美國會計博士班畢業生從事教職之研究分析

李志文　林美花

中文摘要本研究彙總統計於1976年、1980年，及1985年三個時點及時段，畢業於美國前四十所設有會計博士班學校的畢業生從事教職之狀況。其內容包括下列幾項：(1)彙總畢業於該四十所大學博士班之學生至同一級學校教書之分配狀況，並依比率與人數加以排名；(2)根據畢業及從事教職之學校是否爲公、私立，分析二者是否有關；(3)將過去學者對各博士班依不同標準所做之排名與本研究根據從事教職之排名做相關性分析，以探討會計博士之勞力市場與畢業學校品質之相關程度。

李志文為美國杜蘭大學教授
林美花為國立政治大學副教授

ACADEMIC EMPLOYMENT OF ACCOUNTING DOCTORAL GRADUATES

C. Jevons Lee
Tulane University
Mei-Hwa Lin
National Cheng Chi University

Abstract

This paper studies the pattern of academic employment of accounting doctoral programs. The paper shows how many doctoral graduates of top 40 accounting departments are employed by the same class of institutions at three point in time, 1976, 1980, and 1985. Moreover, the paper examines the employment pattern in terms of major private and public institutions. Using the Spearman correlation coefficient, we show some characteristics of perceived quality that may be associated with the academic employment of doctoral graduates. We also find evidence of segmentation of academic accountants' labor market that is consistent with Nikolai and Bazley's coalition formation hypothesis.

1. Academic Employment of Accounting Doctoral Graduates

A dominating concern for a potential doctoral student is the quality of the doctoral program and the academic employment of the doctoral graduates. While many studies have been devoted to the measurement of a program quality in terms of various proxy variables such as survey opinion, number of publications and number of citations, little information has been

gathered about academic employment of doctoral graduates. The purpose of this paper is to provide information about the academic employment of the doctoral graduates in the U.S. Moreover, the paper will examine the relationship between various characteristics of the perceived quality of doctoral programs and the academic employment of their graduates.

The three frequent measures for institution quality are:

1. survey opinions (Carpenter et al., 1974);

2. number of publications in major journals (Bazley and Nikolai, 1975; Andrews and McKenzie, 1978; Jacobs et al., 1986); and

3. number of citations (Brown and Gardner, 1985).

Although all these measurements can affect an institution's reputation, they may not be equally correlated with the academic employment of their graduates.[1] It would be of great interest for prospective doctoral students as well as for program administrators to know what aspect of an institution's reputation is closely associated with the academic employment of the institution's doctoral graduates.

The ability to place graduates in top accounting departments can itself be viewed as a measure of quality. To the extent that various proxy variables measure different aspects of quality and reputation, this paper shows how the academic employment of an institution's graduates complements other measures of quality in the literature.

Moreover, Nikolai and Bazley (1977) applied the theory of organizational interaction to show that coalition formation among accounting departments is a function of perceived prestige and geographic location. They demonstrated that schools tend to hire graduates from institutions with similar characteristics. Another purpose of this paper is to revisit Nikolai and Bazley's study with updated and expanded data.

2. Ranking Accounting Departments

[1]Two other approaches can be found in the literature . Koch, Merino, and Berman (1984) analyzed the publications of accounting doctoral graduates. Snowball (1986) studied the accounting department's academic strength in the area of accounting experiments on human judgement.

Ranking institutional quality attracts continuous interest of students, educators, and administrators. In the literature, the reputation of an accounting department is sometimes measured by the quantity and quality of publications produced by the department's students and faculty. In other circumstances, a more direct measurement of reputation is adopted by surveying the opinion of faculty and administrators. A brief literature review is given here to set the stage for our analysis.

Carpenter, Crumbley, and Strawser (1974) ranked accounting faculties and doctoral programs according to the survey of accounting educators' opinions. Twenty-nine institutions were ranked in their study. Taking a different approach, Bazley and Nikolai (1975) ranked accounting departments by counting the lines of authorship in the Accounting Review, Journal of Accounting Research, The Journal of Accountancy, and Management Accounting for a period from January 1968 through July 1974. They assigned publication credits to accounting departments according to three different criteria: one is based on the location of the publishing faculty member at the time of publication, the second is based on the location of the publishing faculty member in the 1974-75 academic year, and the third is based on the institution that granted the author's doctoral degree.

Andrews and McKenzie (1978) adjusted Bazley and Nikolai's (1975) results by attaching a quality weight to each journal. In an effort to update Bazley and Nikolai's study, Jacobs, Hartgraves, and Beard (1986) evaluated the quality of accounting doctoral programs in terms of the number of articles published by their doctoral graduates in eight journals from January 1972 through December 1984. These journals include, in addition to the four journals in Bazley and Nikolai (1975), Financial Executive, Internal Auditor, Abacus, and CPA Journal.

