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# RANKINGS AND TRENDS IN FINANCE PUBLISHING: AN ITERATIVE APPROACH

Matthew D. Crook and Brian R. Walkup

*The University of Tulsa*

## Abstract

Using a sample of 20 finance journals from 1985 to 2014, we develop a robust, iterative loop ranking system for journals, universities, and doctoral programs across five-year intervals. Unlike past models, our dynamic model requires minimal reliance on external rankings. New journals create an immediate impact on rankings, likely because they attract high-profile authors in early issues. Niche journals rank higher than broad-based journals outside the top five. Our results demonstrate increased productivity of international universities and nonacademic institutions relative to U.S. universities. International doctoral programs experience similar increases in graduate productivity. Over time, collaboration between authors at different institutions increases.

*JEL Classification:* G00

## I. Introduction

"Publish or perish" describes the requirement placed on untenured faculty to demonstrate the ability to make an intellectual contribution at a level commensurate with peers before attaining tenure. For tenured faculty, continued productivity affects promotion and compensation. The quality of the contribution is, in part, judged by the perceived importance of the journal in which the article is published. Thus, a metric for categorizing and establishing a relative order of journal rankings is essential to reduce the asymmetries and noise inherent in evaluating research ability in the tenure and promotion processes.

Faculty publishing records in aggregate suggest to the academic community the parity between different institutions. Given competition for resources, rankings (qualitative and quantitative) affect university operations through many channels, including: quality of student applicants, faculty recruitment, and resources allocated by governmental agencies or donors. The high importance of rankings to faculty and administrators establishes a need for productivity rankings less dependent on conjecture and opinion. The system must be dynamic to recognize shifts by institutions seeking to increase academic standing relative to peers.

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A majority of prior studies ranking journals or institutional productivity rely on common perceptions across academic finance (surveys), existing rankings of institutions related to institutional prestige or editorial board membership, or citations by subsequent authors as the metric for quality. Although past rankings provide evidence of the relative prestige of journals, many previous studies anchor rankings to past perception or earlier studies to determine rankings. Using a sample of 20 finance journals over a 30-year time series, we create a dynamic method of journal and institutional rankings with minimal dependence on historical rankings.

Our method differs from the existing literature as we use a recursive ranking system that requires only a baseline ranking of schools from the prior literature to establish the first iteration of journal rankings. The first-iteration journal rankings provide the inputs to rank universities and institutions for the initial period (1985–1989). All successive iterations are self-contained, as an internally updating process is used for subsequent journal and school rankings. The initial and subsequent rankings are based on five-year windows for both programs and journals. Rankings are robust to the choice of baseline ranking or credit given to coauthors. Journal rankings reach stability after approximately 50 articles and each additional article has minimal effect on the journal ranking.

Our results show that journal rankings tend to persist across time but are subject to shocks when new journals become available as a research outlet. New journals attempting to generate a high reputation often solicit submissions from authors at prestigious institutions for early issues. The high-prestige authors raise the visibility and perception of the journal. *Journal of Corporate Finance, Journal of Financial Intermediation*, and *Journal of Financial Markets* are examples of new entrants making a "splash" that changes established rankings. Although persistence exists in journal rankings across time, we find evidence of established journals improving relative standing. *Review of Finance* and *Mathematical Finance* improve in relative ranking over time. Consistent with findings of Chen and Huang (2007), we see that niche journals (such as *Journal of Financial Markets* and *Mathematical Finance*) rank higher than conventional expectations.

Research productivity and relative ranking for academic institutions affect the quality of graduate students electing to do doctoral studies at a given institution. Universities are judged not only on the quality of current faculty but also on the quality of graduates. When considering an institution for doctoral study, quality drives students because of the impact on future placement (Spence 1973) and career success (Oyer 2006). Therefore, having an understanding of the relative effectiveness of doctoral programs to prepare their graduates for success is of high importance to prospective doctoral students.

We find that school rankings exhibit less persistence than observed for journal rankings. In more recent periods, we document an increase in the diversity of research contribution by international universities and nonacademic institutions. Across the time series, the number of international universities represented in the top 50 rankings increases from 1 to 13. No nonacademic institutions initially rank in the top 50, but 3 rank in the top 50 in the last period. Similar to our productivity rankings, research globalization results in several international universities producing highly productive doctoral graduates.

Changing research requirements in quality or quantity of publications in combination with greater data availability, improved statistical techniques, and technological advances may spur shifts in authorship trends. The prior literature suggests the degree of coauthorship changes across time. Chen and Huang (2007) show more coauthorship occurs across a broad range of journals and authors from top 80 schools concentrate publishing efforts in the top-tier and near-top-tier journals. Kim, Morse, and Zingales (2009) explore publishing productivity at the top 25 academic programs in 41 economics and finance journals, finding that coauthorship at a distance (coauthors at different universities) increases from 31% in the early 1970s to 61% in 2004.

Our 30-year data set allows the opportunity to quantify the shifting paradigms of authorship across time. From the early sample period (1985–1999) to the late sample period (2000–2014), solo-authored articles decrease from 36.82% to 21.58%. The number of authors increases from 1.84 to 2.21 over the two periods. Consistent with the findings of Kim, Morse, and Zingales (2009) and Chen and Huang (2007), our findings demonstrate increased coauthorship across finance authors over time. Often, disciplines use order of authorship as a means of denoting contribution. However, we provide evidence that alphabetical listing of authors is the convention in finance journals and becomes more prominent over time.

## II. Literature Review

### *Journal Rankings*

When assessing the quality of a journal, readers and authors in the field perceive the relative ranking of publication outlets. The anecdotal knowledge of authors and readers provides the basis of surveys ranking journals by quality. Coe and Weinstock (1983) use a survey of 107 finance department chairs to establish a relative order of quality, noting that perceived low acceptance rates cause journals to be ranked higher and perceptions about acceptance rates are higher than actual acceptance rates. Borde, Cheney, and Madura (1999) provide additional survey data on rankings, showing that a clientele effect may exist in journal rankings. The rankings provided by respondents show bias toward the areas where the respondent's teaching and research lie. In a global survey of finance academics, Oltheten, Theoharakis, and Travlos (2005) provide further evidence of the clientele effect in journal rankings. Respondents rank journal clusters within their research interest higher. Level of seniority and affiliation with a particular journal alter relative perception of journal quality.

Survey data provide a starting point for rankings. For top-tier publications, little variance is found in the survey results provided by Coe and Weinstock (1983), Borde, Cheney, and Madura (1999), and Olthenten, Theoharakis, and Travlos (2005). The flaw inherent in survey data as a measurement tool stems from perception. Survey rankings require respondents to be familiar with research published in each journal to properly assess the relative impact of the journal. As noted by both Borde, Cheney, and Madura (1999) and Olthenten, Theoharakis, and Travlos (2005), survey participants tend to bias rankings based on areas of interest or expertise. Thus, quantitative methods provide a more objective view of the relative rank of journals.

Prior quantitative methods ranking journals perform citation count assessments and rank journals by articles cited by other research. Mabry and Sharplin (1985) sample articles published from 1980 to June 1985 in the top four journals (*The Journal of Finance, Journal of Financial Economics, Journal of Financial and Quantitative Analysis*, and *Journal of Money, Credit and Banking*) and show rankings of the top 30 journals based on the number of citations from each. They develop journal rankings using the number of citations all articles published by the journal receives, the average number of citations each article published by the journal receives, and the citations per 10,000 words published annually by the journal. Alexander and Mabry (1994) update Mabry and Sharplin using identical methods with a sample of articles from *The Journal of Finance, Journal of Financial Economics, Review of Finance Studies*, and *Journal of Financial and Quantitative Analysis* spanning January 1987 to March 1991. The key changes found in Alexander and Mabry include that working papers tend to be the third largest cited source in articles during the period. They attribute the citation of working papers to two possible reasons: a rapid change in the "conventional knowledge . . . in the finance discipline" (p. 710) or the time required to get a paper through the review process.

Chan, Chang, and Chang (2013) generate journal rankings based on citations from 23 journals from 1990 to 2010. The authors use a normalization approach of adjusting a raw citation count by the age of the article to rank journals by the "impact" of the articles published. The normalized approach reduces potential skew in journal ranking that may occur using a pure count of citations.

With each of the citation count methods, rankings depend on papers cited by authors. Ranking journals, exclusively, based on citations potentially biases results due to self-citations. Additionally, an author may cater citations to paint the journal in a favorable light in an effort to garner acceptance at a particular journal. Citation count fails to fully measure the total impact of a paper. Certain styles of papers tend to garner more citations than others, ceteris paribus.

A different quantitative approach to journal rankings measures the institution affiliation of article authors. Harless and Reilly (1998) propose a method of ranking journal impact through an Author Affiliation Index (AAI). The AAI measures the impact of an article as the number of authors at elite institutions versus total domestic authors associated with the paper. Gorman and Kanet (2005) apply AAI to evaluate the ranking of operations management programs using the top 60 business schools and 27 operations management journals. They show that AAI score calculations reach stability after 40 to 50 articles and that scores are robust to the number of institutions considered top programs. Chen and Huang (2007) apply AAI to finance, ranking 41 finance journals based on a ranking of 80 top schools using a sample of the last 60 articles published in each before June 2005. Their ranking expands on Harless and Reilly (1998) and Gorman and Kanet (2005) to include elite international institutions in the ranking of schools.

