WORKING DRAFT:
Overhead at UC Berkeley.

February 2, 2017

Abstract

We conduct some analyses that, put simply, suggests that, scaling for size, whereas UC Berkeley should be spending roughly twice as much as UC Santa Barbara on non-teaching/non-research salaries, instead it spends up to two and a half times to three times as much. A move to UCSB's level of "overheads" would save hundreds of millions of dollars in compensation alone. The bulk of these savings appear in Management, Administration, and Finance areas and some savings also appear in Computing and Student Services.

In particular, we compute an "effective overhead" which is the ratio of non-instructional/non-research salary to the salary of direct instructional and research personnel. This measure is a convenient rough measure of efficiency of the institutions in that equal numbers roughly imply equal efficiency.

The calculations indicate that the overhead for UC Berkeley is roughly 215%, while for UC Santa Barbara it is roughly 159%. While neither figure is small, it does suggest that bringing UC Berkeley's numbers more in line with UC Santa Barbara's would generate significant savings, quite possibly, completely dealing with the budget deficit of $150 million.

We welcome feedback about any potential gaps in this analysis.

1 Introduction

We apply a simple measure of institutional efficiency of our universities, which which we call the effective overhead rate: it is the ratio of salary spent on non-direct teaching and research efforts to the salary spent on those directly teaching and doing research. Computing this simple rate can be very revealing, since we would expect that equally efficient universities should have comparable effective overhead rate. We note that the effective overhead rate is somewhat analogous to the familiar research overhead rate.

We compare UC Berkeley's effective overhead rate to that of UC Santa Barbara, the next largest member of the UC System that does not have an associated medical center. Our analysis suggests that a move to UCSB's level of effective overhead would save hundreds of millions of dollars in compensation alone. The bulk of these potential savings appear in Management, Administration and Finance areas and some savings also appear in Computing and Student Services.

Specifically, the effective overhead rate for UC Berkeley is roughly 215%, while for UC Santa Barbara it is roughly 159%. In particular, an area where UCB's overhead percentage significantly exceeds UCSB's is management expenditures — $136 million (59% overhead rate)

versus $29 million (26% overhead rate). We make no claim, nor do we believe that UC Santa Barbara is especially efficient with respect to overhead rate — it just appears to be more efficient than UC Berkeley.

We note that while we focus exclusively on employee compensation in our analysis, there is perhaps something to learn from best practices at other UC's in categories other than employee compensation. For example, it appears UCSB escapes significant expenses (on the order of $77 million) in student healthcare which Berkeley does not (and to be fair, neither does UCLA); See section 3.

This is a working document, and we welcome feedback about any gaps in our analysis.

2 Overhead Calculations

We proceed in the next sections with calculations that use two data sources with different views of salary expenditures. The two yield similar results.

2.1 IPEDS 2014.

The Integrated Postsecondary Education Data System (IPEDS) is maintained by the National Center for Education System and collects information from colleges and university using standardized methodologies.

We use these data to compare UC Berkeley and UC Santa Barbara effective overhead rates overall in this section, and on specific functions in the next subsection.

For instructional salary, we have UC Berkeley at $232 million compared to UC Santa Barbara's $112 million from the IPEDS 2014 datafiles at [4]. For non instructional salary totals, we have UCB at $653 million and UCSB at $208 million from the IPEDS 2014 datafile at [3].

The non-instructional salaries include research salaries which are $82 million (UCB) and $25 million (UCSB) which should not be considered overhead. Moreover, UCB spends significantly more than UCSB, $25 million versus $4 million, on the category of "Librarians, Curators, Archivists and Academic Affairs and Other Education Services - outlays" which we don't feel comfortable categorizing as overhead.

Deducting those costs from the total non-instructional salary reported to IPEDS leaves $546 million in overhead salaries for UC Berkeley versus $179 million for UC Santa Barbara.

Basic Calculation. Putting this together, the effective overhead rate for UCB is 235%, the ratio of $546 to $232. The effective overhead rate for UCSB is 159%, the ratio of $179 to $112. Were Berkeley consistent with Santa Barbara on this overhead, its non-instructional salaries would engender a savings of $177 million in salary alone.

Using an estimated associated benefit rate of 36% as suggested by [10] yields a saving of $240 million dollars in salaries and benefits alone based on 2014 data.

Standard Research Overhead Calculation. Federal research has a fixed overhead rate, which is 57%. Thus, we remove 57% of $82 million from the $546 million of overhead from our calculation to get overhead salary spending of 499 million for UCB and an analogous calculation yields 193 million for UCSB. We then compute an effective overhead rate of 215% and 145% respectively for UCB and UCSB. Reducing Berkeley's overhead to that of UCSB would save $189 million on total compensation.[1]

[1]The computation is $(546 - .57 * 82)/232 = 2.15$ for Berkeley and $(177 - .57 * 25)/112 = 1.45$ for Santa

2.1.1 Specific areas for further examination.

These are from the IPEDS non-instructional staff data [3].

In the following, we are reporting UCB versus UCSB numbers for various functions. We compute savings by reducing the per function overhead rate of UCB to that computed for UCSB and reporting the differences in salary and estimated total compensation. We calculate overhead rates by dividing salaries for the specific function by teaching salaries which are \$232 million for UC Berkeley and \$112 million for UC Santa Barbara.[2] We then calculate compensation savings by computing the difference in dollar amount of salary between UCB actual salary and what UCB would spend if its overhead rate were the same as UCSB. Dollars are reported with an M, indicating millions.