Taking a fresh approach, Brown and Gardner (1985) assessed the research contribution of accounting faculty members and doctoral graduates according to the number of times their papers were cited. The 1976-1982 volumes of four journals, Accounting Organizations and Society, Journal of Accounting and Economics, Journal of Accounting Research, and The Accounting Review, were analyzed for the purpose of ranking accounting departments.

In this paper, we examine the academic employment of doctoral graduates from various accounting programs. All accounting doctoral programs

are classified into "top" institutions and the "other" institutions. We define a top accounting department as the institution which is included in above rankings. All these top accounting departments have doctoral programs; they are the major demanders and suppliers in the labor market of academic accountants. The doctoral program that is not included in above rankings is grouped as the "other" institution.

3. Data and Methodology

Our study is composed of three basic elements: collecting the data about the faculty members who teach in top accounting departments, the estimation of a transition matrix and the estimation of marginal transition probabilities.

We collect a sample of 40 top accounting departments from the four following articles:

1. The 29 accounting departments ranked in Table 2 of Carpenter, Crumbley, and Strawser (1974, hereafter CCS).

2. The 15 accounting departments ranked in Bazley and Nikolai (1975, hereafter BN).

3. The 25 accounting departments ranked in Brown and Gardner (1985, hereafter BG).

4. The 25 accounting departments ranked in Table 2 of Jacobs, Hartgraves, and Beard (1986, henceforth JHB).

Names of faculty members teaching at these forty schools, their doctoral degrees, and the year of their graduation were obtained from Hasselback's Accounting Faculty Directory. Only individuals who have a doctorate with an accounting concentration were selected.[2] From these data, we can derive

[2]In Hasselback's Accounting Faculty Directory, a dot after the graduating year denotes a doctorate with an accounting concentration. Otherwise, it would be assumed that the person listed has a doctorate from other disciplines. Unfortunately, errors were found in these denotations, even though every effort was made to keep the information as correct as possible. Moreover, to improve its accuracy, we sent the preliminary report of this paper to the chairpersons of all forty ranked schools for data confirmation. However, the response rate is very low.

a transition matrix G as in equation (1)

$$G = \begin{bmatrix} x_{1,1} & \cdots & x_{1,40} \\ \cdots & \cdots & \cdots \\ \cdots & x_{i,j} & \cdots \\ \cdots & \cdots & \cdots \\ x_{40,1} & \cdots & x_{40,40} \end{bmatrix} \tag{1}$$

where $x_{i,j}$ is the number of graduates from school i teaching in the school j. The transition matrix illustrates how an object of observation moves from one state to another state of nature. For example, Leontief's input-output table is a transition matrix.

The sum of each row in equation (1), $x_i = \sum_i x_{i,j}$, is the number of graduates from school i teaching at top accounting departments. Let y_i be the total number of graduates from school i, then the percentage of graduates from department i teaching in a particular accounting department j, $p_{i,j}$, would be $x_{i,j}/y_i$. The value of $p_{i,j}$ is an estimate of transition probability. Hence, we can calculate the marginal transition probability, p_i, from equation (2)

$$p_i = \sum_i p_{i,j} = x_i/y_i \tag{2}$$

The value of p_i indicates the probability that a graduate of school i will obtain a teaching position in one of top schools.

The marginal transition probability indicates the chance for a subject (say, a student) to move from the initial state i to an ending state j. For example, the chance that a T University graduate will enter a medical school and the chance that a W University graduate will find a job in investment banking are marginal transition probabilities. The study in Nikolai and Bazley (1977) is an analysis of transition matrix G, whereas this study is an analysis of marginal transition probabilities p_i.

4. The Placement Pattern

Three volumes, 1986, 1981, and 1976, of Hasselback's Accounting Faculty Directory are analyzed.[3] In each volume, we calculate the transition matrix and transition probability for graduates from top 40 accounting

[3]we started this project in 1987. The latest issue available then was 1986 (for the

departments. Moreover, we group the graduates according to their graduating years by three time spans. First, we group all graduates within the past five years (e.g., 1981-85 graduates in the 1986 volume). Second, we group all graduates of past ten years (e.g., 1976-85 graduates in the 1986 volume). Third, we group all graduates who are still active in teaching (e.g., all graduates in the 1986 volume).

The five-year and ten-year cut-offs for data grouping roughly match the career milestones of an average doctoral graduate. Persons who graduated within the most recent five years are generally at the assistant professor level, with a few exceptions of associate professor, and those who received their doctoral degree within the most recent ten years are mostly assistant professors and associate professors, with some exceptions of full professor. This matching is not perfect; it is adopted for convenience.

