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Changes in Faculty Composition Within the State University of New York System: 1985-2001

Abstract
[Excerpt] The last two decades of the twentieth century saw a significant growth in the share of faculty members in American colleges and universities that are part-time or are full-time without tenure-track status. Growing student enrollments faced by academic institutions during tight financial times and growing differentials between the salaries of part-time and non-tenure track faculty on the one hand, and tenured and tenure-track faculty on the other hand, are among the explanations given for these trends. However, surprisingly, there has been no recent econometric evidence to test whether these hypotheses are true.

Our study uses institutional level data provided to us by the Office of Institutional Research and Analysis of the State University of New York (SUNY) System to begin to address these issues. In the next section, we present background data on how the ratios of full-time lecturers to full-time professorial faculty and of part-time faculty to full-time faculty changed at SUNY during the fall 1985 to fall 2001 period. Counts of faculty numbers tell one little about who is actually teaching undergraduate students and so we also show how the share of undergraduate credit hours taught by part-time and non-tenure track faculty members increased during the part of the period for which we had access to credit hour data.

Section III presents a simple conceptual framework that illustrates why an institution's usage of part-time and non-tenure track faculty members should depend upon both the revenue per student received by the institution and the relative costs to the institution of the different types of faculty. While we have no data on the costs of part-time faculty members, we do have institutional level information for SUNY institutions for an eleven year period on the average salaries of tenured and tenure track faculty on the one hand, and of non-tenure track faculty on the other hand, as well as information on the revenue per student received by each institution each year. This enables us in section IV to estimate the roles that average salaries of both types of faculty members and revenues received by institutions play in explaining the observed changes in faculty composition.

Keywords
SUNY, faculty composition, institutional revenue, tenure, non-tenure

Comments

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CHANGES IN FACULTY COMPOSITION WITHIN THE STATE UNIVERSITY OF NEW YORK SYSTEM: 1985-2001

by

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I. Introduction

The last two decades of the twentieth century saw a significant growth in the share of faculty members in American colleges and universities that are part-time or are full-time without tenure-track status (Eugene Anderson 2002, Roger Baldwin and Jay Chronister 2001, Valerie Conley, David Leslie and Linda Zimbler 2002). Growing student enrollments faced by academic institutions during tight financial times and growing differentials between the salaries of part-time and non-tenure track faculty on the one hand, and tenured and tenure-track faculty on the other hand, are among the explanations given for these trends. However, surprisingly, there has been no recent econometric evidence to test whether these hypotheses are true.

Our study uses institutional level data provided to us by the Office of Institutional Research and Analysis of the State University of New York (SUNY) System to begin to address these issues. In the next section, we present background data on how the ratios of full-time lecturers to full-time professorial faculty and of part-time faculty to full-time faculty changed at SUNY during the fall 1985 to fall 2001 period. Counts of faculty numbers tell one little about who is actually teaching undergraduate students and so we also show how the share of undergraduate credit hours taught by part-time and non-tenure track faculty members increased during the part of the period for which we had access to credit hour data.

Section III presents a simple conceptual framework that illustrates why an institution's usage of part-time and non-tenure track faculty members should depend upon both the revenue per student received by the institution and the relative costs to the institution of the different types of faculty. While we have no data on the costs of part-

time faculty members, we do have institutional level information for SUNY institutions for an eleven year period on the average salaries of tenured and tenure track faculty on the one hand, and of non-tenure track faculty on the other hand, as well as information on the revenue per student received by each institution each year. This enables us in section IV to estimate the roles that average salaries of both types of faculty members and revenues received by institutions play in explaining the observed changes in faculty composition.

II. Background Data

The appendix table displays the 64 institutions that are part of the State University of New York. The institutions whose faculty employment decisions we analyze in this paper are the four university centers, which provide instruction at the baccalaureate, masters and doctorate levels and twelve of the thirteen university colleges, which provide instruction at the baccalaureate and masters levels.[1] These are the primary state operated campuses that provide instruction in a wide variety of subjects to bachelor's level students. Excluded from consideration are the specialized doctoral institutions (health sciences, optometry and forestry), the five statutory colleges at Alfred and Cornell whose instruction at the undergraduate level is in specialized fields, the system's thirty community colleges and the eight colleges of technology, which offer two-year and, in some cases, four year specialized degrees.