### *School Rankings*

Popular press rankings (such as annual rankings by *U.S. News & World Report*) of business schools and disciplines within a business school provide information to prospective students as to the quality of education. However, research rankings do not fit

easily into the metric used by popular press rankings. When measuring rankings against research productivity, Borokhovich et al. (1995) find drastic differences between faculty productivity and popular press rankings. Using an estimation of *The Journal of Finance* page equivalents, Chan, Chen, and Steiner (2002) develop a global ranking system using 16 journals and ranking 100 schools, finding that international schools increase their productivity from 1990 to 2001. Chan and Fok (2003) estimate department quality using editorial board memberships per faculty member for 1985, 1990, 1995, and 2000. They conclude that a high editorial presence is a good proxy for department quality but suggest that board membership may not be a perfect ranking system due to researchers opting out of board membership or appointments due to other factors such as time constraints.

Chan, Chen, and Fung (2009) examine the pedigree effect of institutions and publishing of graduates from elite universities. Using the Familiarity-Rank Position Index from Olotheten, Theoharakis, and Travlos (2005) to rank 21 journals, Chan, Chen, and Fung examine the quality and productivity of doctoral programs based on the authorship of graduates. Particularly, they examine the value added by institutions to the productivity of graduates. They find that authors affiliated with top 25 "elite" programs tend to publish in the top 3 journals and tend to not publish in the other 18 journals. Most top 3 journal articles are authored by researchers graduating from an elite program. Placement is a stronger influence on publication than degree-granting institution.

## III. Data

To ensure both depth and breadth of our data set, we hand-collect information on all publications for 20 journals from 1985 to 2014. The 20 journals represent a sample of the most prestigious peer-reviewed finance academic journals. Although it is easy to argue against exclusion of omitted journals, we select journals from those most commonly included in rankings of finance journals from the prior literature. We examine 1985–2014, ensuring multiple subperiods to allow our iterative ranking system to accurately portray true rankings. Additionally, the 30-year time series provide the opportunity to recognize trends and shifts in finance academic publishing across time.

For each article in our data set, we collect a wide range of information including the name of journal, year, volume, issue of journal, start and end pages, all authors' names and current affiliations as of publication, and order of author listing. We define current affiliation as the affiliation listed by the author on the title page of the publication. In instances where the author lists multiple affiliations, we record all affiliations and identify the first university or nonacademic institution as the primary affiliation.

In addition to the article-specific information, we collect doctoral-granting affiliations for all authors in our data set. For most observations, we identify the doctoral-granting institution for their degree using the ProQuest Dissertations and Theses Database. For instances where we are unable to identify the doctoral-granting institution via ProQuest, we perform web searches in an attempt to identify the author's degree-granting institution.

For purposes of accuracy, we identify the multiple ways an institution can be defined (e.g. UCLA, University of California-Los Angeles, University of California,

Los Angeles). Observations attributed to a variant of an institution's name are consolidated to the common identifier for each. Although all university affiliations may not be exact, we are confident that the number of erroneously attributed institutions is small and does not materially affect results.

Summary statistics for our sample are presented in Table 1. Our final sample contains 24,434 unique articles from 20 journals over a 30-year span. Although the majority (11 of 20) of the journals in our sample are available for all 30 years, 8 journals began publishing after 1985 and 1 journal (*The Journal of Business*) discontinued publication in 2006. The average article in our sample has just over two authors and is slightly longer than 20 pages in length. Approximately 85% of all articles with at least two authors list the authors alphabetically rather than by order of authorship.[1]

## IV. Trends in Publishing

Technological advances throughout our sample period are likely to cause shifts in coauthorship over time. For example, communication enhancements and data transferability alone have reduced the required effort to coauthor over long distances. To further cement this thought, consider that for much of the first half of our observation period, a coauthor would likely need to physically transfer data sets of any significant size on a storage device from one coauthor to the other. In comparison, for most of the latter half of our observation period, all but the largest data sets can be easily transferred to coauthors in moments.

Because of changes in the coauthoring environment, we examine shifts in coauthorship over our sample. Table 2 presents authorship for 1985–2014, 1985–1999, and 2000–2014. The number of authors per article across the 20 journals in our sample increases by 0.37 authors per article from our pre-2000 sample to our post-2000 sample, and the difference is statistically significant at the 1% level. Similarly, the probability a paper is solo-authored has a statistically significant decrease at the 1% level from 36.82% during 1985–1999 to 21.58% during 2000–2014. Figure I shows the increasing level of coauthorship over time, likely due to ease of data transfer and communication. However, additional explanations for the increase in coauthorship could stem from increasing tenure standards or few universities discounting coauthored papers when making tenure decisions.

Table 2 and Figure II further examine the impact of technology on coauthorship, showing that the probability coauthored papers have multiple authors from the same institution decreases over time. Although 41.29% of coauthored papers during 1985–1999 had multiple authors from the same institution, only 35.60% fell into this category during 2000–2014, a statistically significant difference at the 1% level. The decrease in same-institution coauthorship implies that more faculty

[1] It is important to recognize that in some cases it is possible for the authors to be listed by order of authorship but to still appear alphabetically.

**TABLE 1. Summary Statistics by Journal.**

| Journal | Articles in Sample | First Year | Last Year | Years in Sample | Articles per Year | Issues in Sample | Issues per Year | Avg # of Authors | Avg Page Length | % Alpha Given 2+ Authors |
|---|---|---|---|---|---|---|---|---|---|---|
| *Financial Analysts Journal* | 1,516 | 1985 | 2014 | 30 | 50.53 | 180 | 6.00 | 1.78 | 8.98 | 76.14% |
| *Financial Management* | 1,010 | 1985 | 2014 | 30 | 33.67 | 120 | 4.00 | 2.16 | 16.33 | 82.51% |
| *The Financial Review* | 1,325 | 1985 | 2014 | 30 | 44.17 | 120 | 4.00 | 2.04 | 15.65 | 72.38% |
| *Journal of Banking and Finance* | 3,829 | 1985 | 2014 | 30 | 127.63 | 271 | 9.03 | 2.18 | 16.48 | 83.27% |
| *The Journal of Business* | 693 | 1985 | 2006 | 22 | 31.50 | 95 | 4.32 | 1.88 | 25.15 | 85.33% |
| *The Journal of Finance* | 2,421 | 1985 | 2014 | 30 | 80.70 | 168 | 5.60 | 2.05 | 27.34 | 94.26% |
| *Journal of Financial Quant. Analysis* | 1,114 | 1985 | 2014 | 30 | 37.13 | 128 | 4.27 | 2.06 | 22.37 | 91.78% |
| *Journal of Financial Economics* | 1,997 | 1985 | 2014 | 30 | 66.57 | 283 | 9.43 | 2.19 | 26.36 | 95.10% |
| *The Journal of Financial Research* | 873 | 1985 | 2014 | 30 | 29.10 | 120 | 4.00 | 2.09 | 16.46 | 79.49% |
| *The Journal of Futures Markets* | 1,510 | 1985 | 2014 | 30 | 50.33 | 278 | 9.27 | 1.99 | 18.88 | 67.20% |
| *Journal of Money, Credit and Banking* | 1,647 | 1985 | 2014 | 30 | 54.90 | 165 | 5.50 | 1.83 | 20.36 | 92.04% |
| *The Journal of Risk and Insurance* | 1,162 | 1985 | 2014 | 30 | 38.73 | 120 | 4.00 | 1.97 | 17.98 | 68.58% |
| *The Review of Financial Studies* | 1,411 | 1988 | 2014 | 27 | 52.26 | 164 | 6.07 | 2.17 | 34.88 | 96.46% |
| *Journal of Financial Intermediation* | 446 | 1990 | 2014 | 25 | 17.84 | 90 | 3.60 | 1.98 | 25.26 | 93.53% |
| *Mathematical Finance* | 585 | 1991 | 2014 | 24 | 24.38 | 96 | 4.00 | 2.01 | 22.03 | 90.98% |
| *Journal of Empirical Finance* | 738 | 1993 | 2014 | 22 | 33.55 | 93 | 4.23 | 2.20 | 19.90 | 85.31% |
| *Journal of Corporate Finance* | 826 | 1994 | 2014 | 21 | 39.33 | 93 | 4.43 | 2.24 | 20.34 | 90.17% |
| *European Financial Management* | 550 | 1995 | 2014 | 20 | 27.50 | 85 | 4.25 | 2.15 | 23.97 | 84.52% |
| *Review of Finance* | 431 | 1997 | 2014 | 18 | 23.94 | 68 | 3.78 | 2.10 | 32.24 | 92.59% |
| *Journal of Financial Markets* | 350 | 1998 | 2014 | 17 | 20.59 | 68 | 4.00 | 2.18 | 26.49 | 93.12% |
| Full sample | 24,434 | 1985 | 2014 | 30 | 814.47 | 2805 | 5.19 | 2.07 | 21.02 | 85.49% |

Note: The summary statistics are for 20 journals published from 1985 to 2014. Several journals enter the sample after 1985 and one journal exits the sample before 2014. *Review of Finance* enters the sample in 1997 but was published as *European Finance Review* until 2003 when the journal was renamed *Review of Finance*. The full-sample statistics are simple summations and averages.