The employment of a junior faculty member (a recent graduate within five years) may depend very much on the reputation of his/her alma mater and that of his/her dissertation advisors. The employment of a more senior faculty member may depend on training, drive, and other factors that have less to do with the reputation of his/her alma mater. It would be interesting to see whether the employment pattern of the recent graduates is different from those elder graduates. Moreover, faculty are known to move around. In so doing, at any point in time, they may not be at a top accounting department. Measuring the employment pattern over three different time horizons can alleviate the measurement error arising from faculty mobility.

Table 1 summarizes the sample attributes. The first row shows that among the 2,405 doctorates who graduated from top 40 accounting departments before 1985, 51 teach at their own alma mater and 440 teach at one of top 40 accounting departments. Only 56 out of 496 (11%) faculty in top 40 accounting departments are "outsiders". Hence, in 1985 18.3% (440/2405) of graduates from top 40 schools teach at top 40 schools and they hold 89% (440/496) of the faculty positions in these schools, while only 6% (56/936) of graduates from other schools teach in top 40 schools. These results are consistent with the findings in Nikolai and Bazley (1977).

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academic year 1986-87). We choose three time points of five years interval so that we can measure the employment pattern of the very recent graduates, "semi-established" graduates and "well-established" graduates. Naturally, the choice of the five-year time interval is rather ad hoc.

TABLE 1
Sample Summary

A Period of Graduation Top	B Total # of Graduates from Top 40 Schools	C # of Graduates Teaching in Alma Mater	D # (%) of Graduates Teaching in Top 40 Schools	E # (%) of Graduates from Other Schools Teaching in Top 40 Schools	F Total # of Faculty in 40 Schools
Up to 1985	2405	51 (2.12%)	440 (18.3%)	56 (6.0%)	496
76-85	854	18 (2.11%)	222 (26.0%)	46 (7.1%)	268
81-85	430	7 (1.63%)	129 (30.0%)	26 (7.3%)	155
Up to 1980	1975	55 (2.78%)	401 (20.3%)	27 (4.7%)	428
71-80	982	20 (2.04%)	233 (23.7%)	24 (4.9%)	257
76-80	424	9 (2.12%)	141 (33.3%)	17 (5.8%)	158
Up to 1975	1551	52 (3.35%)	331 (21.3%)	10 (3.5%)	341
66-75	1009	17 (1.68%)	202 (20.0%)	10 (4.1%)	212
71-75	558	8 (1.43%)	130 (23.3%)	7 (3.6%)	137

Notes:

1. Data are collected from 1986, 1981, and 1976 Hasselback's Accounting Faculty Directory.
2. The period specified in column A includes both ends. For example, the doctoral students that graduated in 1976-85 include those graduated in 1976 and 1985.
3. Graduates in column D also include those in column C.

However, the statistics in the past 15 years also show an increase in both number and percentage of doctorates graduated from other schools teaching in top 40 schools. The third row shows that about 30% of recent doctoral graduates (during 1981- 85) from top 40 accounting departments have an appointment in top 40 accounting departments, while 7.3% of recent doctoral graduates from other accounting departments get this type of position.

Schultz, Meade and Khurana (1989) documented that the academic environment for accounting professors has changed over the period of 1961-1987; the average reported success rates for assistant professors seeking promotion and tenure decline precipitously. This paper shows that the academic market for doctoral graduates has changed in a different way. Comparing three periods of graduations in Table 1 (1971-75, 1975-80, and 1981-85), we can see that the chance for a graduate from a top 40 school to find employment in a school of same class increased in the late 70s (from

23.3% in 1971-75 to 33.3% in 1976-80) but becomes stagnant in the 1980s. On the other hand, the chance for a graduate from a other-than-top-40 school to find employment in a top 40 school steadily increased from 3.6% in 1971-75 to 7.3% in 1981-85.

The ranking of doctoral programs in terms of percentage of graduates teaching at top 40 accounting departments, by different periods is shown in Table 2. The top five schools for the period up to 1985, 1980, and 1975 are the same, except for some changes in their relative rankings. These schools, Rochester, Carnegie- Mellon, Kansas, Stanford, and Cornell, have at least two features in common. First, these programs are all relatively small. Their sizes are presented in the last column of Table 3, which shows that Rochester granted seven Ph.D.'s up to 1985, Carnegie-Mellon 16, Kansas 13, Stanford 45, and Cornell 20. In contrast, the top two schools rated in Table 3, Illinois and Texas, have respectively 268 and 164 doctoral graduates. Second, all the five schools emphasize interdisciplinary research; there are no clear departmental boundaries in these schools.