Table 1 presents information on the mean value across campuses of the ratio of full-time lecturers to full-time professorial faculty at the university centers and university colleges from the fall of 1985 to the fall of 2001. Virtually all of the professorial faculty

[1] The excluded university college is Empire State College, which provides instruction to nontraditional students throughout the state.

members are tenured or are on tenure tracks, while virtually all of the lecturers are not on tenure tracks. Excluded from these faculty counts are librarians and counselors with academic ranks, instructors and a few other specialized categories. Instructors are omitted because both tenure track and non-tenure track faculty are represented in their numbers.

In the fall of 1985, the average ratio of full-time lecturers to full-time professorial faculty was .048 in the university colleges and .059 in the university centers. However, as indicated by the numbers in parentheses, the standard deviation in this ratio across institutions was about .04 in the university colleges but only .018 at the university centers. While the ratio of lecturers to professorial faculty increased in some years and declined in others, by the fall of 2001 it had almost doubled to .092 at the university colleges and had increased by about one-third to .087 at the university centers.

Table 1 also presents information on the ratio of part-time faculty members to full-time faculty members at the two sets of institutions. These data are not directly comparable to the data previously discussed because all faculty members holding academic ranks, including instructors, librarians and clinical faculty are included in this series. Keeping in mind that the part-time faculty member numbers are head-count numbers, not full-time equivalent numbers, in the fall of 1985 the ratios of part-time to full-time faculty members were both a little bit larger than 0.36 at the university colleges and the university centers. The average ratio fluctuated over time in both sectors but by the fall of 2001, it had risen to .487 at the university colleges and .475 at the university centers; increases in the range of one-third as compared to the fall 1985 figures.

While lecturers presumably have higher teaching loads than their full-time tenure and tenure track colleagues, the body count ratios tell us nothing about the levels (lower division or upper division) or sizes of the undergraduate classes that they instruct vis-à-vis their full-time tenured and tenure track colleagues. Similarly, the body counts of part-time faculty convey no information about how many classes each part-time faculty member teachers or the levels and sizes of those classes.

Fortunately, since the fall of 1992, the SUNY *Course and Section Analysis System* (CASA) has tracked the enrollments in all classes taught at the university colleges and university centers. CASA also contains a unique code for the faculty member of record for each class, which, when matched to information in the faculty member's personnel file, allows one to determine if the instructor is a full-time tenure or tenure track faculty member, a full-time non-tenure track faculty member, a part-time non-tenure track faculty member, or falls into some other category.[2] The Office of Institutional Research and Analysis of the SUNY system used these two data files to compute for us the proportions of student credit hours that were generated each fall between 1992 and 2001 at the university colleges and the university centers, broken down by lower division and upper division classes, and these proportions appear in table 2. [3]

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[2] The latter include people whose primary appointment is not as a faculty member donating their teaching services and people hired on temporary service funds.

[3] Excluded from these proportions are credit hours taught by graduate teaching assistants because it is difficult to tell from the data system if graduate teaching assistants are teaching their own stand alone classes or discussion sections of larger lecture classes. The former ideally should be included in our tabulations in the part-time faculty member category, while the latter should not. While the omission will cause us to understate this proportion for the university centers (there are few graduate teaching assistants at the university colleges), unless the number of graduate assistants increased during the period relative to the number of full time professorial faculty members, it would not affect that trends that we observe.

Data on the number of teaching and research assistants employed on state funds is not published by the SUNY system and the data that is collected are body count numbers that tell us little about teaching loads. From a search of individual institution reports that were available in the SUNY Office of Institutional Research, we compute that between 1991 and 2001 the number of teaching and research

Panel A contains the information for the university centers. In the fall of 1992, the shares of undergraduate credit hours generated by tenured and tenure track faculty were .810 for all courses, .783 for lower division classes and .851 for upper division classes. These shares all fell steadily during the period and by the fall of 2001 they reached .584, .558, and .624, respectively. Put another way, the share of credit hours generated by tenured and tenure track faculty fell by over .22 for both lower and upper division classes and by the fall of 2001, only 58% of all undergraduate credit hours were generated by tenured and tenure track faculty at these institutions. As table 2 indicates, the shares of credit hours generated by part-time faculty and non-tenure track full-time faculty members both increased during the period.