**TABLE 2. Trends in Coauthorship and Author Order Listing over 1985–2014.**

| Description | Full Sample | 1985–1999 | 2000–2014 | Difference |
|---|---|---|---|---|
| Number of authors per article | 2.07 | 1.84 | 2.21 | 0.37*** |
| Pr(SoloAuthored) | 27.47% | 36.82% | 21.58% | –15.24%*** |
| Pr(SameInst \| 2+ authors) | 37.52% | 41.29% | 35.60% | –5.69%*** |
| Pr(SameDiss \| 2+ authors) | 35.00% | 31.31% | 36.86% | 5.55%*** |
| Pr(SameCohort \| 2+ authors) | 16.51% | 16.22% | 16.67% | 0.44% |
| Pr(Alpha \| 2+ authors) | 85.49% | 80.36% | 88.09% | 7.74%*** |

Note: This table reports trends across the full sample and two distinct periods: 1985–1999 and 2000–2014.
***Significant at the 1% level.

coauthor with peers from outside of their institution than had previously. The increased ease of communicating and working over distance broadens the set of coauthors accessible to each faculty member. Ceteris paribus, authors can generate higher quality research with increased flexibility in coauthors for each idea, rather than choosing someone within their department.

We examine the probability that researchers will coauthor with someone sharing their doctoral degree-granting institution and find a statistically significant increase in the probability over our two subperiods. Technology reduces frictions when expanding a coauthor network. Finally, we look at the probability that coauthors received their dissertation from the same university within a four-year period of one another, implying that they likely overlapped in their doctoral studies. We find that this probability increases between our two samples by 0.44%. However, the increase lacks statistical significance.

In addition to looking at coauthorship-related trends, we examine order of authorship within financial publishing. Although many disciplines place high importance

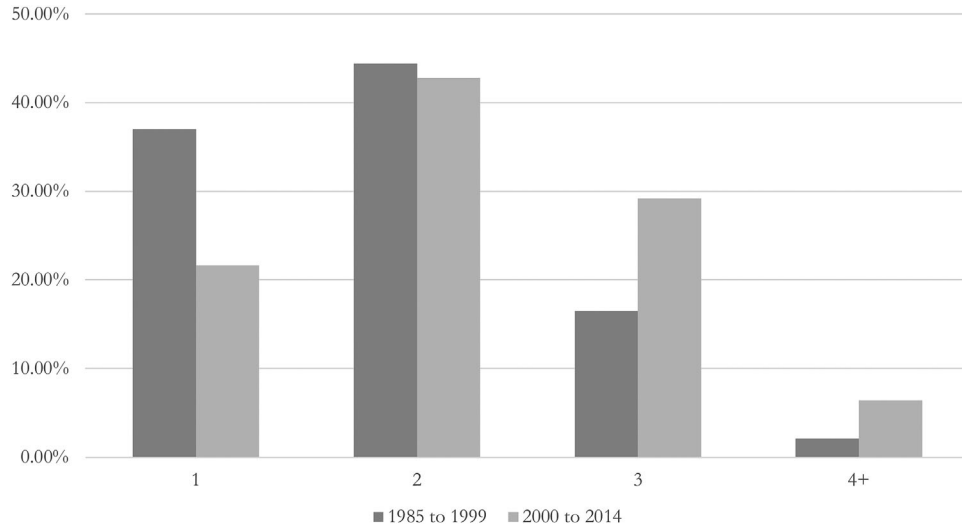


**Figure I. Number of Authors per Article over 1985–2014.** This figure reports the number of authors per article across two periods: 1985–1999 and 2000–2014.

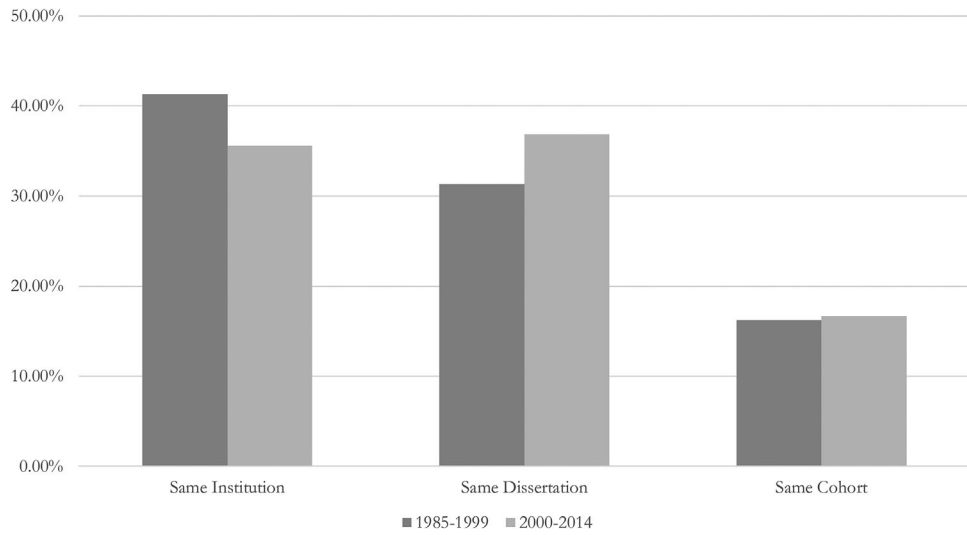


**Figure II. Coauthorship Trends over 1985–2014.** This figure reports the percentage of coauthors affiliated with the same institution, having received their dissertation from the same institution, or having been a part of the same dissertation cohort (given at least two coauthors) across two periods: 1985–1999 and 2000–2014. We define two coauthors as having been in the same cohort if they received their dissertation from the same university within plus/minus four years of each other.

on order of authorship, finance generally follows an alphabetical convention for authorship. Acknowledging the naming convention prevents the marginalization of authorship contributions for authors with last names beginning with letters late in the alphabet for matters of promotion and tenure. Table 2 and Figure III demonstrate that alphabetical authorship and the assumption of equal contribution is the norm. Across our full sample, the probability that authorship is listed alphabetically is 85.49%. Although this clearly demonstrates alphabetical authorship to be the more commonly chosen practice, the probability is actually higher in recent years, with 88.09% of coauthored articles listing the authors in alphabetical order. When compared to the 80.36% listed alphabetically during 1985–1999, this results in an increase of 7.74%, which is statistically significant at the 1% level.

## V. Rankings

*Method*

Given the importance of journal and university rankings, several prior studies attempt to create measures that more accurately rank a subset of finance journals and/or a subset of universities. Most archival studies (citations, faculty productivity, board composition, etc.) depend on a prior study to provide rankings of journals (universities) for ranking of universities (journals). We improve and extend prior studies by creating a ranking method that depends on an existing study for an initial baseline, then uses an iterative loop of prior internal rankings for each subsequent five-year iteration. The five-year interval allows enough observations for full stability

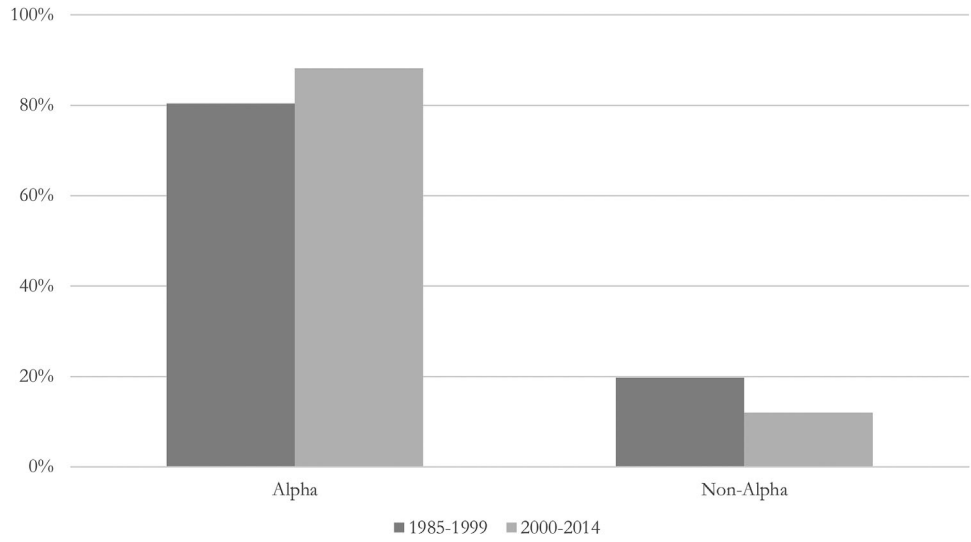


**Figure III. Order of Authorship over 1985–2014.** This figure reports the percentage of alphabetical and nonalphabetical listing of coauthors (given at least two coauthors) across two periods: 1985–1999 and 2000–2014.

while allowing enough iterations for the rankings to lose dependence on the external prior rankings.

To begin our ranking system, we calculate the journal rankings using a modified version of the AAI. Gorman and Kanet (2005) popularized the AAI ranking system by applying AAI to ranking journals for operations management. AAI has since been adopted for use in other disciplines including information sciences (e.g., Ferratt et al. 2007; Cronin and Meho 2008), accounting (e.g., Chan, Tong, and Zhang 2012; Guthrie et al. 2012), marketing (Pan and Chen 2011), and finance (Chen and Huang 2007). The AAI uses the percentage of authors from top-tier universities to evaluate a journal's prestige. The original ranking from Gorman and Kanet is calculated as:

$$\mathrm{AAI}(x) = \frac{\sum_{i \in M} A(i)/n(i)}{\sum_{i \in M} [A(i) + B(i)]/n(i)}, \tag{1}$$

where $A(i)$ represents the number of authors of an article $i$ affiliated with a top university, $B(i)$ represents the number of authors of an article $i$ from a U.S. university not included in the set of top universities, $n(i)$ represents the total number of authors listed on the article, and $M$ is the set of articles that satisfies the condition $\sum_{i \in M} [A(i) + B(i)]/n(i) \geq 50$. The resulting value for AAI represents the journal's score, with 0 as the lowest potential score and 1 as the highest.