Columns (2) and (3) of Table 2 respectively present the percentage of doctoral graduates of the most recent 10 years and 5 years who are now teaching in top 40 schools. Hence, Column (2) reports the teaching location of a doctoral program's alumni who are either associate professors or assistant professors, with some rare exceptions being full professors. Column (3) reports the teaching position of a program's alumni who are assistant professors, with some rare exceptions being associate professors.

For a very small doctoral program, the results in Table 2 can be misleading. For example, only one student graduated from the University of Pennsylvania in 1981-1985. Since he happens to teach at a top 40 school, he creates a "100% batting average" for the University of Pennsylvania and gets it ranked in the first place. Table 3 ranks the "success" of a doctoral program in terms of number of graduates teaching in top 40 accounting departments.

The large accounting doctoral programs, all in large state universities, occupy the top seven slots ranked in Table 3. The small programs offered at Cornell, Kansas, and Rochester, which are listed as the top five in Table 2, are ranked in the third quartile from the top in Table 3. Hence, rankings in terms of number and percentage give strikingly different perspectives. The

TABLE 2

Ranking by Percentage of Doctoral Graduates Employed in Top 40 Schools

University	Up to 1985 (1)	1976-1985 (2)	1981-1985 (3)	Up to 1980 (4)	Up to 1975 (5)
Rochester (1972)	71 (1)	67 (3)	100 (1)	100 (1)	100 (1)
Carnegie-Mellon (1957)	56 (2)	60 (7)	67 (6)	62 (2)	50 (4)
Kansas (1970)	46 (3)	67 (3)	67 (6)	60 (3)	71 (3)
Stanford (1939)	44 (4)	69 (2)	86 (3)	45 (5)	44 (5)
Cornell (1968)	40 (5)	27 (17)	29 (23)	54 (4)	80 (2)
Michigan (1939)	39 (6)	62 (6)	67 (6)	43 (6)	37 (8)
Ohio State (1950)	32 (7)	44 (10)	43 (17)	42 (8)	41 (6)
Chicago (1922)	31 (8)	54 (8)	60 (9)	35 (9)	30 (11)
U. Penn (1973)	29 (9)	67 (3)	100 (1)	16 (22)	0 (35)
U. Washington (1956)	28 (10)	38 (13)	55 (10)	27 (11)	28 (13)
Berkeley (1929)	27 (11)	37 (14)	45 (15)	28 (10)	31 (10)
Iowa (1951)	26 (12)	24 (21)	42 (18)	15 (24)	30 (11)
Minnesota (1936)	26 (12)	40 (12)	46 (14)	23 (16)	26 (14)
N. Carolina (1957)	25 (14)	26 (18)	36 (20)	26 (12)	23 (18)
Northwestern (1956)	24 (15)	29 (16)	44 (16)	25 (13)	37 (8)
VPI (1976)	22 (16)	22 (25)	8 (37)	16 (22)	–
Purdue (1969)	22 (16)	0 (39)	0 (38)	43 (6)	40 (7)
Texas (1934)	21 (18)	42 (11)	50 (11)	24 (15)	25 (16)
SUNY-Buffalo (1957)	20 (19)	50 (9)	75 (4)	18 (18)	0 (35)
Penn State (1967)	20 (19)	21 (26)	20 (26)	25 (13)	24 (17)
Illinois (1939)	19 (21)	23 (22)	26 (24)	22 (17)	26 (14)
Harvard (1935)	17 (22)	71 (1)	75 (4)	15 (24)	13 (25)
Michigan State (1959)	17 (23)	25 (19)	50 (11)	17 (20)	20 (20)
UCLA (1962)	14 (24)	25 (19)	50 (11)	17 (20)	20 (20)
Wisconsin (1953)	14 (24)	23 (22)	20 (26)	11 (29)	10 (29)
Oklahoma (1967)	13 (26)	18 (29)	25 (25)	15 (24)	6 (33)
Florida (1956)	13 (26)	23 (22)	37 (19)	13 (28)	15 (22)
Indiana (1950)	12 (28)	16 (30)	13 (32)	14 (27)	12 (27)
Oregon (1964)	12 (28)	20 (27)	18 (28)	7 (33)	0 (35)
Columbia (1952)	11 (30)	33 (21)	33 (21)	18 (18)	22 (19)
Alabama (1953)	9 (31)	19 (28)	17 (29)	12 (29)	10 (29)
Arizona (1970)	9 (31)	12 (31)	10 (33)	8 (32)	0 (35)
Missouri (1941)	8 (33)	6 (36)	10 (33)	7 (33)	14 (23)
Colorado (1966)	7 (34)	10 (32)	14 (30)	5 (39)	13 (25)
Georgia (1970)	7 (34)	6 (36)	0 (38)	11 (31)	7 (32)
Pittsburgh (1932)	4 (36)	8 (35)	14 (30)	6 (36)	8 (31)
LSU (1943)	4 (36)	4 (38)	9 (35)	7 (33)	12 (27)
NYU (1944)	4 (36)	9 (33)	33 (21)	6 (36)	14 (23)
S. California (1963)	3 (39)	9 (33)	9 (35)	6 (36)	4 (34)
MIT (1965)	0 (40)	0 (39)	0 (38)	0 (40)	0 (35)

