

STATE RANKINGS OF COST OF LIVING ADJUSTED FACULTY COMPENSATION

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ABSTRACT

In this paper we rank states based on higher education faculty compensation. Data on 574 universities across each of the 50 states and the District of Columbia are aggregated to develop a state compensation average. The analysis examines states both on a raw basis and on a cost of living adjusted basis. Rankings are reported for various academic classifications of faculty. Rankings based on salary data alone and salary and benefit combined data are presented. The results indicate that rankings of states based on raw and cost of living adjusted data are markedly different. The results suggest that faculty seeking employment opportunities should carefully consider cost of living issues. Administrators should design salary packages that reflect the local cost of living conditions in their area to attract quality faculty.

JEL: J31, J44

KEYWORDS: cost of living, ranking, faculty compensation, higher education salaries

INTRODUCTION

Faculty in the academic job market are well aware of differing salaries paid by various higher education institutions. They should also be aware that institutions have, sometimes dramatically, different benefit packages. It is also important the applicant be aware that cities differ, sometimes substantially, in the cost of living. The job applicant must aggregate all of these factors and others to determine the optimal employment offer. Similarly, administrators and legislators must develop compensation plans that optimally balance compensation with the quality of faculty desired. Failure to effectively balance this tradeoff can result in a less than optimal faculty mix.

The impact of differential costs of living on the value of salaries has been the subject of a number of studies dating to a book authored by Viva Boothe (Boothe, 1933). The first known journal article on the issue was by Winakor (1943). Fournier and Rasmussen (1986) ranked states based on the salaries that they pay to their professors. They complete rankings on a raw salary basis as well as on a cost of living adjusted basis. They find that state rankings of salaries in public education change substantially when salaries are adjusted for purchasing power differences.

This paper is one in a series of three papers. Jalbert, Jalbert and Hayashi (2010) examine individual university rankings for doctorate, master and bachelor degree granting universities. Jalbert, Jalbert and Hayashi (2010b) also examine COLA salary. This paper focuses on community college data. This paper is limited to an examination of aggregated state data and examines only universities that confer doctorate, master or bachelor degrees.

This paper extends the work of Fournier and Rasmussen (1986) by using a more recent data set. In this paper, the authors rank states based on salaries paid to college and university faculty. Rankings are provided for raw salaries as well as for cost of living adjusted salaries. In addition, the value of benefits is analyzed. The results clearly indicate that cost of living adjusted salaries differ widely from raw salary figures. States rank dramatically different on a raw basis and on a cost of living adjusted basis. Statistical

tests show that these differences are not random. The results of this research will help faculty identify the best employment opportunities, and administrators to optimally plan employee compensation packages.

The remainder of the paper is organized as follows. In the following section we present the literature on the relative salaries of faculty. Next, we provide a discussion of the data and methodology utilized in the study. State rankings and analysis are provided in the results section. The tests statistics section contains evidence from the statistical analysis. The paper closes with some concluding comments and suggestions for further research.

LITERATURE REVIEW

Ong and Mitchel (2000) examined cost of living adjusted (COLA) salaries at institutions from several countries. They use the Big Mac cost index and purchasing power parity to compute COLA salaries paid to faculty in each country. The Big Mac index compares the cost of a McDonald's restaurant, Big Mac Sandwich at locations throughout the world. The results indicate that COLA salaries vary substantially across countries. On a COLA basis, Hong Kong and Singapore pay the highest salaries. The United States ranks in the midway in the ranking.

Zeglen and Tesfagiorgis (1993) examined salaries paid to full professors. They examined one doctoral granting institution from each of the fifty United States. The institution examined from each state is generally the state's flagship university. Data from the 1991-1992 American Association of University Professors survey are examined after controlling for geographic differences, cost of living differences and tax burdens. The authors found that faculty salary rankings across institutions, and states, differ substantially when adjustments are made for both cost of living and tax differences. Rankings were more affected by cost of living differences than by the other factors considered.

Stoddard (2005) examined how COLA salaries of high school and elementary school teachers differ across states. She argues that studies examining COLA salaries do not account for differences in location quality. She argues that some locations possess better amenities and opportunities, which should be taken into account when comparing salaries. She found that location quality adjusted salaries produce more accurate salary comparisons. She also examined the relationship between student test scores and salaries as well as the relationship between salaries and dropout rates. She found that adjusting salaries for cost of living differences versus location quality adjusted salaries produce significantly different state rankings. Jalbert and Mason (2007) also describe difficulties that can arise when ranking states. When examining the desirability of states as a place to conduct business, they demonstrate that variations in the ranking methodology used can have large impacts on the resulting rankings. In their sample, a simple change in the way dummy variables were coded resulted in states changing rankings by as many as 38 places.

Alexander (2001) examined American Association of University Professors data from 1979-1998. He examined raw salaries, unadjusted for cost of living differences, to identify differences between compensation at public and private universities. Data for 139 public universities are compared to that of 75 private universities. The universities analyzed are all research and doctorate granting. He found that private institutions have both higher salaries and benefits relative to their public counterparts. Moreover, public institutions have become less competitive on the basis of salary and benefits over time. Many other authors have documented the declining competitiveness of public universities including Bell, 2000, Hamermesh, 2002, Zogni 2003, and Ehrenberg, 2003.

Related to faculty compensation is the extent to which faculty supplement their compensation with consulting and other external activities. To the extent that professors earn supplemental income, and there is variation in these earnings across states, direct or cost of living adjusted salary comparisons may be biased. Marsh and Dillon (1980) found that on average faculty supplement their income with external

activities by about 15 percent. They note that at least part of this income is earned during non-duty periods by faculty who are on nine-month appointments.

This paper extends the literature on several fronts. First, this research provides a comprehensive ranking of states based on COLA salaries and benefits. This study is the only known study to have computed any such ranking of states in recent years. This study also extends the literature by ranking not only doctorate granting institutions, but also master and bachelor degree granting institutions. The analysis continues with a discussion of the data and methodology used in the paper.

DATA AND METHODOLOGY

Data on the salaries of faculty at U.S. institutions were obtained from the 2008 special salary issue of *NEA Higher Education Advocate*. The data includes salary information by academic rank. The data is categorized by the highest level of degree offered by the institution. Schools are classified as AA, BA, BA+ and D, indicating associate degree, bachelor degree, master degree and doctorate degree respectively. The data are further classified by state. To limit the study to a manageable size, those universities listed as offering associate degrees are eliminated from the study. These universities will be examined in a separate study.

Five hundred ninety one schools are listed in the NEA dataset that offer a bachelor, master or doctorate level degree. While listed in the NEA dataset, seventeen institutions did not report salary information and were deleted from the dataset. These non-reporting institutions were primarily medical centers. The final dataset includes 574 useable observations. The sample *includes* sixty-nine schools classified as bachelor conferring, 240 classified as masters conferring and 265 classified as conferring doctorate degrees. The dataset is not exhaustive as many notable universities do not report salary information. While it is not possible to identify each non-reporting school, a pattern does seem apparent. Specifically, private institutions are generally excluded from the NEA dataset.