For our purposes, we begin with a set of university rankings and allow all universities and nonacademic institutions (e.g., Federal Reserve Bank of New York

and International Monetary Fund) to be ranked. Therefore, our definitions of $A(i)$ and $B(i)$ are altered. We calculate $A(i)$ as the number of authors of article $i$ from a global set of top universities and institutions. We calculate $B(i)$ as the number of authors of article $i$ from a university or nonacademic institution not included in the top set of universities or nonacademic institutions. Given our definitions for $A(i), B(i)$, and $n(i)$, the denominator in equation (1) becomes $M$, the number of articles published by a journal over a given period. The denominator sums to $M$ because we allow equal treatment for non-U.S. academic authors, nonacademic authors, and U.S. academic authors. We choose equal treatment of authors because our rankings allow all institutions to be ranked. Therefore, our Modified AAI becomes:

$$\text{Modified AAI}(x) = \frac{\sum_{i \in M} \frac{A(i)}{n(i)}}{M}, \tag{2}$$

where $A(i)$ represents the number of authors of article $i$ from a global set of top universities and institutions, and $n(i)$ represents the total number of authors of article $i$. Furthermore, we do not limit our set to include only articles up until the condition $\sum_{i \in M}[A(i) + B(i)]/n(i) \geq 50$ is satisfied. Instead, we include all articles within the estimation period to guarantee a high level of stability with our measurement. Therefore, our definition of $M$ is all articles for a journal within the chosen period.

We apply an iterative process requiring an external ranking as a calibration point for subsequent rankings. The top 80 universities in Appendix A of Chen and Huang (2007) comprise the set of top universities for $A(i)$ in equation (2). The outside input allows calibration and initial estimation of journal rankings for 1985–1989. Equation (2) calculates the Modified AAI journal ranking using all publications within each journal from 1985 to 1989.

Following the calculation of the initial five-year interval (1985–1989) Modified AAI journal rankings, our ranking system works within itself with no need for external rankings. We determine the 1985–1989 rankings for universities and nonacademic institutions using:

$$Rank(x) = \sum_{i \in N} \text{AAI}_i, \tag{3}$$

where $\text{AAI}_i$ represents the Modified AAI score for the journal in which article $i$ was published and $N$ is the set of all observations where an author from the university or nonacademic institution is a listed article author.

The top 80 ranked universities and nonacademic institutions from 1985 to 1989 provide the $A(i)$ base to calculate Modified AAI scores for each of the 20 journals over 1990–1994. Therefore, our internal calculation of Modified AAI replaces the need for future external rankings of universities. The AAI rankings for 1990–1994 allow for calculation of a new set of university or nonacademic institution rankings for 1990–1994. The iterative process then repeats itself for each subsequent five-year period (1995–1999, 2000–2004, 2005–2009, and 2010–2014).

*Modified AAI Journal Rankings*

Over our 30-year sample, we calculate six iterations of the Modified AAI rankings over five-year periods. The results of these calculations are shown in Table 3.[2,3] As previously stated, not all 20 journals were in existence for all six periods. Across our 30-year sample, the top three journals (*The Journal of Finance*, *The Review of Financial Studies*, and *Journal of Financial Economics*) remain consistent, but their ordering does not necessarily remain the same. Outside of the top three journals, the rankings demonstrate significantly more movement. *Journal of Financial and Quantitative Analysis* and *The Journal of Business* have been the most consistent members of the top five.

Outside of the top 5, journal rankings generally lack consistency. *Journal of Financial Intermediation*, *Journal of Financial Markets*, and *Journal of Corporate Finance* have been consistent members of the top 10 since their introduction. *Journal of Money, Credit and Banking* ranks in the top 10 in all but one period. Both *Review of Finance* (published as *European Finance Review* until 2003) and *Mathematical Finance* make large leaps in the rankings, with *Review of Finance* demonstrating the most significant improvement in quality, rising from 18th to 4th over four ranking periods.

A closer look at rankings outside of the top five journals yields a trend contrary to conventional expectations. Journals focusing on specific, niche topics tend to rank higher than expected, whereas journals focusing on general finance topics rank lower. Following the top five journals that accept articles based on broad interests, the journals ranked from 6 to 12 (2010–2014) focus on specific interests. *Journal of Financial Markets* focuses on topics of market microstructure and asset pricing, *Journal of Financial Intermediation* focuses on banking and corporate decisions, and *Mathematical Finance* focuses on theoretical modeling of market behavior with a goal to bridge the gap between mathematical scientists and financial economists. Although broad-based journals have larger academic readership, some authors view niche journals as a substitute outlet for research that fails to be accepted in the most prestigious journals, similar to the findings of Chen and Huang (2007). The rationale is that the focused journal is followed more carefully by peers performing similar research.

One unique observation resulting from our Modified AAI rankings is that new journals appear to attempt to make a "splash" in the first few volumes. For example, *Journal of Financial Intermediation* and *Journal of Corporate Finance* supplanted *The Journal of Business* from the top four when they first began publishing. The splash factor seems logical given that journals attempting to gain momentum as a "top-tier" journal must quickly gain recognition from the academic community. New journals aiming to position themselves as high quality often solicit submissions from recognizable researchers and therefore are more likely to score high on the Modified AAI given the prestigious affiliations of a large percentage of their initial authors.

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[2] Raw Modified AAI statistics are shown in Table A1 of the Appendix.

[3] We use shading to denote the level of program rankings, with the darkest color denoting the highest ranked journals and lighter colors denoting lower rankings.

**TABLE 3. Modified AAI Journal Rankings over 1985–2014: Top 80/Equal Weighting.**

| Journal | 1985–1989 | 1990–1994 | 1995–1999 | 2000–2004 | 2005–2009 | 2010–2014 |
|---|---|---|---|---|---|---|
| *The Journal of Finance* | 3 | 3 | 3 | 1 | 1 | 1 |
| *The Review of Financial Studies* | 1 | 1 | 2 | 2 | 2 | 2 |
| *Journal of Financial Economics* | 2 | 2 | 1 | 3 | 3 | 3 |
| *Review of Finance* | N/A | N/A | 18 | 15 | 8 | 4 |
| *Journal of Financial and Quantitative Analysis* | 5 | 7 | 5 | 5 | 5 | 5 |
| *Journal of Financial Intermediation* | N/A | 4 | 6 | 9 | 6 | 6 |
| *Journal of Financial Markets* | N/A | N/A | 7 | 6 | 7 | 7 |
| *Journal of Money, Credit and Banking* | 6 | 10 | 10 | 10 | 11 | 8 |
| *Mathematical Finance* | N/A | 12 | 19 | 18 | 14 | 9 |
| *Journal of Corporate Finance* | N/A | 5 | 9 | 7 | 9 | 10 |
| *The Journal of Risk and Insurance* | 8 | 9 | 8 | 13 | 13 | 11 |
| *Financial Analysts Journal* | 12 | 17 | 17 | 11 | 15 | 12 |
| *Financial Management* | 9 | 11 | 11 | 8 | 10 | 13 |
| *Journal of Empirical Finance* | N/A | 8 | 13 | 12 | 12 | 14 |
| *European Financial Management* | N/A | N/A | 20 | 20 | 16 | 15 |
| *Journal of Banking and Finance* | 7 | 13 | 12 | 17 | 17 | 16 |
| *The Journal of Financial Research* | 10 | 15 | 15 | 14 | 19 | 17 |
| *The Financial Review* | 13 | 16 | 14 | 19 | 20 | 18 |
| *The Journal of Futures Markets* | 11 | 14 | 16 | 16 | 18 | 19 |
| *The Journal of Business* | 4 | 6 | 4 | 4 | 4 | N/A |

Note: We calculate the Modified Author Affiliation Index (AAI) rankings for the 20 journals over the six subperiods using equation (2). We use institutional rankings for the top 80 institutions over the prior five-year period to calculate the Modified AAI. The Modified AAI ranking for 1985–1989 is the exception and the institutional rankings for the calculation are the institutional rankings from Appendix A of Chen and Huang (2007) . The institutional rankings serving as the basis for journal rankings provide full credit for each author regardless of the number of authors. A ranking of N/A indicates a period in which the journal had no issues published. Rankings over 1990–1994 for both the *Journal of Corporate Finance* and *Journal of Empirical Finance* have fewer than 30 articles contributing to the Modified AAI score. The *Journal of Financial Markets* has fewer than 30 articles contributing to its initial ranking in 1995–1999. We use shading to denote the level of journal rankings, with the darkest color denoting the five highest ranked journals and the lighter colors denoting lower rankings.