Notes:

1. The year in the bracket behind each school is the year of first graduate.

2. The unit for each entry is percentage. The number in the bracket behind each entry indicates a rank.

3. None of the MIT graduates is identified as an accounting Ph.D. in Hasselback's.

4. Column (1) is based on all doctoral graduates up to 1985, Column (2) is based on the doctoral graduates who acquired degrees between 1976 and 1985 and so on so forth.

TABLE 3
Ranking by Number of Doctoral Graduates Employed in Top 40 Schools

University	Up to 1985 (1)	1976-1985 (2)	1981-1985 (3)	Up to 1980 (4)	Up to 1975 (5)	Total Doctoral up to 1985 (6)
Illinois	52 (1)	17 (2)	12 (1)	50 (1)	51 (1)	268 (1)
Texas	35 (2)	20 (1)	5 (8)	38 (2)	29 (2)	164 (2)
Michigan	30 (3)	13 (3)	8 (2)	28 (4)	21 (4)	77 (12)
Ohio State	29 (4)	12 (4)	6 (4)	32 (3)	26 (3)	90 (7)
Michigan State	21 (5)	8 (7)	7 (3)	19 (5)	18 (5)	22 (4)
Minnesota	20 (6)	8 (7)	6 (4)	15 (9)	15 (6)	78 (11)
U. Washington	20 (6)	10 (6)	5 (8)	17 (6)	13 (7)	72 (13)
Stanford	20 (6)	11 (5)	6 (4)	17 (6)	13 (7)	45 (22)
Berkeley	16 (9)	7 (11)	5 (8)	13 (10)	12 (9)	58 (17)
Chicago	16 (9)	6 (14)	3 (16)	16 (8)	12 (9)	51 (19)
Harvard	15 (11)	5 (16)	3 (16)	13 (10)	10 (12)	85 (9)
Indiana	12 (12)	5 (16)	2 (22)	12 (12)	9 (14)	103 (6)
Penn State	12 (12)	8 (7)	4 (13)	10 (13)	5 (20)	60 (16)
N. Carolina	12 (12)	8 (7)	5 (8)	9 (14)	4 (24)	48 (20)
Missouri	11 (15)	4 (21)	3 (16)	8 (16)	12 (9)	145 (3)
Wisconsin	11 (15)	7 (11)	4 (13)	7 (19)	5 (20)	81 (10)
Northwestern	10 (17)	5 (16)	4 (13)	8 (16)	9 (14)	41 (26)
Carnegie-Mellon	9 (18)	6 (14)	2 (22)	8 (16)	3 (26)	16 (35)
Alabama	8 (19)	4 (21)	2 (22)	9 (14)	7 (16)	88 (8)
Florida	8 (19)	7 (11)	6 (4)	6 (24)	5 (20)	64 (15)
Iowa	8 (19)	5 (16)	5 (8)	3 (27)	3 (26)	31 (28)
Cornell	8 (19)	4 (21)	2 (22)	7 (19)	4 (24)	20 (32)
Kansas	6 (23)	4 (21)	2 (22)	6 (24)	5 (20)	13 (37)
UCLA	6 (23)	3 (27)	1 (29)	7 (19)	6 (18)	42 (25)
Columbia	5 (25)	5 (16)	3 (16)	7 (19)	7 (16)	47 (21)
Rochester	5 (25)	4 (21)	2 (22)	5 (26)	1 (31)	7 (39)
LSU	4 (27)	1 (36)	1 (29)	7 (19)	10 (12)	105 (5)
Oklahoma	4 (27)	3 (27)	3 (16)	3 (27)	1 (31)	32 (27)
VPI	4 (27)	4 (21)	1 (29)	1 (35)	0 (35)	18 (34)
Georgia	3 (30)	2 (31)	0 (38)	3 (27)	1 (31)	45 (22)
Colorado	3 (30)	2 (31)	1 (29)	2 (33)	3 (26)	44 (24)
Oregon	3 (30)	3 (27)	2 (22)	1 (35)	0 (35)	26 (29)
SUNY-Buffalo	3 (30)	3 (27)	3 (16)	2 (33)	0 (35)	15 (36)
South California	2 (34)	2 (31)	1 (29)	3 (27)	2 (29)	65 (14)
NYU	2 (34)	1 (36)	1 (29)	3 (27)	6 (18)	54 (18)
Arizona	2 (34)	2 (31)	1 (29)	1 (35)	0 (35)	23 (31)
Purdue	2 (34)	0 (39)	0 (38)	3 (27)	2 (29)	9 (38)
U. Penn	2 (34)	2 (31)	1 (29)	1 (35)	0 (35)	7 (39)
Pittsburgh	1 (39)	1 (36)	1 (29)	1 (35)	1 (31)	25 (30)
MIT	0 (40)	0 (39)	0 (38)	0 (40)	0 (35)	20 (32)