In order to determine the relevant cost of living index for each university, the city where the university is located was identified. The identification was made based on information provided on the university website. To identify the relevant cost of living, the cities were searched against the Yahoo.com real estate website, neighborhood information section. This section reports, among other things, a cost of living index for U.S. cities. For each university, the cost of living adjusted salary was computed. Consider a university that is located in a city with cost of living index, *COLindex*. The university reports an average salary for its faculty, *Salary*. Then the cost of living adjusted salary, *COLSal*, is computed as:

$$COLSal = \frac{Salary}{COLindex\left(\frac{1}{100}\right)} \quad (1)$$

To demonstrate these computations, consider a university that reports an average salary of \$100,000 per year. The university is located in a city with a cost of living index of 125. The cost of living adjusted salary is computed as:

$$COLSal = \frac{\$100,000}{125\left(\frac{1}{100}\right)} = \$80,000$$

The interpretation is that a salary of \$100,000 in this city is comparable to a salary of \$80,000 in a city with a cost of living Index equal to 100.

Next, we compute the equally weighted, average salary reported by universities within each state. The equal weighting scheme treats each reporting institution equally within the state. Alternative weightings are certainly possible and may produce different results. The impact of different weighting schemes is relegated to future research. Consider a state with, N , universities. Then the average cost of living adjusted salary for a state is computed as follows:

$$SavgCOL = \frac{\sum_{i=1}^N COLSal}{N} \quad (2)$$

For a state with three universities, paying COLA salaries of \$100,000, \$90,000, and \$80,000, the computations are completed as follows:

$$SavgCOL = \frac{\$100,000 + \$90,000 + \$80,000}{3} = \$90,000$$

Similar computations are made on a raw basis, not adjusted for the cost of living. We rank the states based on their average salaries on a raw basis and on a cost of living adjusted basis. Separate rankings are provided based on the benefits that states provide to their faculty. Finally, rankings are provided based on COLA total compensation, combining COLA adjusted salary and benefit data.

RESULTS

Summary statistics are reported in Table 1. Table 1 depicts the number of universities within a state that report an institution of higher education. The total number of reporting universities in each state are identified in the column titled ALL. Pennsylvania had the largest number of reporting institutions at 41. Wyoming and the District of Columbia each had a single reporting institution. The remaining columns break the data down by the types of degrees offered. The second column reports the number schools reporting for each type of degree conferred. The column labeled doctorate, master and bachelor presents the number of reporting institutions within a state, indicating they offer at least one doctorate, master or bachelor degree respectively.

All of the states report at least one institution that offers a doctorate level degree. The District of Columbia did not have a doctorate granting, salary reporting institution. Texas has the largest number of doctoral granting institutions at twenty-six. Forty-four states had master degree reporting institutions. New York reported the largest number of master granting institutions at twenty-four. Only 25 states had at least one bachelor degree reporting institutions. Pennsylvania had by far the largest number of bachelor degree schools with twenty-one. Only one other state had more than four reporting bachelor degree universities.

Next, we report average salary and benefit data by state and faculty rank. In Table 2 an analysis of the raw data is presented. These data are not adjusted for cost of living difference. Panel A depicts the raw salaries in thousands of dollars. New Jersey reports the highest average salaries for both full and assistant professors at \$113,600 and \$68,200 respectively. New Jersey also reports the highest overall average salaries. Nevada reports the highest salaries for associate professors at \$99,500. Missouri reports the highest instructor level salary at \$60,800. Alaska reports highest benefit levels at \$28,800.

Montana reports the lowest average salary for full and associate levels at of \$60,700 and \$52,100 respectively. Montana also has the lowest overall average salary. Vermont reports the lowest average salary for the assistant level at \$44,800. North Dakota institutions report the lowest average pay for instructors at \$36,200. Washington DC reports the lowest benefit level at \$11,500.

Table 1: Summary Statistics

STATE	ALL	DOCTORATE	MASTER	BACHELOR	STATE	ALL	DOCTORATE	MASTER	BACHELOR
AL	14	7	6	1	MT	7	3	3	1
AK	3	1	2	0	NE	7	3	4	0
AZ	6	6	0	0	NV	4	2	1	1
AR	10	4	5	1	NH	4	1	2	1
CA	32	16	15	1	NJ	13	7	6	0
CO	12	6	3	3	NM	6	3	3	0
CT	6	4	1	1	NY	38	6	24	8
DE	2	2	0	0	NC	16	10	6	0
DC	1	0	1	0	ND	6	2	2	2
FL	11	9	1	1	OH	24	11	11	2
GA	21	8	11	2	OK	14	3	8	3
HI	3	2	0	1	OR	8	4	4	0
ID	4	3	0	1	PA	41	7	13	21
IL	12	9	3	0	RI	2	2	0	0
IN	14	5	9	0	SC	12	3	8	1
IA	3	3	0	0	SD	6	4	2	0
KS	7	4	3	0	TN	9	7	2	0
KY	8	3	5	0	TX	35	26	9	0
LA	13	8	5	0	UT	6	2	2	2
ME	7	2	1	4	VT	5	1	3	1
MD	14	9	4	1	VA	15	10	3	2
MA	13	4	9	0	WA	8	3	5	0
MI	15	10	5	0	WV	11	2	5	4
MN	11	5	4	2	WI	13	2	11	0
MS	8	5	3	0	WY	1	1	0	0
MO	13	5	7	1	Total	574	265	240	69

This table shows the number of observations used in the analysis of each state. The column labeled ALL indicates the number of observations in the full sample without regard to type of degree offered. The columns labeled D, BA+ and BA, indicate the number of observations in each state that were Doctorate, Master and BA granting institutions respectively.

Table 3 presents cost of living adjusted data and rankings. The results are dramatically different than the raw figures reported in Table 2. On a cost of living adjusted basis, Iowa reports the highest average salaries for full, and assistant professors at \$115,200, and 71,800 respectively. It also reports the highest overall average salary of \$86,700. Nevada has the highest associate salaries at \$96,700. Missouri reports the highest instructor salaries. Michigan reports the highest dollar amount of benefits at \$28,500. Hawaii institutions report the lowest average pay for each of the service levels as well as the lowest average. Hawaii salaries average \$56,100, \$45,200, \$40,200, and \$31,100 at the full, associate, assistant and instructor levels respectively. Washington, DC reports the lowest cost of living adjusted benefits.

Interesting insights are revealed by comparing the raw rankings to the cost of living adjusted rankings. A rank comparison is provided in Table 4. Defining the cost of living adjusted rank, *COLRank*, and the ranking based on raw data, *RawRank*, the rank change is computed as follows:

$$RCHG = COLRank - RawRank \quad (3)$$

The largest decrease in ranking at the professor level occurs for Washington, D.C. that declined by 33 places. By contrast, the ranking of Kansas improves by twenty places. At the associate level California declined by 37 places while Oklahoma increased by 24 places. At the assistant, associate and average levels, Nebraska shows the largest gains of 27, 39 and 25 places respectively. The largest rank decreases occurred for Hawaii 39, Washington, DC 39, and Washington, DC 38 places for assistant, instructor and average levels respectively. Changes in benefit ranks range from a gain of 16 places for Tennessee to a decline of 35 places for Hawaii.