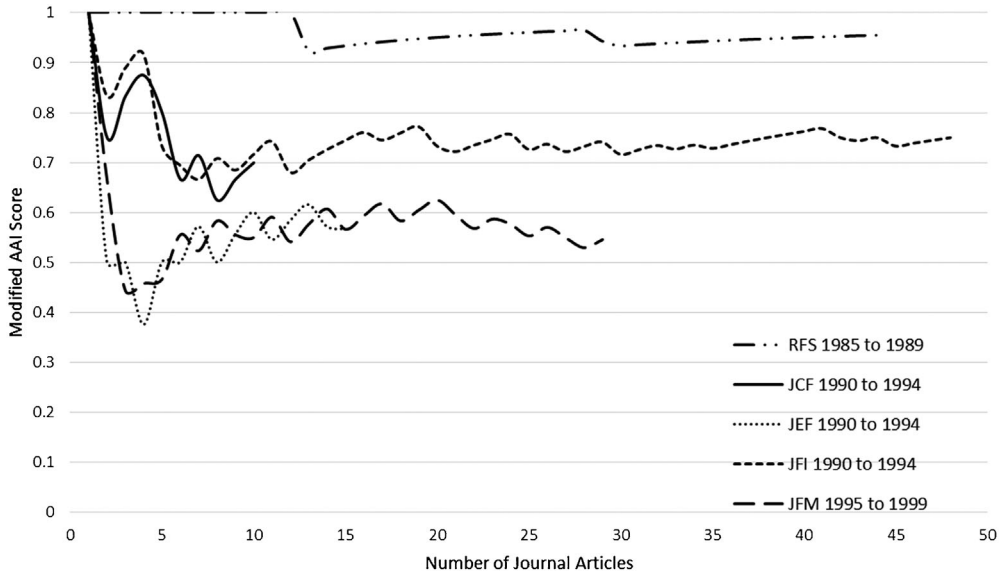


**Figure IV. Convergence Profiles of Newly Started Journals in the Period of First Publication.** This figure presents the time series of Modified Author Affiliation Index (AAI) calculations for *The Review of Financial Studies* (RFS), *Journal of Corporate Finance* (JCF), *Journal of Empirical Finance* (JEF), *Journal of Financial Intermediation* (JFI), and *Journal of Financial Markets* (JFM). Each plot shows the change in Modified AAI for each additional journal article published by the journal during the journal's inaugural year and any subsequent years within the first five-year period within our sample.

Both Gorman and Kanet (2005) and Chen and Huang (2007) suggest that AAI scores may be subject to volatility with fewer than 40 to 50 articles contributing to the AAI score. Over the 30-year period of our study, five journals begin publication and have fewer than 50 articles contributing to the journal's first-period ranking. *The Review of Financial Studies, Journal of Corporate Finance, Journal of Empirical Finance, Journal of Financial Intermediation*, and *Journal of Financial Markets* published 44, 10, 15, 48, and 29 articles, respectively, in their first period of inclusion. Figure IV illustrates the impact of each additional article published on the Modified AAI of the journal shortly after beginning publication. Both *The Review of Financial Studies* and the *Journal of Financial Intermediation* have little fluctuation in the plot of Modified AAI upon the addition of each article. However, for the remaining three, the impact of a new article can cause fluctuations of several hundredths for the Modified AAI.

For rankings of the *Journal of Corporate Finance*, *Journal of Empirical Finance*, and *Journal of Financial Markets*, the low number of articles may be the root cause of the splash factor and the high initial ranking may inflate the initial ranking for each. For the three journals with fewer than 30 articles, we expand the analysis to observe the relative stability of their ranking during the first few years of publication. We extend the Modified AAI calculation into the next period to obtain 50 articles to calculate rankings. The rankings for *Journal of Corporate Finance*, *Journal of Empirical Finance*, and *Journal of Financial Markets* are 0.600, 0.382, and 0.520, respectively. Although

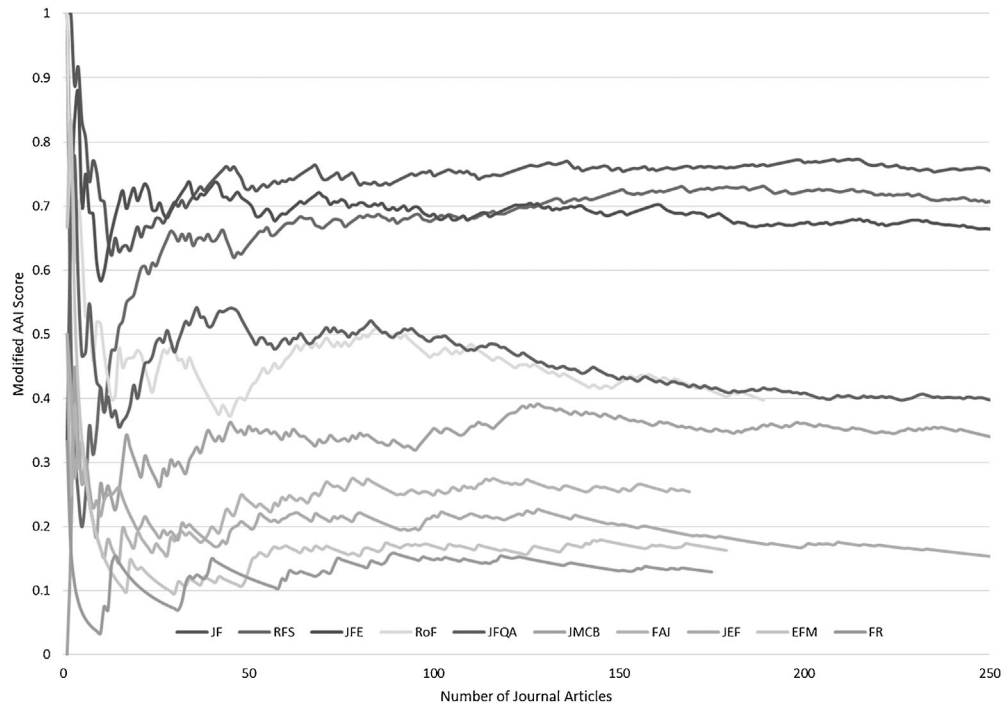


**Figure V. Convergence of Journals to Modified AAI Scores.** This figure illustrates the speed in terms of authored articles at which journals converge to a stable Modified Author Affiliation Index (AAI) score. The Modified AAI reported is for 2010–2014 for up to the first 250 articles of 10 journals from the sample. The termination of the time series for each journal differs because of the number of articles published by each journal over the period. For the figure, each journal is denoted by an abbreviation: *The Journal of Finance* (JF), *The Review of Financial Studies* (RFS), *Journal of Financial Economics* (JFE), *Review of Finance* (RF), *Journal of Financial and Quantitative Analysis* (JFQA), *Journal of Money, Credit and Banking* (JMCB), *Financial Analyst Journal* (FAJ), *Journal of Empirical Finance* (JEF), *European Financial Management* (EFM), and *The Financial Review* (FR).

each of the journal's scores has reached stability by the 50-article mark, they also demonstrate a downward trend in their Modified AAI score as more articles are added.

Figure V illustrates the convergence to a semiconstant Modified AAI. We plot the scores for 10 journals for 2010–2014 for up to the first 250 articles. The scores, in most cases, tend to reach relative stability (changes by a few thousandths for each additional article) at approximately 50 articles. Drift in scores occurs beyond 50 articles, with *The Review of Financial Studies* and the *Journal of Money, Credit and Banking* drifting upward, and *Review of Finance* and the *Journal of Financial and Qualitative Analysis* drifting downward. Drift demonstrates the time trend of author affiliation across article acceptances over the five-year window.

As a comparison, we look at how similarly the Modified AAI ranks journals versus impact factors. We collect the impact factors from Thomson Reuters' Web of Science for each of the journals in our sample for the most recent period. (*The Journal of Financial Research* and *The Financial Review* do not have impact factors and *The*

*Journal of Business* did not publish during the final period.[4]) Table 4 details the results for the 17 journals with impact factors and shows how each ranks based on one-year impact, one-year impact without journal self-citations, and five-year impact factors. The impact factors paint a similar rankings picture as do the Modified AAI rankings.[5] The top three journals remain the top journals. However, the *Journal of Financial Economics* and *The Review of Financial Studies* swap places based on one-year impact and one-year impact without journal self-citations. The second tier of rankings (4th to 9th) have similar rankings with some fluctuations within the tier. The third tier has a greater degree of movement within the tier. *The Journal of Banking and Finance* ranks 16th using the Modified AAI, but ranks from six to eight places higher (a ranking of 8th to 10th) when ranking by impact factor.

Given the dependence of journal rankings on school rankings, we perform several robustness checks. The first check alters the definition of a "top-tier" university and reduces the number of universities and nonacademic institutions to the top 50, rather than the top 80, for $A(i)$. We report journal rankings in Table 5 using the first 50 schools from Appendix A in Chen and Huang (2007) as the base for the first iteration.[6] The results in Table 5 show similar rankings as seen in Table 3. The splash effect is more pronounced when considering the top 50 versus top 80. *Journal of Corporate Finance* ranks second during 1990–1994 (from fifth in Table 3), indicating article authorship in the first few years comes predominantly from the top 50 institutions. *Journal of Financial Intermediation* makes a similar splash to a lesser degree, ranking sixth for 1990 to 1994.

Our second robustness check, shown in Table 6,[7] returns $A(i)$ to the top 80 universities and nonacademic institutions, and treats each author's contribution as a proportional fraction of the journal's AAI score, rather than full credit as in Tables 3 and 5. Table 6 demonstrates results similar to those seen in Tables 3 and 5, indicating the decision to use full or partial credit for authorship has little effect on rankings. *The Journal of Finance, The Review of Financial Studies*, and *Journal of Financial Economics* all maintain similar rankings. We observe no reduction in the splash effect. Both *Review of Finance* and *Mathematical Finance* increase in quality by similar margins over time, even when adjusting authorship credit from full to partial.

Our last robustness check determines the dependence of rankings on the external calibration ranking used in the initial Modified AAI calculation. We replace the top 80 from Chen and Huang (2007) with the top 80 program rankings based on the number of faculty from a given institution with editorial board memberships, as presented in Table 2 of Chan and Fok (2003). By using rankings based on editorial boards instead of authorship productivity, we test the reliance on a specific ranking as the calibration metric. In untabulated results, journal and university rankings remain largely unchanged.