Notes: The unit for each entry is number of graduates. The number in the bracket indicates a rank.

large school looks "successful" in terms of number of graduates placed in top schools, whereas the small school look "successful" in terms of percentage of graduates placed in top schools.

5. The Associations between Various Measures of Program Quality and Graguates' Employment

To examine the association between graduates' employment pattern and various measures of perceived quality of doctoral programs, we calculated their rank correlations. Our results suggest two interesting implications. First, these associations may indicate relevant factors that account for the success of doctoral graduates who find faculty appointment in major research universities. Second, to the extent that all these rankings measure certain aspects of quality, the associations among these rankings indicate their complementarity.

Nine sets of rankings in the literature are presented in Table 4.[4] CCS is based on the opinion survey, BN, AM, and JHP are based on the number of author lines in publication count, and BG is based on the numbers of citations. BN assigned publication credits to accounting departments according to three different criteria. The ranks of accounting departments in BN1 are calculated according to the location of the publishing faculty member at the time of publication, the ranks in BN2 are based on the location of the publishing faculty member in the 1974-75 academic year, and the ranks in BN3 are based on the institution that granted the author's doctoral degree (see respectively Tables 2, 3, and 4 of BN, 1975). AM1 and AM2 are respectively a weight-adjusted version of BN1 and BN2. BG1 and BG2 include different length of periods for counting the citation (see respectively Table 7c and 8c of BG). The references and the bases for the nine sets of rankings in the literature are summarized in footnote 1 of Table 4.

The notation # in the second column of Table 4 denotes the association between the rankings in Table 3 (which is based on the number of graduates

[4]We also ranked schools by their doctoral graduates teaching at top 10 and top 20 schools as listed in BG1. The associations between these two rankings and rankings in the literaturewere calculated. The results are similar to those correlations that are based on top 40 schools. therefore, only the results based on top 40 schools are presented.

TABLE 4

Spearman Correlations between Rankings by Academic Employment of Doctoral Graduates and Quality Rankings in the Literature

Literature	# or %	Period	Correlation	Period	Correlation	Period	Correlation
CCS	#	up to 1975	0.6176**	1966-1975	0.6141**	1971-1975	0.4789**
CCS	%	up to 1975	0.3903*	1966-1975	0.4515*	1971-1975	0.3547
BN1	#	up to 1975	0.1057	1966-1975	0.1506	1971-1975	0.0842
BN1	%	up to 1975	-0.1868	1966-1975	-0.2264	1971-1975	-0.0968
BN2	#	up to 1975	0.5615*	1966-1975	0.5156	1971-1975	0.2981
BN2	%	up to 1975	-0.2552	1966-1975	-0.2926	1971-1975	-0.1122
BN3	#	up to 1975	0.7307**	1966-1975	0.5475*	1971-1975	0.4185
BN3	%	up to 1975	0.3936	1966-1975	0.3753	1971-1975	0.2111
AM1	#	up to 1975	0.0969	1966-1975	0.1329	1971-1975	0.0421
AM1	%	up to 1975	-0.1429	1966-1975	-0.1956	1971-1975	-0.1078
AM2	#	up to 1975	0.3385	1966-1975	0.2619	1971-1975	0.0889
AM2	%	up to 1975	0.0198	1966-1975	-0.0374	1971-1975	0.0769
BG1	#	up to 1985	0.3048	1976-1985	0.1795	1981-1985	0.1169
BG1	%	up to 1985	0.7099**	1976-1985	0.5188**	1981-1985	0.4339*
BG2	#	up to 1985	0.2813	1976-1985	0.2136	1981-1985	0.0912
BG2	%	up to 1985	0.7341**	1976-1985	0.5521**	1981-1985	0.4722*
JHB	#	up to 1985	0.5999**	1976-1985	0.4792*	1981-1985	0.5252**
JHB	%	up to 1985	-0.0289	1976-1985	0.0373	1981-1985	0.1219

Notes:

1. The references and bases for the nine sets of rankings in the literature are summarized as follows:

   CCS: Carpenter et al (1974), based on the survey of accounting educators' opinions.