Table 2: Ranking of State Average Salaries

STATE	PANEL A: AVERAGE SALARIES						PANEL B: RANKING OF AVERAGE SALARIES					
	PROF	ASSOC	ASST	INST	AVG	BEN	PROF	ASSOC	ASST	INST	AVG	BEN
AL	85.5	67.6	55.8	41.4	64.2	19.2	25	22	23	36	26	24
AK	83.2	65.8	55.2	45.7	62.3	28.8	28	26	29	21	29	1
AZ	104.0	76.6	64.3	47.7	74.3	22.1	2	5	4	17	6	12
AR	72.6	59.7	51.3	39.3	54.8	14.3	45	43	44	44	47	44
CA	103.0	77.4	67.6	58.1	80.8	20.8	4	4	2	2	3	18
CO	83.1	64.7	55.5	38.9	62.2	13.8	29	29	28	46	30	46
CT	102.2	78.0	62.9	52.6	81.7	25.9	5	3	9	4	2	2
DE	103.6	73.9	63.0	48.8	77.6	24.9	3	7	8	13	4	5
DC	92.6	69.4	57.7	52.5	73.3	11.5	13	19	22	5	9	51
FL	95.5	70.7	60.7	45.8	69.6	18.5	10	14	14	20	18	27
GA	78.0	61.5	53.7	42.2	59.5	15.7	36	39	35	32	39	41
HI	87.4	69.9	62.2	48.2	70.6	21.8	20	17	12	15	14	13
ID	73.4	58.5	51.0	39.0	56.7	18.0	44	47	45	45	44	30
IL	90.0	68.8	59.9	42.5	66.2	17.3	16	20	16	30	22	33
IN	83.9	63.5	54.9	41.3	61.3	19.5	27	32	32	37	33	22
IA	101.6	74.1	63.3	46.7	76.5	22.9	6	6	7	19	5	10
KS	86.2	65.3	54.4	41.4	64.0	16.6	23	27	33	35	27	38
KY	85.2	65.9	55.2	42.5	62.4	17.1	26	25	31	29	28	34
LA	77.6	63.4	54.1	38.3	58.3	14.9	38	33	34	49	43	42
ME	74.3	59.0	47.8	45.3	59.1	18.8	42	45	48	22	41	26
MD	96.8	73.7	63.7	50.5	73.4	19.1	9	8	6	9	8	25
MA	86.8	69.6	59.3	50.8	72.1	23.1	21	18	20	8	11	9
MI	91.1	70.0	59.5	43.9	70.4	24.4	15	16	17	25	16	7
MN	81.0	63.8	55.6	39.6	64.4	20.3	31	30	25	43	24	21
MS	74.0	61.6	53.5	40.2	56.2	13.8	43	38	36	40	46	48
MO	79.8	61.1	52.3	60.8	60.8	16.8	33	40	42	1	35	35
MT	60.7	52.1	46.1	37.8	49.8	14.7	51	51	50	50	51	43
NE	79.0	62.1	51.6	40.1	59.9	15.8	34	37	43	41	36	39
NV	100.2	99.5	67.1	53.1	73.8	13.6	7	1	3	3	7	49
NH	86.7	68.4	59.1	49.7	71.5	19.5	22	21	21	10	13	23
NJ	113.6	87.0	68.2	51.9	86.4	25.1	1	2	1	6	1	4
NM	72.3	59.7	53.2	40.4	59.4	15.8	46	44	41	39	40	40
NY	89.8	70.5	59.4	48.8	70.5	22.1	17	15	19	12	15	11
NC	95.1	73.7	64.2	51.7	70.2	17.8	11	9	5	7	17	31
ND	66.6	55.3	48.0	36.2	51.5	16.8	49	48	47	51	50	36
OH	88.1	67.0	55.6	42.3	64.8	20.4	19	24	26	31	23	19
OK	69.8	58.8	50.8	39.8	54.2	16.6	47	46	46	42	48	37
OR	74.8	62.9	53.5	41.7	59.7	24.8	40	35	38	34	37	6
PA	91.7	72.7	61.1	47.9	67.6	18.2	14	10	13	16	21	29
RI	82.7	65.2	55.7	40.7	68.4	25.7	30	28	24	38	20	3
SC	78.6	63.7	55.2	43.2	61.0	17.4	35	31	30	26	34	32
SD	75.5	60.7	53.5	42.1	59.0	13.8	39	41	37	33	42	47
TN	80.8	63.2	53.3	38.8	62.0	20.4	32	34	40	48	31	20
TX	85.8	67.2	59.4	44.2	64.3	14.2	24	23	18	24	25	45
UT	77.8	62.2	55.6	44.6	61.8	24.4	37	36	27	23	32	7
VT	69.6	55.2	44.8	42.7	56.4	21.4	48	49	51	28	45	16
VA	94.5	72.0	60.2	47.3	71.7	21.7	12	12	15	18	12	14
WA	89.3	70.9	62.9	49.3	68.8	18.4	18	13	10	11	19	28
WV	65.8	55.1	46.9	38.8	53.4	13.4	50	50	49	47	49	50
WI	74.3	60.0	53.4	42.8	59.6	21.4	41	42	39	27	38	15
WY	96.9	72.2	62.9	48.7	72.3	21.3	8	11	11	14	10	17
N							51	51	51	51	51	51

This table shows the average salaries paid to faculty by state. The columns labeled PROF, ASSOC, ASSIST, INST indicate salary levels at the Full, Associate, Assistant and Instructor levels respectively. The column labeled average is the weighted average of salaries across ranks. The column labeled BEN is the dollar amount of benefits provided to the faculty member. The figures in Panel A are in raw dollar amounts. The figures in Panel B are the rankings. Salary amounts are reported in thousands of dollars.