Panel B contains similar information for the university colleges. Because the focus of these institutions is more heavily on undergraduate education than it is at the university centers, in the fall of 1992 the university colleges generated a greater share of their undergraduate credit hours using tenured and tenure track faculty members than the university centers did. The university colleges' shares were .843, 821 and .867 for total undergraduate credit hours, lower division course credit hours and upper division course credit hours, respectively, that semester. However, by the fall of 2001, these shares had fallen to .699, .644 and .753, respectively; in each case the reduction in the share was smaller in magnitude than the corresponding reduction that occurred at the university centers. In each case the reduction was made up by a roughly doubling in the shares of credit hours generated by part-time and full-time non-tenure track faculty members.

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assistants employed in the aggregate at the 4 university centers increased by only 6.3%. Hence it is unlikely that the exclusion of graduate teaching assistants substantially influenced the trends that we observed.

How have these changes affected undergraduate students at these SUNY campuses? The honest answer is that we don't know! Surprising little research has been conducted nationwide on whether the amount that students learn when the are taught by part-time or full-time non tenure track faculty members is less than or more than what they would have learned if they had been taught by full-time tenure-track faculty, how the answer to this question varies across categories of institutions, subject matter areas and course levels and how the composition of an institution's faculty members across the different types of faculty influences students' persistence in college and progress on to higher levels of education.[4]

III. Analytical Framework

Consider an academic institution, which, for simplicity, hires only two types of faculty members - tenure and tenure track (F_T) and non-tenure track (F_N). The latter category includes both full-time and part-time faculty members. The institution is assumed to derive utility from its employment of each category relative to its number of full-time equivalent enrolled students (E).

(1) $U\ (F_T/E,\ F_N/E)$

Tenure and tenure track faculty members are important to the academic institution because in addition to teaching, they advise students about their courses of study and

[4] One study of community college students that randomly assigned them to sections of a remedial mathematics course that were taught by part-time and tenure track full-time faculty found no differences in the amounts that students learned (Bolge 1995)). Another study of a Midwestern comprehensive institution found, using four years of data on fall entering freshman, that the greater the proportion of part-time faculty that students had during their first semester in college, the lower the probability that they would return for their second semester (Harrington and Schibik 2001). Studies by economists have tended to focus on how instructor type (including graduate students) influences the amount that students learn in freshman classes (Finegan and Siegfried 1998, Lynch and Watts 1989) and the results are not always consistent across studies. Bettinger and Long (2003) are using data from Ohio public 4-year colleges to study the impact of adjunct faculty (as compared to full-time faculty regardless of tenure or tenure track status) and their preliminary results suggest that adjuncts do not have negative effects on students.

provide advice and letters of recommendation for postgraduate education and employment opportunities, they conduct research, share governance responsibilities with the administration and the trustees and provide long-term stability to the institution. Full-time non-tenure track faculty may be important to the institution because, absent the responsibility to produce research, they can be assigned higher teaching loads and can specialize in teaching. Part-time non tenure track faculty are valuable because in areas in which there is a large supply of people willing to work in such positions they provide the institution with an inventory of instructors who can be hired at the last moment to meet fluctuations in demand. In fields that deal directly with "real world" matters, such as engineering and business, full-time employed professionals willing to teach part-time also provide a type of specialized instruction that institutions might otherwise not be able to offer. In a world in which revenue sources are increasingly uncertain, both types of non- tenure track faculty members provide the academic institution with flexibility in meeting rapid changes in its financial situation that the tenure system would otherwise constrain it from doing

Suppose that the average salary per full-time tenure and tenure track faculty member to the institution is S_T and the average salary per non-tenure track faculty member is S_N. If the funds per full-time equivalent student that the institution has available to employ faculty are B/E and the institution seeks to maximize its utility from hiring faculty members subject to the constraint that the employment budget is exhausted, then the employment demand curves (2) and (3) will result.

(2) $F_T/E = F_T/E\ (S_T, S_N, B/E)$

(3) $F_N/E = F_N/E\ (S_T, S_N, B/E)$

The employment of each type of faculty per full-time equivalent student will depend upon the salaries for both types of faculty members and the funds that it has available to employ faculty members. Other factors held constant, when a faculty type's average salary level rises an institution will hire fewer of that type of faculty member and substitute more faculty members of the other type. An increase in the per full-time equivalent student faculty employment budget will lead to an increase in both types of faculty members per full-time equivalent student if both types of faculty members are "normal goods" in the institution's utility function. One might conjecture that institutions that do not have a strong research component in their faculty members' portfolio of responsibilities would treat both tenure and tenure track faculty and non-tenure track faculty as normal goods. However, institutions that highly value research might treat non-tenure track faculty as "inferior goods" and employ fewer of them as their faculty employment budget expands.