   BN: Bazley and Nikolai (1975), based on the authorship in the Accounting Review, Journal of Accounting Research, Journal of Accountancy, and Management Accounting.

   BN1: based on the location of author at the time of publication.

   BN2: based on the location of author in 1974-75.

   BN3: based on the alma mater of the author.

   AM: Andrew and McKenzie (1978), assigning different weight to the four journals in BN.

   AM1: a weight-adjusted version of BN1.

   AM2: a weight-adjusted version of BN2.

   BG: Brown and Gardner (1985), based on citation of faculty and graduates.

   BG1: based on all papers cited in four journals between 1976 and 1982.

   BG2: based on only those papers published in 1976-1982.

   JHB: Jacobs et al (1986), based on the authorship of eight journals during 1972-1984.

2. % indicates the relationship between Table 2 and the literature.

   # indicates the relationship between Table 3 and the literature.

3. The correlation is a Spearman Rank correlation, where * indicates significant at the 5% level and ** at the 1% level.

employed in top schools) and those in the literature, while the notation % indicates the association between the rankings in Table 2 (which is based on the percentage of graduates employed in top schools) and those in the literature. We tried to align the timing of our rankings with those in the literature for getting contemporaneous associations. For example, to match the rankings in CCS, which was published in 1974, we used the data in the 1976 volume of Hasselback's to calculate the correlation.

Out of nine sets of rankings in the literature, Table 4 shows six sets of significant associations with the rankings in this paper. The opinion survey in CCS is significantly associated with the percentage as well as the number of doctoral graduates teaching in top 40 accounting departments. The numbers of author lines in BN2, BN3, and JHB are significantly associated with the number of doctoral graduates teaching in top 40 accounting departments. The number of citations in BG is significantly associated with the percentage of doctoral graduates teaching in top 40 schools. The rankings in BN1, AM1 and AM2 are not significantly associated with the employment opportunity of the doctoral program's graduates. To the extent that BN1, AM1, AM2 and our rankings measure certain aspects of academic quality, BN1, AM1 and AM2 are complementary to our measurements.

The number of graduates placed in top 40 schools seems to be associated with the faculty opinion (CCS) and the quantity of publications (BN2, BN3, and JHB). However, Table 3 shows that the rankings in terms of number of graduates placed in top schools are positively correlated with program size. An accounting department that has more faculty and doctoral students tend to have larger quantity of publications, have larger number of related people expressing favorable opinion about the institution, and get more graduates placed in top schools than a smaller department. Hence, these number-based correlations in Table 4 are confounded by the size effect.

The correlations based on the rankings in terms of percentage of graduate placement provide us a quite different perspective. Table 4 shows that the number of publications written by faculty members of an accounting department does not appear to be associated with the percentage of its doctoral graduates obtaining employment in top schools. Rather, the quality of publications (measured by citation and faculty opinion) produced by an accounting department seems to be more closely associated with the employment opportunity of its doctoral graduates.

6. Placement to Public and Private Institutions

The academic environment of public institutions is different from that of private institutions. Students who enroll in the doctoral program of a public institution may have preference to teach in a public institution. Students who enroll in a private institution may prefer academic employment in a private institution. Moreover, Nikolai and Bazley's (1977) coalition formation hypothesis suggests that each institution has tendency to hire students from institutions of similar characteristics and mission. Tables 5 and 6 examine how the difference in education between public and private schools affect the pattern of academic employment.

Table 5 reports a 3x3 transition matrix of students graduating from top private, top public and the other institutions who teach at top private or top public schools, or find employment other than teaching in top 40 institutions. The top public institutions produces the lion's share of doctoral graduates and also provides the largest number of faculty positions. The ratio of top-public/top-private graduates for all existing faculty at 1985 is about 4.5 to 1.

The "market share" of the other schools increased drastically in the 1980s. Before 1975, the market share of top public schools was 68%, of top private schools was 18%, of the other schools was 15%. For those who graduated between 1981-85, the market share of top public schools declined to 47%, that of top private schools declined to a mere 8%, while that of the other schools jumped to 45%. This surge of new programs implies that various rankings of accounting departments will see significant change in the future.

Table 6 provides the academic employment in terms of public/private school from each of top 40 institutions. The 3x3 transition matrices in Table 5 summarize these employment patterns. An independence test is applied to each matrix. Their chi-square statistics are all significant at 1% level. Hence, an institution tends to supply its doctoral graduates to the institutions with similar characteristics. For example, a top public institution tends to supply doctoral graduates to other top public institutions. Hence, there is a trace of market segmentation in the academic accountants' labor market. This result is again consistent with Nikolai and Bazley (1977).