Table 3: Ranking of State Average Cost of Living Adjusted Salaries

STATE	PANEL A: AVERAGE SALARIES						PANEL B: RANKING OF AVERAGE SALARIES					
	PROF	ASSOC	ASST	INST	AVG	BEN	PROF	ASSOC	ASST	INST	AVG	BEN
AL	100.9	79.9	65.9	49.0	75.8	22.6	10	5	9	15	6	12
AK	69.7	55.1	46.3	39.2	52.2	24.1	47	47	48	48	50	7
AZ	103.7	76.3	64.1	47.3	73.9	21.9	6	15	15	27	15	16
AR	87.8	72.4	62.2	47.8	66.3	17.4	28	21	22	21	32	40
CA	84.1	63.2	55.2	47.8	66.3	17.1	34	41	40	22	34	42
CO	82.1	64.3	55.0	38.6	61.6	13.6	37	40	41	49	43	49
CT	90.4	69.0	55.6	46.4	72.2	22.6	23	31	37	32	18	13
DE	100.0	71.5	61.0	47.2	75.0	24.1	13	23	23	29	10	9
DC	71.8	53.8	44.7	40.7	56.8	8.9	46	49	49	44	47	51
FL	94.2	69.7	59.7	45.1	68.6	18.2	20	27	32	34	25	34
GA	87.4	69.0	60.3	47.3	66.7	17.7	29	30	28	28	31	37
HI	56.1	45.2	40.2	31.1	45.4	14.1	51	51	51	51	51	48
ID	83.6	66.7	58.1	44.4	64.6	20.5	36	36	34	37	39	19
IL	96.0	73.3	63.6	45.4	70.6	18.5	18	19	17	33	20	32
IN	101.6	77.1	66.6	50.2	74.2	23.7	8	12	7	11	14	10
IA	115.2	84.1	71.8	53.1	86.7	26.1	1	2	1	4	1	3
KS	105.1	79.7	66.4	50.6	78.0	20.2	3	6	8	10	3	25
KY	101.3	78.5	65.8	50.6	74.3	20.4	9	9	10	9	13	21
LA	89.9	73.5	62.7	44.6	67.5	17.4	25	18	19	35	27	41
ME	79.0	62.8	50.9	48.4	62.9	20.0	42	42	43	19	40	27
MD	91.0	69.3	59.9	44.2	68.9	18.2	22	28	31	38	23	35
MA	74.3	59.7	50.9	44.1	61.8	19.8	43	44	44	39	42	28
MI	106.1	81.7	69.5	51.4	82.0	28.5	2	3	3	8	2	1
MN	88.4	69.7	60.8	43.8	70.3	22.2	26	26	25	40	22	14
MS	90.1	75.2	65.4	49.2	68.5	16.9	24	16	12	14	26	43
MO	96.5	74.0	63.3	73.7	73.7	20.4	17	17	18	1	16	20
MT	66.7	57.3	50.6	41.6	54.7	16.2	49	45	45	43	48	46
NE	98.2	77.0	64.1	49.9	74.5	19.8	16	14	16	13	11	29
NV	98.3	96.7	65.2	52.3	72.5	13.4	15	1	13	6	17	50
NH	81.5	64.3	55.5	46.8	67.2	18.3	38	39	38	31	30	33
NJ	92.9	70.8	55.5	43.6	70.4	20.5	21	25	39	41	21	18
NM	80.0	66.0	58.9	44.5	65.7	17.4	40	38	33	36	36	39
NY	73.1	57.3	48.4	39.6	57.3	18.1	45	46	46	47	46	36
NC	100.3	78.0	67.9	55.2	74.4	18.9	12	10	5	2	12	30
ND	79.9	66.3	57.5	43.5	61.8	20.1	41	37	35	42	41	26
OH	103.9	79.1	65.6	50.0	76.5	24.1	5	8	11	12	5	8
OK	84.9	71.8	62.2	48.9	66.2	20.3	32	22	21	17	35	23
OR	73.6	61.0	52.0	40.4	58.1	24.3	44	43	42	45	44	5
PA	102.1	81.1	68.2	53.7	75.3	20.3	7	4	4	3	9	24
RI	69.3	55.0	47.0	34.5	57.5	21.7	48	48	47	50	45	17
SC	85.5	69.3	60.1	47.5	66.3	18.8	30	29	30	24	33	31
SD	88.0	70.9	62.4	49.0	68.6	16.1	27	24	20	16	24	47
TN	98.6	77.1	65.1	47.4	75.7	24.9	14	13	14	25	8	4
TX	100.9	79.3	70.0	52.2	75.7	16.7	11	7	2	7	7	44
UT	84.6	67.8	60.7	48.6	67.3	26.6	33	33	26	18	28	2
VT	65.8	52.2	42.4	40.1	53.5	20.4	50	50	50	46	49	22
VA	94.7	72.7	60.9	47.8	72.0	21.9	19	20	24	23	19	15
WA	85.3	68.0	60.2	47.0	65.6	17.7	31	32	29	30	37	38
WV	80.3	67.4	57.3	47.3	65.2	16.4	39	35	36	26	38	45
WI	84.0	67.8	60.3	48.4	67.2	24.2	35	34	27	20	29	6
WY	104.2	77.6	67.6	52.4	77.7	22.9	4	11	6	5	4	11
N							51	51	51	51	51	51

This table shows cost of living adjusted average faculty salaries paid by state. The columns labeled PROF, ASSOC, ASSIST, INST indicate salary levels at the Full, Associate, Assistant and Instructor levels respectively. The column labeled average is the weighted average of salaries across ranks. The column labeled BEN is the dollar value of benefits provided to the faculty member. The figures in Panel A are in raw dollar amounts. The figures in Panel B are the rankings. Salary amounts are reported in thousands of dollars.

Table 4: Ranking of State Average Cost of Living Adjusted Salaries

STATE	PROF	ASSOC	ASST	INST	AVG	BEN	STATE	PROF	ASSOC	ASST	INST	AVG	BEN
AL	15	17	14	21	20	12	NE	18	23	27	28	25	10
AK	-19	-21	-19	-27	-21	-6	NV	-8	0	-10	-3	-10	-1
AZ	-4	-10	-11	-10	-9	-4	NH	-16	-18	-17	-21	-17	-10
AR	17	22	22	23	15	4	NJ	-20	-23	-38	-35	-20	-14
CA	-30	-37	-38	-20	-31	-24	NM	6	6	8	3	4	1
CO	-8	-11	-13	-3	-13	-3	NY	-28	-31	-27	-35	-31	-25
CT	-18	-28	-28	-28	-16	-11	NC	-1	-1	0	5	5	1
DE	-10	-16	-15	-16	-6	-4	ND	8	11	12	9	9	10
DC	-33	-30	-27	-39	-38	0	OH	14	16	15	19	18	11
FL	-10	-13	-18	-14	-7	-7	OK	15	24	25	25	13	14
GA	7	9	7	4	8	4	OR	-4	-8	-4	-11	-7	1
HI	-31	-34	-39	-36	-37	-35	PA	7	6	9	13	12	5
ID	8	11	11	8	5	11	RI	-18	-20	-23	-12	-25	-14
IL	-2	1	-1	-3	2	1	SC	5	2	0	2	1	1
IN	19	20	25	26	19	12	SD	12	17	17	17	18	0
IA	5	4	6	15	4	7	TN	18	21	26	23	23	16
KS	20	21	25	25	24	13	TX	13	16	16	17	18	1
KY	17	16	21	20	15	13	UT	4	3	1	5	4	5
LA	13	15	15	14	16	1	VT	-2	-1	1	-18	-4	-6
ME	0	3	5	3	1	-1	VA	-7	-8	-9	-5	-7	-1
MD	-13	-20	-25	-29	-15	-10	WA	-13	-19	-19	-19	-18	-10
MA	-22	-26	-24	-31	-31	-19	WV	11	15	13	21	11	5
MI	13	13	14	17	14	6	WI	6	8	12	7	9	9
MN	5	4	0	3	2	7	WY	4	0	5	9	6	6
MS	19	22	24	26	20	5	MAX +	20	24	27	28	25	16
MO	16	23	24	0	19	15	MAX -	-33	-37	-39	-39	-38	35
MT	2	6	5	7	3	-3	AVG	12.4	14.7	15.9	16.3	14.2	8.1

This table shows the ranking changes that occur by adjusting salaries for cost of living differences. The figure in each cell is the cost of living adjusted ranking less the raw data ranking.

The average rank changes are substantial. The average changes are 12.4, 14.7, 15.9, 16.3 and 14.2 places at the full, associate, assistant, instructor and average levels respectively. These figures represent between a 24 and 32 percent change in ranks. The average change in benefits ranking is 8.1 places.

While the figures from Tables 2-4 are insightful, more can be inferred. States differ in the level of their institutions. While Texas has primarily doctoral granting institutions, Pennsylvania has primarily bachelor degree institutions and New York is characterized primarily by master’s degree granting institutions. If there are differences in salary by institution type, the previous analysis could be misleading. To gain additional insights the cost of living adjusted analysis is completed for each degree subgroup. The results are presented in Tables 5-7.