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[4] *The Journal of Financial Research* was recently selected for inclusion by Thomson Reuters and will have impact factor data available through Web of Science in the near future.

[5] The correlations between Modified AAI and one-year impact, one-year impact without journal self-citations, and five-year impact factors are 91.4%, 93.4%, and 92.9%, respectively.

[6] Raw Modified AAI statistics are shown in Table A2 of the Appendix.

[7] Raw Modified AAI statistics are shown in Table A3 of the Appendix.

**TABLE 4. Modified AAI Journal Rankings for 2010–2014 Compared to Journal Impact Factors.**

| Journal | MAAI | One-Year | | | One-Year NSC | | | Five-Year | | |
|---|---|---|---|---|---|---|---|---|---|---|
| *The Journal of Finance* | 1 | 5.424 | 1 | 0 | 5.076 | 1 | 0 | 7.546 | 1 | 0 |
| *Review of Financial Studies* | 2 | 3.174 | 3 | **–1** | 2.860 | 3 | **–1** | 6.192 | 2 | 0 |
| *Journal of Financial Economics* | 3 | 4.047 | 2 | 1 | 3.740 | 2 | 1 | 5.876 | 3 | 0 |
| *Review of Finance* | 4 | 2.012 | 5 | **–1** | 1.938 | 4 | 0 | 2.384 | 6 | **–2** |
| *Journal of Financial and Quantitative Analysis* | 5 | 1.566 | 8 | **–3** | 1.513 | 8 | **–3** | 2.698 | 4 | 1 |
| *Journal of Financial Intermediation* | 6 | 1.661 | 7 | **–1** | 1.627 | 7 | **–1** | 2.691 | 5 | 1 |
| *Journal of Financial Markets* | 7 | 2.111 | 4 | 3 | 1.889 | 5 | 2 | 2.058 | 7 | 0 |
| *Journal of Money, Credit and Banking* | 8 | 1.036 | 14 | **–6** | 0.964 | 11 | **–3** | 1.607 | 12 | **–4** |
| *Mathematical Finance* | 9 | 1.774 | 6 | 3 | 1.726 | 6 | 3 | 1.882 | 9 | 0 |
| *Journal of Corporate Finance* | 10 | 1.193 | 11 | **–1** | 0.873 | 15 | **–5** | 1.770 | 11 | **–1** |
| *Journal of Risk and Insurance* | 11 | 1.075 | 13 | **–2** | 0.950 | 12 | **–1** | 1.385 | 15 | **–4** |
| *Financial Analysts Journal* | 12 | 1.548 | 9 | 3 | 1.226 | 9 | 3 | 1.323 | 16 | **–4** |
| *Financial Management* | 13 | 1.000 | 15 | **–2** | 0.909 | 13 | 0 | 1.587 | 13 | 0 |
| *Journal of Empirical Finance* | 14 | 0.714 | 16 | **–2** | 0.670 | 16 | **–2** | 1.454 | 14 | 0 |
| *European Financial Management* | 15 | 1.158 | 12 | 3 | 0.908 | 14 | 1 | 1.778 | 10 | 5 |
| *Journal of Banking and Finance* | 16 | 1.299 | 10 | 6 | 1.036 | 10 | 6 | 1.922 | 8 | 8 |
| *Journal of Futures Markets* | 17 | 0.542 | 17 | 0 | 0.427 | 17 | 0 | 0.831 | 17 | 0 |

Note: We list the Modified Author Affiliation Index (MAAI) rankings from Table 3 for the 17 journals with published impact factors from Thomson Reuters' Web of Science. The ranking for the *Journal of Futures Markets* is listed as 17 despite being ranked as 19 in Table 3 as the lowest ranked journal in that table. *The Journal of Financial Research* and *The Financial Review* are not present in Table 4 due to no reported impact factors. The MAAI rankings are based on top 80 institutional rankings (Appendix A of Chen and Huang 2007) with full author credit regardless of number of authors serving as the basis for journal rankings. The "One Year" heading denotes the one-year impact factor for a journal. The "One-Year NSC" heading denotes the one-year impact factor without journal self cites for a journal. The "Five-Year" heading denotes the five-year impact factor for a journal. The first column for each heading reports the raw impact factor. The second column of each heading denotes the ranking of a journal based on the reported impact factor. The third column for each heading denotes the difference in ranking between the MAAI and the impact factor. We use shading to denote the level of journal rankings, with the darkest color denoting the five highest ranked journals and the lighter colors denoting lower rankings. For differences in rankings, a ranking lower than computed using Modified AAI is denoted by a negative number in bold.

**TABLE 5. Modified AAI Journal Rankings over 1985–2014: Top 50/Equal Weighting.**

| Journal | 1985–1989 | 1990–1994 | 1995–1999 | 2000–2004 | 2005–2009 | 2010–2014 |
|---|---|---|---|---|---|---|
| *The Journal of Finance* | 3 | 3 | 3 | 1 | 1 | 1 |
| *The Review of Financial Studies* | 1 | 1 | 1 | 2 | 2 | 2 |
| *Journal of Financial Economics* | 2 | 4 | 2 | 3 | 3 | 3 |
| *Review of Finance* | N/A | N/A | 15 | 13 | 5 | 4 |
| *Journal of Financial Intermediation* | N/A | 6 | 5 | 7 | 7 | 5 |
| *Journal of Financial Markets* | N/A | N/A | 6 | 6 | 8 | 6 |
| *Journal of Financial and Quantitative Analysis* | 5 | 7 | 9 | 5 | 6 | 7 |
| *Journal of Money, Credit and Banking* | 7 | 9 | 10 | 8 | 10 | 8 |
| *Mathematical Finance* | N/A | 11 | 16 | 15 | 15 | 9 |
| *Financial Analysts Journal* | 12 | 17 | 13 | 12 | 13 | 10 |
| *The Journal of Risk and Insurance* | 6 | 8 | 7 | 14 | 14 | 11 |
| *Journal of Corporate Finance* | N/A | 2 | 8 | 10 | 9 | 12 |
| *Financial Management* | 9 | 10 | 12 | 9 | 12 | 13 |
| *European Financial Management* | N/A | N/A | 19 | 17 | 16 | 14 |
| *Journal of Empirical Finance* | N/A | 14 | 14 | 11 | 11 | 15 |
| *The Journal of Futures Markets* | 11 | 15 | 18 | 19 | 18 | 16 |
| *Journal of Banking and Finance* | 8 | 12 | 11 | 16 | 17 | 17 |
| *The Financial Review* | 13 | 16 | 20 | 20 | 19 | 18 |
| *The Journal of Financial Research* | 10 | 13 | 17 | 18 | 20 | 19 |
| *The Journal of Business* | 4 | 5 | 4 | 4 | 4 | N/A |

Note: We calculate Modified Author Affiliation Index (AAI) rankings for the 20 journals over the six subperiods using equation (2). We use institutional rankings for the top 50 institutions for the prior five-year period to calculate the Modified AAI. The Modified AAI ranking for 1985–1989 is the exception and the institutional rankings for the calculation are the institutional rankings from Appendix A of Chen and Huang (2007). The institutional rankings serving as the basis for journal rankings provide full credit for each author regardless of the number of authors. A ranking of N/A indicates a period in which the journal had no issues published. Rankings over 1990–1994 for both the *Journal of Corporate Finance* and *Journal of Empirical Finance* have fewer than 30 articles contributing to the Modified AAI score. The *Journal of Financial Markets* has fewer than 30 articles contributing to its initial ranking in 1995–1999. We use shading to denote the level of journal rankings, with the darkest color denoting the five highest ranked journals and the lighter colors denoting lower rankings.

**TABLE 6. Modified AAI Journal Rankings over 1985–2014: Top 80/Partial Weighting.**

| Journal | 1985–1989 | 1990–1994 | 1995–1999 | 2000–2004 | 2005–2009 | 2010–2014 |
|---|---|---|---|---|---|---|
| *The Journal of Finance* | 3 | 4 | 3 | 1 | 1 | 1 |
| *The Review of Financial Studies* | 1 | 1 | 2 | 2 | 2 | 2 |
| *Journal of Financial Economics* | 2 | 2 | 1 | 3 | 3 | 3 |
| *Review of Finance* | N/A | N/A | 18 | 13 | 8 | 4 |
| *Journal of Financial and Quantitative Analysis* | 5 | 7 | 6 | 5 | 5 | 5 |
| *Journal of Financial Intermediation* | N/A | 3 | 5 | 10 | 6 | 6 |
| *Journal of Financial Markets* | N/A | N/A | 7 | 6 | 7 | 7 |
| *Mathematical Finance* | N/A | 12 | 19 | 14 | 14 | 8 |
| *Journal of Money, Credit and Banking* | 6 | 10 | 10 | 9 | 11 | 9 |
| *Financial Analysts Journal* | 12 | 17 | 16 | 12 | 13 | 10 |
| *Journal of Corporate Finance* | N/A | 5 | 9 | 7 | 9 | 11 |
| *The Journal of Risk and Insurance* | 8 | 9 | 8 | 15 | 15 | 12 |
| *Financial Management* | 9 | 11 | 11 | 8 | 10 | 13 |
| *Journal of Empirical Finance* | N/A | 8 | 13 | 11 | 12 | 14 |
| *European Financial Management* | N/A | N/A | 20 | 20 | 16 | 15 |
| *Journal of Banking and Finance* | 7 | 13 | 12 | 17 | 17 | 16 |
| *The Financial Review* | 13 | 16 | 14 | 18 | 20 | 17 |
| *The Journal of Financial Research* | 10 | 15 | 15 | 16 | 19 | 18 |
| *The Journal of Futures Markets* | 11 | 14 | 17 | 19 | 18 | 19 |
| *The Journal of Business* | 4 | 6 | 4 | 4 | 4 | N/A |

Note: We calculate Modified Author Affiliation Index (AAI) rankings for the 20 journals over the six subperiods using equation (2). We use institutional rankings for the top 80 institutions for the prior five-year period to calculate the AAI. The Modified AAI ranking for 1985–1989 is the exception and the institutional rankings for the calculation are the institutional rankings from Appendix A of Chen and Huang (2007). The institutional rankings serving as the basis for journal rankings provide partial credit for each author based on the number of authors. A ranking of N/A indicates a period in which the journal had no issues published. Rankings over 1990–1994 for both the *Journal of Corporate Finance* and *Journal of Empirical Finance* have fewer than 30 articles contributing to the Modified AAI score. The *Journal of Financial Markets* has fewer than 30 articles contributing to its initial ranking in 1995–1999. We use shading to denote the level of journal rankings, with the darkest color denoting the five highest ranked journals and the lighter colors denoting lower rankings.