TABLE 5

The Employment Pattern
of Doctoral Graduated of Top Private, Top Public and the Other Schools

Period	To:	Public	Private	OEM**	Total	χ^2
Up to 1985	Public	292	54	1620	1966	
From:	Private	43	51	345	439	
	Others*	52	4	880	936	
	Total	387	109	2845	3341	179.91
1976-1985	Public	138	33	550	721	
From:	Private	23	28	82	133	
	Others	42	4	605	651	
	Total	203	65	1237	1505	172.84
1981-1985	Public	78	23	268	369	
From:	Private	11	17	33	61	
	Others	23	3	332	358	
	Total	112	43	633	788	113.69
Up to 1980	Public	267	46	1284	1597	
From:	Private	41	47	290	378	
	Others	26	1	551	578	
	Total	334	94	2125	2553	164.50
Up to 1975	Public	234	30	981	1245	
From:	Private	28	39	239	306	
	Others	10	0	275	285	
	Total	272	69	1495	1836	136.45

Notes:

* The term "others" indicates doctoral programs other than top 40 institutions.

** "Public" indicates top public institutions, "Private" indicates top private institutior and "OEM" indicates employment other than top 40 institutions.

TABLE 6
Academic Employment of Graduates of Top 40 Schools:
Private Versus Public

	Up to 1985		1976-1985		1981-1985		Up to 1980		Up to 1976	
University	PUBLIC	PRIVATE	PUBLIC	PRIVATE	PUBLIC	PRIVATE	PUBLIC	PRIVATE	PUBLIC	PRIVATE
Alabama	8		4		2		8	1	7	
Arizona	2		2		1		1			
Berkeley	8	8	2	5	1	4	7	6	7	5
UCLA	3	3	1	2		1	5	2	4	2
Carnegie-Mellon	5	4	4	2	1	1	3	5		3
Chicago	8	8	4	2	3		5	11	4	8
Colorado	3		2		1		2		3	
Columbia	2	3	2	3	1	2	1	6	4	3
Cornell	4	4	2	2		2	5	2	2	2
Florida	7	1	6	1	5	1	4	2	5	
Georgia	3		2				3		1	
Harvard	4	11	2	3	1	2	4	9	1	9
Illinois	44	8	13	4	8	4	42	8	45	6
Indiana	12		5		2		11	1	9	
Iowa	7	1	5		5		3		3	
Kansas	5	1	3	1	2		5	1	5	
LSU	3	1	1		1		6	1	10	
MIT										
Michigan	25	5	11	2	6	2	24	4	16	5
Michigan State	19	2	6	2	5	2	19		18	
Minnesota	15	5	5	3	3	3	13	2	14	1
Missouri	11		4		3		8		12	
NYU		2		1		1		3	1	5
N. Carolina	10	2	6	2	4	1	8	1	4	
Northwestern	7	3	3	2	2	2	5	3	6	3
Ohio State	25	4	10	2	6		25	7	19	7
Oklahoma	2	2	2	1	2	1	2	1	1	
Oregon	3		3		2		1			
U. Penn		2		2		1		1		
Penn. State	11	1	8		4		9	1	5	
Pittsburgh	1		1		1		1		1	
Purdue	2						3		2	
Rochester	1	4		4		2	2	3	1	
S. California	1	1	1	1	1		2	1	2	
Stanford	11	9	5	6	2	4	14	3	7	6
SUNY-Buffalo	1	2	1	2	1	2	2			
Texas	31	4	17	3	4	1	34	4	26	3
VPI	4		4		1		1			
U. Washington	17	3	8	2	4	1	13	4	12	1
Wisconsin	10	1	6	1	4		7		5	
Total	335	105	161	61	89	40	308	93	262	69

7. Conclusion

In this paper, we ranked the doctoral programs by the percentage and number of graduates teaching in top 40 accounting departments. The leading accounting programs in terms of percentage of graduates employed in top 40 accounting departments are generally small in size and highly interdisciplinary. On the other hand, the leading programs in terms of the number of graduates employed in top 40 accounting departments are large in size, long in history, and departmentalized.

We found that the number of faculty publications is not significantly associated with the probability of graduates securing teaching positions in top schools. Rather, the number of citations and the opinion of faculties are more closely associated with the employment pattern. Due to their sheer size, the large doctoral programs have more faculty publications and also have a larger number of graduates taking posts in top schools. We also find a trace of labor market segmentation in terms of a public/private grouping. Accounting departments in the U.S. tend to hire graduates from institutions with similar characteristics.

The focus of various programs may change over time. Programs without an initial research orientation may later have become research oriented. New programs must establish themselves and develop reputations. The increasing market share of the other schools implies that many emerging doctoral programs may become the major research institutions in the future. We find that the chance for a graduate of an institution outside of top 40 to find employment in a top 40 school increased from 3.6% in 1971-75 to 7.3% in 1981-85.

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