Table 5 shows the results for doctorate granting institutions. The analysis is limited to the 50 states because the District of Columbia did not have a doctorate reporting institution. Pennsylvania universities report the highest average salary at the full, associate and assistant levels of \$119,200, \$90,100 and \$73,500 respectively. Pennsylvania also reported the highest average salaries at \$88,400. Missouri reported the highest instructor salaries at \$82,300. Michigan institutions have the highest benefit level of \$28,900. Hawaii reports dramatically lower salaries than the other states in the nation. It ranks last in the nation for each academic rank, on average, and for benefits. Hawaii is \$9,500; \$7,700; \$5,400; \$2,900; \$10,100, and \$800 lower than the second lowest state at the full, associate, assistant, instructor, average, and benefit levels respectively. A common argument is that lower salaries in Hawaii represent the price for opting to live in paradise.

Table 5: Cost of Living Adjusted Salaries by State for Doctorate Degree Granting Institutions

STATE	PANEL A: AVERAGE SALARIES						PANEL B: RANKING OF AVERAGE SALARIES					
	PROF	ASSOC	ASST	INST	AVG	BEN	PROF	ASSOC	ASST	INST	AVG	BEN
AL	111.2	82.3	68.0	47.9	80.1	23.6	8	9	15	23	12	13
AK	75.3	58.0	49.1	42.5	55.9	25.3	47	48	48	45	49	6
AZ	103.7	76.3	64.1	47.3	73.9	21.9	18	23	28	28	28	20
AR	97.8	76.3	67.0	46.8	71.7	17.3	26	24	19	33	33	42
CA	89.2	63.9	55.8	46.7	70.3	15.3	41	46	44	34	38	49
CO	94.9	72.0	60.5	40.0	68.9	15.6	33	33	37	48	43	48
CT	86.2	65.5	54.1	46.5	69.8	22.1	44	45	46	36	40	17
DE	100.0	71.5	61.0	47.2	75.0	24.1	22	34	36	30	23	11
DC												
FL	97.1	70.9	61.5	46.7	70.4	18.4	30	37	34	35	37	38
GA	98.5	73.9	65.1	46.9	73.5	18.1	24	31	26	32	30	40
HI	59.8	47.3	41.6	31.6	47.4	14.5	50	50	50	50	50	50
ID	89.0	70.8	61.3	45.8	67.4	21.8	42	38	35	39	44	22
IL	99.9	75.0	65.2	47.4	74.1	19.2	23	27	25	26	27	32
IN	112.6	82.4	70.6	49.8	83.1	25.2	5	7	9	17	6	7
IA	115.2	84.1	71.8	53.1	86.7	26.1	3	4	2	3	2	4
KS	109.7	82.9	69.0	50.6	82.5	20.7	10	6	13	13	8	27
KY	109.6	81.2	67.0	51.2	80.8	22.1	11	11	20	12	11	18
LA	94.6	76.4	65.6	47.2	70.5	19.0	34	21	24	29	36	35
ME	92.1	71.5	57.6	49.4	73.3	21.9	37	35	40	19	31	21
MD	92.0	69.5	59.8	43.2	69.0	18.0	38	40	38	44	42	41
MA	86.2	67.5	54.8	43.4	69.0	18.9	45	42	45	43	41	36
MI	112.2	84.5	71.4	51.4	85.2	28.9	6	3	3	11	3	1
MN	93.2	71.3	62.6	45.4	74.9	21.7	36	36	30	40	24	23
MS	97.3	78.8	67.4	47.6	71.7	15.6	29	16	17	25	34	47
MO	110.4	79.6	69.2	82.3	82.3	22.1	9	15	12	1	9	16
MT	70.9	60.2	52.9	44.0	57.8	17.1	48	47	47	42	47	43
NE	108.7	85.3	71.2	51.9	80.1	19.1	12	2	7	8	13	33
NV	113.2	83.2	64.2	49.8	81.5	16.3	4	5	27	18	10	46
NH	89.8	66.9	56.9	50.2	73.7	20.5	39	43	42	15	29	28
NJ	96.9	73.7	57.6	41.4	71.4	22.0	31	32	41	47	35	19
NM	96.0	75.1	65.9	45.9	76.1	18.7	32	26	23	38	21	37
NY	105.1	76.3	62.3	50.0	82.9	24.3	15	22	31	16	7	9
NC	101.4	77.7	67.4	52.1	75.5	19.2	20	18	18	7	22	31
ND	97.7	77.0	68.2	48.4	74.4	21.2	27	20	14	22	25	26
OH	111.9	82.4	69.6	51.4	83.5	25.0	7	8	10	10	5	8
OK	117.9	82.3	71.3	50.5	79.0	24.2	2	10	5	14	16	10
OR	85.8	69.3	59.5	46.0	64.0	23.7	46	41	39	37	45	12
PA	119.2	90.1	73.5	52.2	88.4	23.1	1	1	1	6	1	14
RI	69.3	55.0	47.0	34.5	57.5	21.7	49	49	49	49	48	24
SC	106.0	79.9	71.2	49.0	79.2	20.3	13	13	6	20	14	29
SD	94.4	74.2	66.3	48.8	72.4	16.7	35	30	21	21	32	45
TN	101.4	78.4	66.0	47.4	77.4	25.4	19	17	22	27	19	5
TX	103.8	80.8	71.3	51.7	77.2	16.7	17	12	4	9	20	44
UT	100.7	76.2	70.9	52.9	79.2	28.5	21	25	8	4	15	2
VT	88.3	66.5	55.9	42.3	63.9	19.0	43	44	43	46	46	34
VA	98.4	74.5	62.2	47.8	74.4	21.5	25	29	32	24	26	25
WA	89.8	70.1	61.8	47.1	69.8	19.4	40	39	33	31	39	30
WV	97.7	74.5	63.3	44.9	77.8	18.3	28	28	29	41	17	39
WI	105.4	79.8	69.5	54.3	83.8	26.5	14	14	11	2	4	3
WY	104.2	77.6	67.6	52.4	77.7	22.9	16	19	16	5	18	15
N							50	50	50	50	50	50

This table shows cost of living adjusted average faculty salaries paid by state by doctorate degree granting institutions. The columns labeled PROF, ASSOC, ASSIST, INST indicate salary levels at the Full, Associate, Assistant and Instructor levels respectively. The column labeled average is the weighted average of salaries across ranks. The column labeled BEN is the dollar value of benefits provided to the faculty member. The figures in Panel A are in raw dollar amounts. The figures in Panel B are the rankings. Salary amounts are reported in thousands of dollars.

Table 6 shows the results for master degree granting institutions. Forty-four states had at least one master degree granting institution. However, Nevada did not report salaries at the associate and assistant levels resulting in 43 usable observations for these two ranks. Pennsylvania again has the highest full professor salaries at \$99,900. North Carolina has the highest associate and assistant level salaries at \$78,600 and \$68,900 respectively. Missouri has the highest lecturer salaries at \$70,300. On average Michigan reports the highest overall average salaries of \$75,700 and the highest benefits of \$27,700. Vermont has the lowest full, associate and assistant professor salaries at \$61,100, 49,600, 39,200 respectively. Oregon has the lowest instructor salaries of \$34,900. Alaska has the lowest average salaries of \$50,400. Washington D.C. has the lowest benefit level of \$8,900. It is important to note that Hawaii, which ranked at the bottom of the doctoral list, did not have a master degree granting institution, and thus was not included in this analysis.