IV. Econometric Analyses

In this section, we employ 11 years of institutional level data that span the fall 1991 to fall 2001 period to estimate variants of equations (2) and (3) for the SUNY university colleges and university centers. Because no information is available on the average salaries paid to part-time faculty members, we focus our attention only on the employment of full-time faculty members. As noted above, all professorial faculty members (professors, associate professors and assistant professors) are included as tenured and tenure track faculty members and all lecturers are treated as non-tenure track faculty members.

Inasmuch as the funds available to employ faculty depend upon the revenues coming into the institution, in the estimating equation we replace the per full-time equivalent student employment budget of an institution by its per full-time equivalent student revenues (R/E) that are available to be used to hire faculty and for other educational purposes.[5] We estimate these equations in logarithmic form and include institutional level fixed effects in each equation to control for differences in the nature of the curriculum across institutions and the availability of non-tenure track faculty members in the geographic area around each institution that might affect institutional behavior with respect to hiring the two types of faculty members.

Our estimated equations appear in table 3. Panel A presents our estimates when we pool data from the university colleges and university centers together, while panels B and C, respectively, present estimates for the university college and university center samples.[6]

The results for all three samples suggest when the average professorial salary increases by one percentage point, holding other variables including revenue coming into an institution constant, the SUNY institutions respond by reducing their employment of professorial (tenure and tenure track faculty members) by about one percentage point. Such an increase in average professorial faculty salaries also leads to an almost five percentage point increase in the number of lecturers (non-tenure track faculty) employed

[5] The revenue data come from the "All Funds Summary" for each institution provided by the SUNY Central administration each year and include state tax support revenue, tuition revenue, endowment income and annual giving revenues. The total for each institution will differ from the revenue figures reported in the Integrated Postsecondary Education Data System (IPEDs) for each campus because these figures exclude debt service revenues, hospital related revenues, residence hall and other auxiliary related revenue sources (which are suppose to be break even enterprises), external sponsored program revenues, and revenues that come to the institution for student financial aid from the federal and state governments. We are grateful to Peggy O'Day from the SUNY Comptrollers Office for providing us with these data.

[6] Formal F tests suggest that the coefficients differ between the university college and the university center samples.

at SUNY institutions. Similarly, an increase in the average lecturer salary of one percentage point leads to a decline in the employment of lectures with the percentage point decline being much larger at the university colleges than it is at the university centers. However, at neither the university centers nor the university colleges is the employment of tenure and tenure track faculty statistically significantly sensitive to the lecturer average salary level.

Changes in the revenue available to hire faculty and that can be used for other general purposes appear to have differential effects at the university colleges and the university centers. At the colleges, an increase in revenue leads to employment of more tenure and tenure track faculty but no significant change in employment of lecturers. In contrast, at the university centers, an increase in revenue is associated with a decline in the employment of lecturers that is statistically significantly different from zero at the .10 level of significance but no significant increase in tenure track faculty employment.[7] Apparently lecturers, who have no research responsibilities, are viewed as "inferior goods" at the university centers.[8] The failure of the university centers to expand tenure track faculty employment in response to an increase in revenue per student may reflect the growing start up costs of hiring new faculty (which we discuss below) which research universities now must incur when the seek to attract scientists and engineers to their faculty.

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[7] We caution that the university center findings are sensitive to the choice of sample period. When we split the sample period in two (fall 1991-fall 1996 and fall 1997-fall 2001) and replicated our analyses we found that an increase in revenues was associated with increases in employment of tenured and tenure track faculty in both sub periods and a decline in lecturers employment only in the latter sub period. However, these findings are based upon a very small number of change observations (20 and 16 respectively)

[8] We also tested whether the responsiveness of faculty and lecturer employment levels to the institutional revenues varied across types of revenue (such as tuition, state appropriation, annual giving and endowment) but we could not "tease out" any significant differences.

Table 5 summarizes the percentages by which the average professorial salary, the average lecturer salary, and the average revenue received by institutions per full-time equivalent student, changed during the fall 1991 to fall 2001 period. For all three samples, average professorial salaries grew by at least 10 percentage points more than average lecturer salaries during the period. Given the estimates we presented in table 3, it is not surprising that the usage of lecturers grew relative to the usage of full-time professorial faculty during the period.