Any shifts in rankings were no more than two places, with the highest rankings remaining unchanged.

*University and Nonacademic Institution Rankings*

Table 7 presents our rankings of the top 50 universities and nonacademic institutions based on the 2010–2014 rankings, as well as their prior rankings within the top 100.[8] Although rankings tend to persist in the top 5, substantial movement occurs throughout the rankings across time. Ranking changes depend on departmental productivity, and productivity depends on a large number of factors.

Many interesting shifts occur in the rankings over time. Over the time series, authors from non-U.S. universities and nonacademic institutions increase contributions to prominent finance journals. Tilburg University, London School of Economics, Erasmus University Rotterdam, Hong Kong University of Science and Technology, University of Oxford, University of Hong Kong, Bocconi University, INSEAD, Johann Wolfgang von Goethe University, and Hautes Etudes Commerciales–Paris all increase in rankings from outside of the top 100 in the 1980s and early 1990s to top 50 in the most recent period. A small number of nonacademic institutions achieve top 50 rankings with regard to productivity: Federal Reserve Bank of New York, International Monetary Fund, and Federal Reserve Board of Governors.

Table 7 may understate rankings for single authorship or collaborations between authors from different institutions because of equal treatment for all authors contributing to an article. Coauthors sharing the same institution contribute additional factors of the journal's full Modified AAI ranking to an institution's AAI calculation using equation (3). A journal article with several authors sharing the same institution allows for an article to count multiple times toward the institution's AAI score. We recalculate institution rankings for institutions providing fractional Modified AAI contributions and present the results in Table 8. Similar to Table 7, several non-U.S. universities ranked outside of the top 100 during the initial ranking period increase in ranking to inside the top 50 when considering partial authorship credit. Another nonacademic institution (European Central Bank) receives a top 50 ranking.[9]

To compare institutional rankings evenly across department sizes, we examine the last period of rankings and scale each university's ranking by the number of tenure-track faculty.[10] Similar to Borokhovich et al (1995), we define tenure- track faculty as professors classified as an assistant, associate, or full professor.[11] Table 9 compares the

[8] We use shading to denote the level of program rankings, with the darkest color denoting the 10 highest ranked programs and lighter colors denoting lower rankings.

[9] In untabulated results, additional robustness checks shifting the top 80 to top 50 universities and nonacademic institutions and altering the calibration ranking to the rankings in Table 2 of Chen and Fok (2003) are performed. The results of the robustness checks remain materially similar to those presented in Table 7.

[10] For an institution to be considered in scaled rankings, the institution must appear in the top 200 in Modified AAI rankings.

[11] We recognize that institutions may use alternative titles for research-active faculty. Therefore, positions such as eminent scholars, chaired positions, and research professors were considered on a case-by-case basis. Furthermore, positions less likely to have research requirements (e.g., adjunct faculty, teaching faculty, or executive appointment) were excluded from the research faculty count.

**TABLE 7. University and Nonacademic Institution Productivity Rankings over 1985–2014.**

| Institution | 1985–1989 | 1990–1994 | 1995–1999 | 2000–2004 | 2005–2009 | 2010–2014 |
|---|---|---|---|---|---|---|
| NYU | 3 | 1 | 1 | 1 | 1 | 1 |
| Harvard | 12 | 8 | 5 | 2 | 2 | 2 |
| Chicago | 1 | 6 | 3 | 5 | 4 | 3 |
| Pennsylvania | 2 | 2 | 2 | 3 | 3 | 4 |
| Columbia | 13 | 10 | 8 | 8 | 5 | 5 |
| Duke | 43 | 7 | 27 | 6 | 8 | 6 |
| UC-Berkeley | 10 | 47 | 24 | 36 | 12 | 7 |
| North Carolina | 47 | 56 | 26 | 20 | 16 | 8 |
| Stanford | 16 | 28 | 19 | 10 | 21 | 9 |
| MIT | 22 | 20 | 29 | 7 | 23 | 10 |
| UCLA | 4 | 5 | 7 | 4 | 7 | 11 |
| London Business School | 97 | 85 | 28 | 13 | 11 | 12 |
| Texas | 23 | 24 | 14 | 11 | 9 | 13 |
| Ohio State | 6 | 4 | 13 | 29 | 10 | 14 |
| Tilburg | NR | NR | 83 | 48 | 34 | 15 |
| Northwestern | 5 | 11 | 11 | 22 | 43 | 16 |
| Southern California | 36 | 16 | 16 | 32 | 26 | 17 |
| Cornell | 30 | 14 | 6 | 9 | 14 | 18 |
| Maryland | 41 | 40 | 45 | 16 | 17 | 19 |
| Indiana | 20 | 25 | 17 | 18 | 22 | 20 |
| Michigan | 9 | 3 | 4 | 12 | 6 | 21 |
| Board of Governors | 68 | 23 | 9 | 24 | 29 | 22 |
| Washington in St. Louis | 55 | 43 | 35 | 44 | 18 | 23 |
| London School of Economics | NR | NR | 85 | 87 | 54 | 24 |
| Boston College | 74 | 21 | 30 | 40 | 20 | 25 |
| Toronto | 72 | 63 | 99 | 41 | 38 | 26 |
| Federal Reserve - New York | NR | NR | 39 | 50 | 30 | 27 |
| Erasmus | NR | NR | 95 | 54 | 44 | 28 |
| Yale | 28 | 76 | 34 | 21 | 15 | 29 |
| International Monetary Fund | NR | NR | NR | 73 | 31 | 30 |
| Illinois | 8 | 9 | 10 | 14 | 13 | 31 |
| Washington | 26 | 30 | 18 | 60 | 35 | 32 |
| Notre Dame | 46 | 50 | 44 | 27 | 55 | 33 |
| HKUST | NR | NR | 52 | 15 | 24 | 34 |
| Oxford | NR | NR | NR | 61 | 45 | 35 |
| British Columbia | 15 | 13 | 41 | 66 | 53 | 36 |
| Rochester | 7 | 17 | 12 | 31 | 85 | 37 |
| Florida | 19 | 22 | 20 | 19 | 52 | 38 |
| Hong Kong | NR | NR | NR | NR | 100 | 39 |
| Bocconi | NR | NR | NR | NR | 96 | 40 |
| Houston | 54 | 55 | 92 | 58 | 90 | 41 |
| INSEAD | 87 | 68 | 81 | 51 | 27 | 42 |
| Florida State | 14 | 38 | 32 | NR | 75 | 43 |
| Goethe | NR | NR | NR | NR | NR | 44 |
| Princeton | 53 | 65 | NR | 39 | 39 | 45 |
| Purdue | 17 | 41 | 21 | 17 | 40 | 46 |
| Minnesota | 44 | 70 | 46 | 37 | 60 | 47 |
| Fordham | NR | NR | 78 | 76 | NR | 48 |
| Virginia | 56 | 53 | 57 | 43 | 49 | 49 |
| HEC Paris | NR | NR | NR | NR | 71 | 50 |

Note: Institutional productivity is based on the quality of publications for the affiliated authors over the given period. The basis for rankings is the sum of the Modified Author Affiliation Index (AAI) for all of the articles published over the specified period. The author contribution to the sum of Modified AAI is equal for all authors (e.g., coauthors from a single institution each contributes the full amount of a journal's Modified AAI to the ranking sum). The rankings are based on the journal rankings where 80 institutions are considered top institutions. A ranking of NR indicates a period in which the institutional rank was outside of the top 100. We use shading to denote the level of program rankings, with the darkest color denoting the 10 highest ranked programs and the lighter colors denoting lower rankings.