Table 7 shows the results for Bachelor degree granting institutions. Twenty-five states report at least one bachelor degree granting institution. Connecticut is the highest paying state at the full professor level, \$118,800 as well as on average, \$91,900. Nevada was the highest paying state at the associate level at \$123,800; Maryland reported highest at the assistant level at \$71,400 and Pennsylvania the highest at the instructor level at \$58,200. Alabama reports the highest benefit level at \$27,400. Hawaii once again has the distinction as being the lowest paying state, ranking at the bottom of each pay category. However, Hawaii is not lowest in the benefit area as Nevada and Colorado both report lower benefit levels.

Finally, we combine COLA salary and benefit data to examine cost of living adjusted total compensation. In order to complete this analysis it is necessary to compute the total compensation. Total compensation is computed as the sum of salary and benefits.

$$Tcomp = Salary + Benefits \quad (4)$$

There are some limitations inherent in computing the total compensation in this fashion. Benefit information is reported as an average for all faculty at an institution. Benefits, however contain both a fixed and a variable component that depends upon salary level. Fixed components include items such as health insurance contributions. Items that vary with salary level include items like Social Security and Medicare contributions. Moreover, the mixture of fixed versus variable costs will vary by institution. Thus, it is not possible to precisely decompose benefits into a fixed and variable component. The process used here is inherently biased. Full professor total compensation will be biased downward, while lecturer total compensation will be biased upwards. While an element of bias is present, we argue that the bias will be approximately equally across states and thus not affect rankings. Moreover, any other method of adjusting the data would also introduce an equally problematic element of bias.

Table 8 shows the results of the COLA total compensation analysis. Iowa has the highest full and overall average COLA total compensation at \$141,200 and \$112,700 respectively. For full professors Iowa is \$6,600 higher than second placed Michigan. Michigan has the highest associate and assistant level COLA total compensation at \$110,200 and \$97,900 respectively. Missouri has the highest instructor COLA total compensation at \$94,100. Hawaii maintains its position as the lowest paying state in the nation. It ranks 51st for total compensation for full, associate, instructor and overall average compensation. However, it is ranked 50th at the assistant level, with Washington DC having the lowest pay for assistant professors. Again, the difference between Hawaii and the next lowest state is significant. At the full professor level, Hawaii total compensation is \$10,500 lower than 50th ranked Washington DC. For the overall average, Hawaii is \$6,300 below 50th ranked Washington, DC.

Table 6: Cost of Living Adjusted Salaries by State for Master Degree Granting Institutions

STATE	PANEL A: AVERAGE SALARIES						PANEL B: RANKING OF AVERAGE SALARIES					
	PROF	ASSOC	ASST	INST	AVG	BEN	PROF	ASSOC	ASST	INST	AVG	BEN
AL	89.4	77.0	62.7	50.0	70.2	20.7	11	3	8	10	10	13
AK	66.9	53.7	44.8	35.9	50.4	23.5	40	41	40	43	44	6
AZ												
AR	78.3	67.6	57.5	47.9	62.1	17.0	28	19	21	19	31	33
CA	78.3	62.5	54.4	48.5	62.7	18.8	29	32	29	15	25	27
CO	74.1	62.2	54.0	37.9	58.1	12.3	35	33	30	41	36	43
CT	78.9	59.6	48.8	39.0	62.3	24.7	27	35	38	39	29	4
DE												
DC	71.8	53.8	44.7	40.7	56.8	8.9	36	40	41	35	38	44
FL	87.4	69.2	56.0	39.5	61.6	17.0	15	15	25	37	32	31
GA	80.2	65.8	57.7	47.9	62.7	17.0	22	24	20	18	26	32
HI												
ID												
IL	84.2	68.0	58.9	39.2	60.3	16.6	18	18	15	38	34	36
IN	95.5	74.2	64.4	50.4	69.3	22.8	5	9	5	8	12	9
IA												
KS	99.0	75.4	62.8	50.6	72.0	19.5	2	6	7	7	4	19
KY	96.3	76.9	65.1	50.3	70.3	19.4	4	4	4	9	7	21
LA	82.5	68.8	58.1	40.5	62.8	14.7	19	17	19	36	24	41
ME	77.4	63.4	50.1	45.9	62.3	19.5	31	31	36	28	30	20
MD	85.4	65.1	57.5	44.2	64.0	19.3	16	28	22	31	19	22
MA	69.1	56.3	49.1	44.3	58.6	20.2	38	38	37	30	35	16
MI	94.0	76.3	65.7	51.5	75.7	27.7	7	5	3	6	1	1
MN	84.9	67.2	59.0	40.7	67.9	21.1	17	21	14	34	14	11
MS	78.2	69.1	61.9	51.8	63.3	18.9	30	16	10	5	22	24
MO	90.5	72.2	60.6	70.3	70.3	19.8	9	11	13	1	8	17
MT	66.3	57.2	50.7	41.6	54.9	15.8	41	36	35	33	40	38
NE	90.3	70.7	58.8	48.5	70.3	20.3	10	13	17	16	9	15
NV	68.8			55.0	62.4	13.3	39			3	27	42
NH	79.1	64.2	53.4	46.4	65.5	17.9	26	30	31	27	15	29
NJ	88.2	67.4	53.0	46.8	69.3	18.8	13	20	33	26	13	25
NM	64.0	56.9	51.8	43.2	55.3	16.2	43	37	34	32	39	37
NY	70.3	55.7	47.3	38.5	54.8	17.3	37	39	39	40	41	30
NC	98.2	78.6	68.9	60.4	72.5	18.3	3	1	1	2	3	28
ND	75.8	61.7	53.2	44.4	57.0	20.8	33	34	32	29	37	12
OH	95.0	75.3	61.8	49.5	70.9	22.9	6	7	12	11	6	8
OK	82.4	71.3	62.0	49.3	65.2	19.2	20	12	9	14	16	23
OR	64.5	52.7	44.4	34.9	52.1	25.0	42	42	42	44	42	3
PA	99.9	78.6	63.6	47.3	75.2	19.8	1	2	6	24	2	18
RI												
SC	80.0	67.1	57.4	47.7	63.3	18.8	24	22	23	20	21	26
SD	75.2	64.2	54.5	49.3	61.2	14.9	34	29	28	13	33	40
TN	88.6	72.5	61.8	47.6	69.5	22.9	12	10	11	21	11	7
TX	92.7	74.7	66.0	53.6	71.6	16.8	8	8	2	4	5	34
UT	79.6	65.7	57.0	48.3	63.8	25.7	25	25	24	17	20	2
VT	61.1	49.6	39.2	37.9	51.9	21.2	44	43	43	42	43	10
VA	87.6	69.2	54.8	47.5	64.9	20.7	14	14	27	22	17	14
WA	82.0	66.4	58.9	47.0	63.1	16.6	21	23	16	25	23	35
WV	76.2	65.6	55.5	49.4	62.4	15.5	32	26	26	12	28	39
WI	80.1	65.6	58.7	47.3	64.2	23.8	23	27	18	23	18	5
WY												
							44	43	43	44	44	44

This table shows cost of living adjusted average faculty salaries paid by state by master degree granting institutions. The columns labeled PROF, ASSOC, ASSIST, INST indicate salary levels at the Full, Associate, Assistant ant and Instructor levels respectively. The column labeled average is the weighted average of salaries across ranks. The column labeled BEN is the dollar value of benefits provided to the faculty member. The figures in Panel A are in raw dollar amounts. The figures in Panel B are the rankings. Salary amounts are reported in thousands of dollars.