Why did the ratio of full-time lecturers to professorial faculty grow by more in the university centers than it did at the university colleges during the 1991 to 2001 period (table 1)? One possible explanation relates to the difference in the missions of the university colleges and the university centers. The latter are all doctoral degree producing universities in which faculty research contributes much more heavily to the reputation of the institution than it does at the university colleges.

The start up cost packages that must be provided to scientists and engineers to attract both new assistant professor and senior professors are high. For example, a fall 2002 survey of research and doctoral universities (which included all 4 SUNY university centers) undertaken by the Cornell Higher Education Research Institute indicated that the start up packages provided to new assistant professors in science and engineering fields at public research universities average over $300,000 and those for senior faculty over $700,000.[9] Absent large endowments or large annual giving streams, funding for these packages often must come from the operating budget of the public universities and this limits their ability to expand their tenure track faculty levels.

[9] Ehrenberg, Rizzo and Jakubson (2003), table 2

V. Concluding Remarks

Using data from the SUNY system, our paper has provided initial evidence that the growing use of full-time non-tenure track faculty is at least partially due to the resource constraints that institutions face and the increasing cost of professorial faculty relative to lecturers. Colleges and universities have been able to attract lecturers at salaries that have been falling relative to their tenure track colleagues' salaries because of the number of PhDs available to fill such positions in many fields. However, this does not imply that lecturers are happy in their roles and the growing salary gap between them and their tenure track counterparts is undoubtedly one of the main forces leading to efforts by various unions to unionize full-time non-tenure track faculty members.[10] Hence, the relative cost advantage of full-time non-tenure track faculty members may diminish in the future.

The lack of availability of data on the salaries of part-time faculty members in the SUNY system prevented us from conducting similar analyses for their increased usage. However, we suspect that findings from such a study would have been similar and that the campuses are making increased use of part-time faculty for economic reasons also.

Of course parents of college age students, taxpayers more generally, and state legislators and governors may reasonably ask why they should be concerned about the growing use of part-time and full-time non tenure track faculty members? As we indicated above, surprisingly very few studies have addressed whether the increased substitution of part-time and full-time non tenure track faculty for tenure track faculty at higher education institutions leads to adverse academic outcomes for undergraduate

[10] By way of examples in May 2003 non-tenure track faculty members at the University of Michigan voted to create a union to represent the 1300 full-time and part-time non-tenure track faculty at the university and adjuncts previously had formed a union at New York University (Smallwood 2003a, 2003b)

students, such as less learning in any class, longer times to degree, lower graduation rates, or a lower proportion of graduates going on to post graduate study. Analyses of these issues will be essential if public institutions want to make the case to their state legislators and governors that better funding would enable them to increase their usage of tenure track faculty members and that this would enhance undergraduate students' educational outcomes.

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TABLE 1

Mean Values of Lecturers per Full-Time Professorial Faculty and Ratio of Full-Time to Part-Time Faculty at the SUNY University Centers and University Colleges
(Standard Deviations in Parentheses)

	Full-Time Lecturers Per Full-Time Professorial Faculty[a]		Ratio of Part-Time to Full-Time Faculty[b]	
Year	University Colleges	University Centers	University Colleges	University Centers
1985	0.048 (0.040)	0.059 (0.018)	0.363 (0.304)	0.364 (0.122)
1986	0.044 (0.044)	0.058 (0.018)	0.362 (0.311)	0.356 (0.093)
1987	0.047 (0.045)	0.059 (0.023)	0.380 (0.303)	0.378 (0.091)
1988	0.047 (0.047)	0.052 (0.020)	0.417 (0.344)	0.394 (0.088)
1989	0.051 (0.039)	0.050 (0.015)	0.398 (0.339)	0.375 (0.056)
1990	0.053 (0.032)	0.048 (0.016)	0.372 (0.337)	0.344 (0.031)
1991	0.058 (0.031)	0.042 (0.018)	0.291 (0.360)	0.275 (0.085)
1992	0.053 (0.029)	0.042 (0.019)	0.296 (0.373)	0.270 (0.076)
1993	0.056 (0.027)	0.042 (0.024)	0.291 (0.360)	0.282 (0.080)
1994	0.054 (0.031)	0.045 (0.023)	0.291 (0.372)	0.295 (0.134)
1995	0.051 (0.026)	0.038 (0.010)	0.331 (0.323)	0.306 (0.071)
1996	0.050 (0.031)	0.042 (0.017)	0.435 (0.310)	0.409 (0.131)
1997	0.064 (0.042)	0.050 (0.022)	0.483 (0.379)	0.466 (0.166)
1998	0.076 (0.062)	0.065 (0.031)	0.497 (0.426)	0.485 (0.151)
1999	0.069 (0.047)	0.081 (0.040)	0.534 (0.538)	0.547 (0.201)
2000	0.085 (0.060)	0.083 (0.041)	0.548 (0.414)	0.507 (0.133)
2001	0.092 (0.066)	0.087 (0.044)	0.487 (0.346)	0.475 (0.096)

