can stimulate further conversation in this area.

Reference

Astin, A. (1985). *Achieving Education Excellence: A Critical Assessment of Priorities and Practices in Higher Education*. San Francisco, CA, Jossey Bass.

Bartlett, R. & Sorokina, O. (2005). Determinants of Presidential Pay at National Liberal Arts Institutions. *Review of Higher Education*, 29 (1): 53-68.

Binderkrantz, A, & Christensen, J. (2011). Agency Performance and Executive Pay in Government: An Empirical Test. *Journal of Public Administration Research and Theory*, 22: 31-54.

Ehrenberge R., Cheslock, J, & Epifantseva, J. (2001). Paying our presidents: What do Trustees Value? *Review of Higher Education*, 26 (2): 145-162.

Ehrenberg, R. (2003). Reaching for the Brass Ring: The U.S. News & World Report Rankings and Competition, *Review of Higher Education*. 26(2):145-162

Fama, E. & Jensen, M. (1983). Separation of Ownership and Control. *Journal of Law and Economics*, 26 (2): 301-325.

Finkelstein, S. & Boyd, B. (1998). How much does the CEO matter? The role of managerial discretion in the setting of CEO compensation. *Academy of Management Journal*, 41: 179–199.

Hambrick, D. & Finkelstein, S. (1987). Managerial discretion: A bridge between polar views of organizational outcomes. In Staw, B. & Cummings, L. (Eds.), *Research in Organizational Behavior*, 9: 369–406. Greenwich, CT: JAI Press.

Henze, R. (2010). Corporate governance: Can universities learn from the private sector? *Perspectives: Policy & Practice in Higher Education*. 14(3): 86-90.

Jensen, M. & Meckling, W. (1976). Theory of Firm–Managerial Behavior, Agency Costs and Ownership Structure. *Journal of Financial Economics*, 3 (4): 305-360.

Langbein, L. (2008). Management by Results: Student Evaluation of Faculty Teaching and the Mis-measurement of Performance. *Economics of Education Review*, 27 (4): 417-428.

Langbein, L. (2010). Economics, Public Service Motivation, and Pay for Performance: Complements or Substitutes? *International Public Management Journal*, 13: 9-23.

Langbert, M. (2006). How Universities Pay Their Presidents. *Academic Questions*, 19 (2): 67-81.

Langbert, M. & Fox, M. (2013). The Compensation of Private College and University Presidents. *Journal of Academic Administration in Higher Education*, 9 (2): 57-68.

Moynihan, D. & Pandey, S. (2005). Testing how management matters in an era of government by performance. *Journal of Public Administration Research and Theory*, 15:421–439.

Moynihan, D. (2010). A workforce of Cynics? The effects of contemporary reforms on public service motivation. *International Public Management Journal*, 13:24-34.

Moynihan, D., Fernandez, S., & Kim, S., LeRoux, K., Piotrowski, S., Wright, B., & Yang, K. (2011). Performance regimes amidst governance complexity. *Journal of Public Administration Research and Theory*, 21:141-155.

Monks, J. & Mcgoldrick, K. (2004). Gender Earnings Differentials among College Administrators. *Industrial Relations*, 43 (4): 742-758.

Monks, J. (2007). Public versus Private University Presidents Pay Levels and Structure, *Economics of Education Review*, 26(3): 338-348.

Murphy, K. (2013). Executive Compensation: Where We are, and How We Got There. Constantinides, G., Harris, M., & Stulz, R. (eds.), *Handbook of the Economics of Finance*. Chapter 4: 211-356, Elsevier Science North Holland.

OECD (2008). The State of the Public Service. Paris, France: OECD Publishing.

OECD, (2012). Public Sector Compensation in Times of Austerity. Paris, France: OECD Publishing.

Pfeffer, J. & Ross, J. (1988). The compensation of college and university presidents. *Research in Higher Education*, 29(1): 79-91.

The Princeton Review. (2011). *The Princeton Review's Best College Newspapers*, The Princeton Review, Inc. Princeton, NJ.

Rainey, H. & Bozzman, B. (2000). Comparing public and private organizations: Empirical research and the power of the a priori. *Journal of Public Administration Research and Theory*, 10: 447-469.

Shattock, M. (2006). *Managing Good Governance in Higher Education*. Berkshire, Open University Press.

Shattock, M. (2012). University governance: An issue for our time. *Perspectives: Policy & Practice in Higher Education*. 16(2): 56-61.

Springer, L. (2008) Pay for Performance in the Federal Government. Testimony to the 110th Congress. Accessed through: www.hsgac.senate.gov/download/springer-testimony-payforperformance-072208

Tang, T., Tang, D. & Tang, C. (2000). Factors Related to University Presidents' Pay: An Examination of Private Colleges and Universities. *Higher Education*, 39 (4): 393-415.

U.S. News & World Report of Best Colleges (2011): accessed through: colleges.usnews.rankingsandreviews.com/best-colleges.

Weibel, A., Rost, K. & Osterloh, M. (2010). Pay for performance in the public sector-Benefits and (hidden) cost. *Journal of Public Administration Research and Theory*, 20:387-412.