Table 7: Cost of Living Adjusted Salaries by State for Bachelor Degree Granting Institutions

STATE	PANEL A: AVERAGE SALARIES						PANEL B: RANKING OF AVERAGE SALARIES					
	PROF	ASSOC	ASST	INST	AVG	BEN	PROF	ASSOC	ASST	INST	AVG	BEN
AL	98.0	80.4	70.2	50.9	78.8	27.4	4	6	2	8	3	1
AK												
AZ												
AR	95.2	80.7	66.1	51.6	65.9	19.4	7	5	6	7	7	9
CA				54.4	54.4	19.9				3	18	6
CO	64.7	51.0	45.2	36.6	50.4	10.6	21	21	21	21	22	24
CT	118.8	92.6	68.6	53.2	91.9		1	2	4	5	1	
DE												
DC												
FL	74.8	59.8	47.4	36.5	59.4	17.7	13	16	20	22	13	14
GA	82.0	67.6	55.8	45.2	60.9	19.6	10	10	12	13	12	8
HI	48.9	41.0	37.5	30.3	41.4	13.2	25	25	25	25	26	23
ID	67.5	54.2	48.4	40.1	56.0	16.5	18	20	17	19	16	17
IL												
IN												
IA												
KS												
KY												
LA												
ME	72.8	58.3	47.7	48.5	57.9	19.3	15	18	19	9	15	11
MD	104.8	84.4	71.4	52.9	88.4	15.1	2	3	1	6	2	20
MA												
MI												
MN	83.1	70.9	59.8	44.1	63.7	25.4	9	8	9	15	10	5
MS												
MO	69.9	58.8	52.4	54.0	54.0	16.1	16	17	15	4	20	18
MT	55.4	48.8	43.8	34.2	45.1	14.6	24	22	22	24	25	22
NE												
NV	98.0	123.8	67.3	54.6	64.6	7.6	5	1	5	2	8	25
NH	77.8	61.9	58.4	44.1	64.4	17.1	11	13	10	16	9	15
NJ												
NM												
NY	57.3	47.8	41.1	35.2	45.9	15.7	23	23	23	23	24	19
NC												
ND	66.1	60.2	51.1	37.6	54.0	18.5	20	15	16	20	19	13
OH	104.1	82.6	64.1	43.4	68.7	25.5	3	4	7	17	6	4
OK	69.6	62.8	53.6	46.1	55.9	19.3	17	12	14	11	17	10
OR												
PA	97.6	79.7	69.2	58.2	71.0	19.6	6	7	3	1	4	7
RI												
SC	67.4	54.6	48.2	41.7	50.7	14.8	19	19	18	18	21	21
SD												
TN												
TX												
UT	73.7	61.6	54.0	44.7	58.9	25.6	14	14	13	14	14	3
VT	57.6	45.8	38.2		47.8	19.2	22	24	24		23	12
VA	87.0	68.8	63.4	48.2	70.8	26.0	8	9	8	10	5	2
WA												
WV	76.8	66.1	56.6	46.0	62.6	16.6	12	11	11	12	11	16
WI												
WY												
N							25	25	25	25	26	25

This table shows cost of living adjusted average faculty salaries paid by state by bachelor degree granting institutions. The columns labeled PROF, ASSOC, ASSIST, INST indicate salary levels at the Full, Associate, Assistant and Instructor levels respectively. The column labeled average is the weighted average of salaries across ranks. The column labeled BEN is the dollar value of benefits provided to the faculty member. The figures in Panel A are in raw dollar amounts. The figures in Panel B are the rankings. Salary amounts are reported in thousands of dollars.

STATISTICAL TESTS

A final demonstration of the ranking differences is based on rank correlation. We test the extent to which the raw ranks and COLA ranks are correlated using a standard Kendall's Tau test for rank correlation. Kendall's Tau tests the agreement between two rankings. To the extent that the raw rankings and COLA rankings are highly correlated, there is little reason to examine COLA salaries. In the case of perfect correlation, any differences would be by a scale factor only and would not change the ranking of the individual states. If the two rankings are not highly correlated, however, the two rankings are said to be significantly different.

The rank correlation test results are presented in Table 9. The results indicate correlation coefficients between -0.002 between the raw and COLA total compensation of assistant professors at doctorate degree granting institutions and 0.600 for raw and COLA full professor salaries at bachelor degree granting institutions. The significance of the correlations is mixed. For example, when examining total compensation in the full sample, the correlations are significant for the full, associate, instructor and average analyses; however, they are not significant at the assistant professor level. The interpretation is that there is not a high degree of correlation between raw compensation and cost of living adjusted compensation at the assistant level. This suggests that faculty in this category should be especially careful to adequately consider cost of living differences when evaluating compensation packages. Insignificant correlations are also found in the subsample analysis. Overall, the analysis indicates raw salaries and cost of living salaries are not highly correlated.

CONCLUDING COMMENTS

Equitable faculty compensation has long been an issue in higher education. In this paper we rank states based on the salaries and benefits that universities pay to their faculty. Separate rankings are made based on raw data and cost of living adjusted (COLA) data. The analysis is completed for faculty of differing ranks. The analysis is also completed for subgroups of universities offering different degrees.

The analysis indicates that comparing salary and compensation data on a COLA basis produces substantially different rankings than comparing raw salary figures. The data indicates widely varying compensation by state on a COLA basis. The ranking of states are found to change by as many as 39 places when cost of living realities are considered. The data further indicates that some states have consistently higher salaries than others. Iowa, Pennsylvania and Michigan are consistently higher paying states while Hawaii, Vermont, and Washington, DC pay consistently low salaries. Hawaii is particularly noteworthy because it is consistently and significantly lower than all other states.

The analysis here indicates that faculty should exercise care in examining compensation packages on a cost of living adjusted basis. They should not consider only raw data figures. Moreover, they should be sure to take into account the value of different benefit packages in making an employment decision. Administrators should consider the rankings presented here to position their institutions and states as desired in highly competitive faculty markets. It is unlikely that low ranked universities will be able to attract the highest quality faculty. In some cases, administrators of universities that are ranked high might be able to reduce salaries while still attracting the highest quality faculty.