Source: *Employee Summaries of Institutions Under the Program of the State University of New York: Statistical Release No. 405 – Fall 2001* (Albany, NY: Office of Institutional Research and Analysis of the State University of New York, 2002) – tables 1 and 2 and comparable data for earlier years

[a] Full-time professorial faculty include professors, associate professors and assistant professors whose primary function is research, instruction or public service. Excluded are librarians and counselors with academic rank, instructors and a few other specialized categories.

[b] Faculty include all faculty members holding academic rank, including librarians and clinical faculty. The part-time numbers are head-count numbers and do not represent the number of full-time equivalent part-time faculty members.

TABLE 2

Share of Undergraduate Credit Hours Generated By Different Types of Instructors in the Fall Semester of Each Academic Year at the SUNY University Centers and University Colleges[a]

A) University Centers

	Share Professionals	Share Other Faculty (Part-Time)	Share Other Faculty (Full-Time)	Share Misc. Categories
Total				
1992	0.810	0.055	0.045	0.090
1993	0.730	0.126	0.053	0.091
1994	0.717	0.143	0.054	0.086
1995	0.726	0.136	0.054	0.085
1996	0.689	0.166	0.059	0.085
1997	0.638	0.180	0.087	0.095
1998	0.623	0.187	0.094	0.096
1999	0.625	0.176	0.123	0.076
2000	0.604	0.217	0.135	0.044
2001	0.584	0.213	0.141	0.063
Lower Division				
1992	0.783	0.063	0.045	0.109
1993	0.694	0.143	0.050	0.114
1994	0.683	0.163	0.056	0.097
1995	0.677	0.151	0.060	0.111
1996	0.647	0.192	0.060	0.101
1997	0.602	0.207	0.091	0.100
1998	0.576	0.210	0.102	0.112
1999	0.576	0.189	0.129	0.106
2000	0.552	0.227	0.135	0.086
2001	0.558	0.218	0.149	0.075
Upper Division				
1992	0.851	0.044	0.044	0.061
1993	0.789	0.099	0.058	0.055
1994	0.765	0.116	0.051	0.067
1995	0.780	0.113	0.044	0.063
1996	0.743	0.132	0.057	0.068
1997	0.698	0.148	0.083	0.071
1998	0.695	0.157	0.082	0.066
1999	0.686	0.153	0.110	0.050
2000	0.659	0.189	0.127	0.025
2001	0.624	0.205	0.127	0.045

Table 2 (continued)

B) University Colleges

	Share Professionals	Share Other Faculty (Part-Time)	Share Other Faculty (Full-Time)	Share Misc. Categories
Total				
1992	0.843	0.079	0.061	0.017
1993	0.805	0.115	0.066	0.014
1994	0.786	0.124	0.074	0.016
1995	0.785	0.129	0.072	0.014
1996	0.783	0.123	0.075	0.019
1997	0.757	0.133	0.089	0.021
1998	0.725	0.141	0.113	0.021
1999	0.717	0.153	0.116	0.014
2000	0.703	0.157	0.124	0.016
2001	0.699	0.147	0.138	0.016
Lower Division				
1992	0.821	0.092	0.062	0.025
1993	0.766	0.147	0.068	0.020
1994	0.755	0.156	0.071	0.018
1995	0.761	0.158	0.064	0.018
1996	0.753	0.151	0.071	0.025
1997	0.719	0.164	0.091	0.027
1998	0.682	0.179	0.115	0.025
1999	0.660	0.199	0.123	0.018
2000	0.659	0.195	0.126	0.020
2001	0.644	0.183	0.154	0.019
Upper Division				
1992	0.867	0.064	0.060	0.008
1993	0.850	0.079	0.063	0.008
1994	0.819	0.091	0.077	0.014
1995	0.810	0.099	0.080	0.011
1996	0.813	0.094	0.080	0.013
1997	0.796	0.102	0.087	0.015
1998	0.769	0.104	0.111	0.017
1999	0.776	0.105	0.108	0.011
2000	0.748	0.118	0.122	0.011
2001	0.753	0.112	0.122	0.012