Function	UCB Salary	UCB rate	UCSB Salary	UCSB rate	Savings
Management	\$136M	59%	\$29M	26%	\$102M
Business/Finance.	\$97M	42%	\$31M	28%	\$43M
Office/Admin Support.	\$69M	30%	\$20M	18%	\$38M
Student Services.	\$64M	28%	\$19M	17%	\$34M
Computer,etc.	\$105M	45%	\$37M	33%	\$38M

2.2 Salary data

We also worked with salary data files provided by the California State Controller which includes per employee title along with 'Regular Pay' and 'Total Wages'[2]. This data is a different way of looking at the picture and includes all employees. Our analysis is heuristic but yields conclusions consistent with those above.

Here we categorized titles as direct teaching/research and public service titles as follows: we select all employees who are any form of Professor, Lecturer, Teacher, or Teaching Assistant and total their salaries for the teaching category, and select all Agronomists, Museum titles, and Curators, Research Scientist and Graduate Student Researchers and total their salaries for the research category.[3] We pulled and scanned the full list of job titles to include any that might be in this category. We define direct salary for employees with these titles, and define the salary of the remaining employees as overhead salary. Note that here we include both teaching and research in the direct salaries but the data also includes others that do not appear in IPEDS data.

For full details, code at [5] embodies our selection heuristics.

Regular Pay. Using the **'Regular Pay'** field for the direct employees described above yields as \$379 million and \$173 million out of total salaries \$1082 million and \$415 million for Berkeley and Santa Barbara respectively.

This yields effective overhead rates of 185% and 140% for UCB and UCSB respectively. Again, if UCB overhead rate was reduced to that of UCSB, Berkeley would save Berkeley \$170 million in salary or \$232 million in total compensation.

Barbara. It begins with the overhead salary and removes overhead allocated to research according to federal formula and then computes the effective overhead rate. This computation presumes neither spends more than the federally mandated overhead rate on research.

[2]We do this for consistency with the other numbers, in some sense the sum of the overheads reported in all the functional areas of which some are listed should equal the total reported in the first calculation above.

[3]This may well include titles associated with, for example, Lawrence Hall of Science, but we conservatively included these anyway.

Total Wages. Using **'Total Wages'** rather than base pay (e.g., including summer salary), we get $440 million and $194 million out of $1185 million and $447 million.

This yields effective overhead rates of 169% and 127%. Equalizing would save Berkeley $185 million in salary or $252 million in total compensation.

Adjusting for auxiliary. One could legitimately remove things like housing associated salaries from overhead since they are paid for from revenues generated by those activities themselves, even understanding that room and board fees may well be used for a wide variety of purposes. Thus, we use data from 2015 Consolidated Financial Reports for UCB and UCSB [9, 7] which suggest that auxiliary salaries and wages are $46 million and $36 million respectively.

With these adjustments to the total wage scenario we get effective overhead rates of 158% and 112%. Bringing Berkeley's overheads to UCSB's level would save Berkeley $180 million in salary or $245 million in total compensation.

3 Other Questions/Issues.

1. **Student health expenditures** from the Berkeley Consolidated Report [7] 2015 has a non-salary expense of $72 million. For Santa Barbara [9] this is $11 million. Admittedly, UCLA [8] also reports large non-salary expense for this category, but it is curious that Santa Barbara escapes it.

2. **The number of Affiliates/Non-Employees** has moved from 1921 in 2008 to 4209 in 2016 [1]. Who are these people? Do they incur expense? Are their salary expenses included in either the data submitted to the Federal government via IPEDS, or to the State Controller?

3. **Other Provisions** increased from a $20 million in the 2014 Consolidated Financial Statement [6] to $123 million in the 2015 Consolidated Financial Statement [7]. This amount is assigned to Cost of Instruction (as for example is the vast majority of the Deans offices). While we received some information that these are uncategorized expenses at the time of report preparation, it does seem to contribute to a roughly comparable increase in the total cost of instruction year over year as well between these two statements.

4. **Financial Aid**. We can also examine financial aid in terms or spending again by continuing to use instructional faculty as the denominator. Thus, the $135 million UCB spends results in a 58% effective overhead rate where $83 million that UCSB spends results in a 74% overhead rate. Here Berkeley spends significantly less than Santa Barbara in this normalized sense. This perhaps due to demographic differences but does help Berkeley with respect to expenses making its budget deficit a bit more puzzling.

References

[1] UC Berkeley. Calanswers Database: HR Census, 2017.

[2] California State Controller. 2015 University of California Data, 2016.

[3] National Center for Education Statistics. Integraed Postsecondary Education Data System(IPEDS):number and salary outlays for full-time nonmedical noninstructional staff by occupation: Academic year 2014-15, 2015.

[4] National Center for Education Statistics. Integrated Postsecondary Education Data System(IPEDS): number and salary outlays for full-time nonmedical instructional staff, by gender, and academic rank: Academic year 2014-15, 2015.

[5] Github. UC berkeley finance analaysis, 2017.

[6] University of California. Berkeley: Campus Financial Report 2013-2014, 2015.

[7] University of California. Berkeley: Campus Financial Report 2014-2015, 2015.

[8] University of California. Los Angeles: Campus Financial Report 2014-2015, 2015.

[9] University of California. Santa Barbara: Campus Financial Report 2014-2015, 2015.

[10] University of California. Revenue and Expense Trends: Fiscal Years 2011-2015, 2015.