The analysis is limited in several ways. First, some U.S. universities are not included in the sample. Private universities are notably absent from the sample. Second, benefit data was available only as an average amount across academic rank. As such, the combined salary and benefit data by academic rank are necessarily biased. Average data for each state were computed as a simple average of the salaries paid by the universities within the state. To the extent that different universities within a state employ

Table 8: Cost of Living Adjusted Total Compensation by State

STATE	PANEL A: AVERAGE COMPENSATION					PANEL B: RANKING BY COMPENSATION				
	PROF	ASSOC	ASST	INST	AVG	PROF	ASSOC	ASST	INST	AVG
AL	123.6	102.5	88.6	71.7	98.4	9	5	7	12	7
AK	93.8	79.2	70.4	64.6	76.3	45	44	44	36	45
AZ	125.5	98.2	86.0	69.2	95.8	5	12	14	18	10
AR	105.2	89.8	79.5	65.2	83.7	30	27	25	27	35
CA	101.1	80.2	72.2	64.9	83.3	36	42	41	30	36
CO	95.7	77.8	68.6	52.2	75.1	43	45	46	49	47
CT	109.3	87.9	74.5	65.2	91.1	24	30	38	26	21
DE	124.1	95.6	85.1	71.3	99.1	8	16	15	13	6
DC	80.7	62.7	53.6	49.6	65.7	50	50	51	50	50
FL	112.4	87.9	77.9	63.3	86.8	20	29	33	41	25
GA	105.0	86.7	78.0	64.9	84.3	31	34	31	32	34
HI	70.2	59.2	54.3	45.2	59.4	51	51	50	51	51
ID	104.1	87.1	78.6	64.9	85.0	33	32	28	31	31
IL	114.5	91.8	82.2	63.9	89.1	18	24	23	38	23
IN	125.3	100.8	90.3	73.8	97.9	7	8	4	9	9
IA	141.2	110.2	97.9	79.1	112.7	1	2	2	3	1
KS	125.3	99.9	86.6	70.8	98.2	6	10	12	15	8
KY	121.7	98.9	86.2	71.0	94.7	12	11	13	14	12
LA	107.3	90.9	80.1	62.0	84.9	27	26	24	43	32
ME	99.0	82.8	70.9	68.4	83.0	40	40	42	21	39
MD	109.2	87.5	78.1	62.3	87.1	25	31	30	42	24
MA	94.1	79.5	70.7	63.9	81.6	44	43	43	37	42
MI	134.6	110.2	97.9	79.9	110.5	2	1	1	2	2
MN	110.5	91.9	82.9	66.3	92.5	23	23	19	22	18
MS	107.0	92.0	82.2	66.0	85.4	28	21	22	24	29
MO	117.0	94.4	83.7	94.1	94.1	16	18	18	1	14
MT	82.9	73.5	66.8	57.7	70.9	49	48	47	46	49
NE	117.9	96.7	83.9	69.7	94.2	14	14	17	17	13
NV	111.7	110.1	78.6	65.7	85.9	21	3	27	25	27
NH	99.8	82.6	73.9	65.1	85.6	38	41	39	28	28
NJ	113.4	91.3	76.0	64.7	91.0	19	25	37	34	22
NM	97.5	83.4	76.3	62.0	83.1	41	39	35	44	38
NY	91.1	75.4	66.4	57.7	75.4	46	47	48	47	46
NC	119.2	96.9	86.8	74.0	93.2	13	13	10	7	17
ND	100.0	86.4	77.6	63.6	82.0	37	35	34	40	41
OH	128.0	103.2	89.7	74.4	100.6	3	4	6	6	4
OK	105.3	92.1	82.4	69.1	86.5	29	20	21	19	26
OR	99.4	85.3	76.3	64.7	82.4	39	37	36	33	40
PA	122.3	101.4	88.4	74.0	95.6	11	7	8	8	11
RI	91.0	76.7	68.6	56.1	79.2	47	46	45	48	44
SC	104.3	88.1	78.9	66.3	85.1	32	28	26	23	30
SD	104.1	87.0	78.5	65.1	84.7	34	33	29	29	33
TN	123.4	101.9	90.0	72.3	100.5	10	6	5	11	5
TX	117.7	96.0	86.7	69.0	92.5	15	15	11	20	19
UT	111.2	94.4	87.3	75.2	93.9	22	19	9	5	16
VT	86.2	72.6	62.7	61.0	73.8	48	49	49	45	48
VA	116.7	94.6	82.8	69.7	93.9	17	17	20	16	15
WA	103.0	85.7	77.9	64.7	83.3	35	36	32	35	37
WV	96.7	83.8	73.7	63.7	81.6	42	38	40	39	43
WI	108.2	92.0	84.6	72.6	91.5	26	22	16	10	20
WY	127.1	100.5	90.5	75.3	100.6	4	9	3	4	3
N						51	51	51	51	51

This table shows cost of living adjusted average faculty total compensation paid by each state. The columns labeled PROF, ASSOC, ASSIST, INST indicate salary levels at the Full, Associate, Assistant and Instructor levels respectively. The column labeled average is the weighted average of salaries across ranks. The figures in Panel A are in raw dollar amounts. The figures in Panel B are the rankings. Salary amounts are reported in thousands of dollars.

Table 9: Kendall's Tau Test for Rank Correlation

Panel A: All Schools					
	Full	Associate	Assistant	Instructor	Average
Sal and Benefits	0.293	0.179	0.105	0.169	0.028
	0.001***	.032**	0.138	0.040**	0.016**
	0.086	0.032	0.011	0.028	0.043
Salary	0.304	0.189	-0.32	0.042	0.024
	0.001***	0.025**	0.370	0.333	0.401
	0.092	0.036	0.001	0.002	0.001
Benefits					0.552
					0.001***
					0.305
Panel B: Doctorate Degree Granting					
	Full	Associate	Assistant	Instructor	Average
Sal and Benefits	0.199	0.059	-0.002	0.222	0.146
	0.021**	0.273	0.490	0.011**	0.067*
	0.040	0.003	0.000	0.049	0.021
Salary	0.081	-0.006	-0.186	0.099	-0.047
	0.204	0.477	0.028**	0.156	0.314
	0.007	0.000	0.035	0.010	0.002
Benefits					0.522
					0.001***
					0.272
Panel C: Master Degree Granting					
	Full	Associate	Assistant	Instructor	Average
Sal and Benefits	0.302	0.158	0.143	0.201	0.184
	0.002***	0.067*	0.089*	0.027**	0.039**
	0.091	0.025	0.020	0.040	0.034
Salary	0.305	0.166	-0.017	-0.015	-0.010
	0.002***	0.058	0.438	0.444	0.464
	0.093	0.028	0.000	0.000	0.000
Benefits					0.615
					0.001***
					0.378
Panel D: Bachelor Degree Granting					
	Full	Associate	Assistant	Instructor	Average
Sal and Benefits	0.527	0.493	0.360	0.340	0.360
	0.000***	0.000***	0.006***	0.009***	0.006***
	0.277	0.243	0.130	0.116	0.130
Salary	0.600	0.480	0.268	0.200	-0.028
	0.001***	0.000***	0.033**	0.081*	0.421
	0.360	0.230	0.072	0.040	0.001
Benefits					0.524
					0.000
					0.275

*This table shows the results of the Kendall's Tau test for rank correlation. The first figure in each cell is the correlation. The second figure in each cell is the significance. The third figure in each cell is the coefficient of determination. ***, **, and * indicate significance at the 1, 5 and 10 percent levels respectively. The number of observations in the sample for the full, doctorate, master and bachelor degree samples are 51, 50, 44 and 25 respectively.*

more or less faculty, the averages computed here may be a biased representation of the salary earned by the average professor within a state. Further research is needed to assess the impact of different weighting schemes on the rankings. Another limitation of the analysis is that different academic fields have different academic salary levels. For example, business professors are traditionally higher paid while humanities professors are generally paid substantially less. To the extent that different schools have different program mixes, it would not be surprising that salaries differ across universities and states. Finally, the data here is aggregated by state. An individual university might be quite different than state average data. Future research might address these limitations.

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