Source: Tabulations provided by the Office of Institutional Research and Analysis of the State University of New York from the CASA (Course and Section Analysis System)

Table 2 (continued)

Where

Professionals – tenure and tenure-track faculty with professorial titles

Other Faculty – faculty not on tenure tracks, including lecturers, instructors, adjuncts and visiting professors

Misc. Categories – include contributed time from people not primarily on faculty appointments and people hired on temporary service funds

[a] Excluded from these computations are all classes taught by graduate teaching assistants because of the difficulty of inferring from the CASA system if these classes are independent courses or sections of other courses.

TABLE 3
Professorial Faculty per Student and Lecturer per Student Equations:
Fall 1991 to Fall 2001 Period[a]
(Absolute value of t statistics in parentheses)

	Log (All Professorial Faculty per Student)	Log (Lecturers per Student)
A) Overall Sample[b]		
Log (Ave. All Prof. Faculty Salary)	-1.105 (8.02)	4.467 (5.24)
Log (Ave. Lecturer Salary)	0.058 (0.68)	-2.676 (5.05)
Log (Revenue Per Student)	0.416 (5.75)	-0.172 (0.38)
R^2	0.768	0.828
n	173	173
B) University Colleges		
Log (Ave. All Prof. Faculty Salary)	-1.089 (5.70)	4.745 (3.94)
Log (Ave. Lecturer Salary)	0.049 (0.44)	-3.191 (4.62)
Log (Revenue Per Student)	0.442 (5.20)	-0.014 (0.03)
R^2	0.710	0.830
n	129	129
C) University Centers		
Log (Ave. All Prof. Faculty Salary)	-0.756 (3.79)	4.753 (4.58)
Log (Ave. Lecturer Salary)	0.042 (0.37)	-1.106 (1.84)
Log (Revenue Per Student)	0.049 (0.32)	-1.474 (1.83)
R^2	0.917	0.820
n	44	44

[a] Also included in each equation are institutional fixed effects
[b] Includes four university centers and 12 university colleges. The university college sample consists of 129 observations because in three years one of the university colleges did not employ any lecturers and hence average lecturer salary data were not available for the college in those years.

Table 4

Percentage Changes During the Fall 1991 to Fall 2001 Period in Nominal Terms

	Average Professorial Salary	Average Lecturer Salary	Average Revenue Per FTE Student
Overall Sample	26.1	15.1	40.2
University Colleges	23.4	12.5	38.9
University Centers	32.1	22.1	42.3

Source: Authors' calculations. These numbers are unweighted averages of the individual institution average values.

Appendix Table

The State University of New York (SUNY) System (Fall 2002)

I. University Centers/Doctoral Granting Institutions (4) - Albany, Binghamton, Buffalo, Stony Brook

II. University Colleges (13) - Brockport, Buffalo State, Cortland, Empire State College, Fredonia, Geneseo, New Paltz, Old Westbury, Oneota, Oswego, Plattsburgh, Potsdam, Purchase

III. Specialized University Centers/Doctoral Granting Institutions (4) –Brooklyn Health Science Center, College of Optometry, College of Environmental Science and Forestry, Syracuse Health Science Center

IV. Statutory Colleges/Doctoral Granting Institutions (5) – College of Ceramics at Alfred and the Colleges of Agriculture and Life Sciences, Human Ecology, Veterinary Medicine and the School of Industrial and Labor Relations at Cornell

V. Community Colleges (30) – Adirondack, Broome, Cayuga County, Clinton, Columbia-Greene, Corning, Dutchess, Erie, Fashion Institute of Technology, Finger Lakes, Fulton Montgomery, Genessee, Herkimer County, Hudson Valley, Jamestown, Jefferson, Mohawk Valley, Monroe, Nassau, Niagara County, North Country, Onondaga, Orange County, Rockland, Schenectady County, Suffolk County, Sullivan County, Tompkins Cortland, Ulster County, Westchester

VI. Colleges of Technology (8) – Alfred, Canton, Cobleskill, Delhi, Farmingdale, Maritime, Morrisville, Utica-Rome