**TABLE 8. University and Nonacademic Institution Productivity Rankings over 1985–2014: Top 80/Partial Credit.**

| Institution | 1985–1989 | 1990–1994 | 1995–1999 | 2000–2004 | 2005–2009 | 2010–2014 |
|---|---|---|---|---|---|---|
| NYU | 3 | 1 | 1 | 1 | 1 | 1 |
| Harvard | 10 | 8 | 4 | 2 | 2 | 2 |
| Chicago | 1 | 5 | 3 | 5 | 3 | 3 |
| Pennsylvania | 2 | 2 | 2 | 4 | 4 | 4 |
| Columbia | 12 | 7 | 8 | 8 | 6 | 5 |
| North Carolina | 48 | 56 | 30 | 25 | 22 | 6 |
| Stanford | 13 | 27 | 13 | 9 | 16 | 7 |
| MIT | 17 | 20 | 19 | 6 | 28 | 8 |
| Duke | 31 | 9 | 24 | 7 | 9 | 9 |
| London Business School | 100 | 88 | 27 | 10 | 10 | 10 |
| UC-Berkeley | 7 | 37 | 22 | 28 | 11 | 11 |
| UCLA | 5 | 6 | 6 | 3 | 8 | 12 |
| Northwestern | 8 | 10 | 9 | 19 | 36 | 13 |
| Southern California | 26 | 17 | 23 | 35 | 24 | 14 |
| Texas | 27 | 26 | 17 | 14 | 7 | 15 |
| Michigan | 9 | 3 | 5 | 12 | 5 | 16 |
| Tilburg | NR | NR | 84 | 53 | 38 | 17 |
| London School of Economics | NR | NR | 74 | 76 | 43 | 18 |
| Ohio State | 4 | 4 | 12 | 27 | 12 | 19 |
| Board of Governors | 63 | 14 | 7 | 15 | 21 | 20 |
| Indiana | 16 | 25 | 14 | 22 | 25 | 21 |
| Cornell | 23 | 13 | 10 | 11 | 19 | 22 |
| Maryland | 47 | 40 | 50 | 13 | 17 | 23 |
| Toronto | 62 | 50 | NR | 41 | 31 | 24 |
| Federal Reserve - New York | NR | NR | 34 | 46 | 20 | 25 |
| Notre Dame | 46 | 61 | 47 | 18 | 35 | 26 |
| Washington in St. Louis | 51 | 36 | 29 | 39 | 15 | 27 |
| Boston College | 77 | 22 | 32 | 43 | 23 | 28 |
| Oxford | NR | NR | NR | 55 | 40 | 29 |
| International Monetary Fund | NR | NR | 93 | 61 | 32 | 30 |
| Rochester | 6 | 15 | 11 | 30 | 82 | 31 |
| HKUST | NR | NR | 61 | 17 | 18 | 32 |
| Illinois | 11 | 11 | 15 | 16 | 13 | 33 |
| Yale | 22 | 73 | 35 | 20 | 14 | 34 |
| Erasmus | NR | NR | NR | 52 | 53 | 35 |
| Boston | 38 | 29 | NR | 96 | 74 | 36 |
| Washington | 18 | 30 | 16 | 62 | 33 | 37 |
| Florida | 15 | 23 | 21 | 24 | 57 | 38 |
| HEC Paris | NR | NR | 99 | NR | 71 | 39 |
| INSEAD | 84 | 58 | 78 | 37 | 26 | 40 |
| British Columbia | 14 | 12 | 39 | 67 | 56 | 41 |
| European Central Bank | NR | NR | NR | NR | 68 | 42 |
| Princeton | 39 | 55 | 67 | 34 | 42 | 43 |
| Purdue | 25 | 51 | 25 | 21 | 49 | 44 |
| Virginia | 49 | 66 | 48 | 47 | 58 | 45 |
| Florida State | 20 | 33 | 18 | NR | 69 | 46 |
| New South Wales | NR | NR | NR | 80 | 46 | 47 |
| Arizona State | 35 | 16 | 33 | 44 | 51 | 48 |
| Hong Kong | NR | NR | NR | NR | NR | 49 |
| Minnesota | 43 | 48 | 42 | 38 | 59 | 50 |

Note: Institutional productivity is based on the quality of publications for the affiliated authors over the given period. The basis for rankings is the sum of Modified Author Affiliation Index (AAI) for all of the articles published over the specified period. We sum proportional contributions to the sum of Modified AAI for each author for a given article (e.g., each coauthor contributes a fractional amount of a journal's Modified AAI based on the number of authors to the ranking sum). The rankings are based on the journal rankings where 80 institutions are considered top institutions. A ranking of NR indicates a period in which the institutional rank was outside of the top 100. We use shading to denote the level of program rankings, with the darkest color denoting the 10 highest ranked programs and the lighter colors denoting lower rankings.

**TABLE 9. Comparison of 2010–2014 Institutional Rankings with 2014 Scaled Institutional Rankings.**

| | Top 80 | | | Top 80 Weighted | | |
|---|---|---|---|---|---|---|
| Institution | MAAI | Scaled | Change | MAAI | Scaled | Change |
| NYU | 1 | 9 | **–8** | 1 | 9 | **–8** |
| Harvard | 2 | 2 | 0 | 2 | 2 | 0 |
| Chicago | 3 | 8 | **–5** | 3 | 4 | **–1** |
| Pennsylvania | 4 | 32 | **–28** | 4 | 25 | **–21** |
| Columbia | 5 | 44 | **–39** | 5 | 46 | **–41** |
| Duke | 6 | 3 | 3 | 9 | 6 | 3 |
| UC-Berkeley | 7 | 12 | **–5** | 11 | 15 | **–4** |
| North Carolina | 8 | 15 | **–7** | 6 | 14 | **–8** |
| Stanford | 9 | 14 | **–5** | 7 | 13 | **–6** |
| MIT | 10 | 10 | 0 | 8 | 12 | –4 |
| UCLA | 11 | 6 | 5 | 12 | 5 | 7 |
| London Business School | 12 | 20 | **–8** | 10 | 16 | **–6** |
| Texas | 13 | 26 | **–13** | 16 | 31 | **–15** |
| Ohio State | 14 | 5 | 9 | 19 | 10 | 9 |
| Tilburg | 15 | 21 | **–6** | 17 | 20 | **–3** |
| Northwestern | 16 | 45 | **–29** | 13 | 35 | **–22** |
| Southern California | 17 | 65 | **–48** | 14 | 60 | **–46** |
| Cornell | 18 | 1 | 17 | 22 | 1 | 21 |
| Maryland | 19 | 28 | **–9** | 23 | 30 | **–7** |
| Indiana | 20 | 38 | **–18** | 21 | 34 | **–13** |
| Michigan | 21 | 31 | **–10** | 16 | 24 | **–8** |
| Board of Governors | 22 | NA | NA | 20 | NA | NA |
| Washington in St. Louis | 23 | 27 | **–4** | 27 | 28 | **–1** |
| London School of Economics | 24 | 55 | **–31** | 18 | 42 | **–24** |
| Boston College | 25 | 53 | **–28** | 28 | 52 | **–24** |
| Toronto | 26 | 79 | **–53** | 24 | 75 | **–51** |
| Federal Reserve - New York | 27 | NA | NA | 25 | NA | NA |
| Erasmus | 28 | 46 | **–18** | 35 | 31 | **4** |
| Yale | 29 | 17 | 12 | 34 | 19 | 15 |
| International Monetary Fund | 30 | NA | NA | 30 | NA | NA |
| Illinois | 31 | 63 | **–32** | 33 | 64 | **–31** |
| Washington | 32 | 33 | –1 | 37 | 38 | –1 |
| Notre Dame | 33 | 62 | **–29** | 26 | 53 | **–27** |
| HKUST | 34 | 51 | **–17** | 32 | 47 | **–15** |
| Oxford | 35 | 58 | **–23** | 29 | 54 | **–25** |
| British Columbia | 36 | 36 | 0 | 41 | 40 | 1 |
| Rochester | 37 | 13 | **24** | 31 | 7 | **24** |
| Florida | 38 | 30 | **8** | 38 | 26 | **12** |
| Hong Kong | 39 | 60 | **–21** | 49 | 68 | **–19** |
| Bocconi | 40 | 111 | –71 | 52 | 120 | –68 |
| Houston | 41 | 54 | –13 | 54 | 62 | –8 |
| INSEAD | 42 | 43 | **–1** | 40 | 39 | **1** |
| Florida State | 43 | 29 | **14** | 46 | 27 | **19** |
| Goethe | 44 | 24 | 20 | 51 | 32 | 19 |
| Princeton | 45 | 74 | **–29** | 43 | 70 | **–27** |
| Purdue | 46 | 18 | **28** | 44 | 17 | **27** |
| Minnesota | 47 | 52 | **–5** | 50 | 55 | **–5** |

(Continued)

**TABLE 9. Continued.**

| | Top 80 | | | Top 80 Weighted | | |
|---|---|---|---|---|---|---|
| Institution | MAAI | Scaled | Change | MAAI | Scaled | Change |
| Fordham | 48 | 88 | –40 | 59 | 98 | –39 |
| Virginia | 49 | 19 | **30** | 45 | 18 | **27** |
| HEC Paris | 50 | 7 | **43** | 39 | 3 | **36** |

Note: The institutional productivities reported in the table (Modified Author Affiliation Index [MAAI]) are for the most recent period in Tables 7 and 8 (2010–2014) and are based on the quality of publications for the affiliated authors over the given period. The basis for rankings is the sum of MAAI for all of the articles published over the specified period. The author contribution to the sum of MAAI is equal for all authors in the column labeled "Top 80," and proportional contributions to the sum of MAAI for each author for a given article are given in the column labeled "Top 80 Weighted." The scaled rankings are calculated by dividing the raw summed ranking as calculated from equation (3) by the number of tenure track assistant, associate, and full professors for each institution. A ranking of NA indicates a nonacademic institution where a count of active researchers is unavailable. We use shading to denote the level of program rankings, with the darkest color denoting the 10 highest ranked programs and the lighter colors denoting lower rankings. For differences in rankings (column labeled "Change"), a productivity ranking lower than computed based on a journal's MAAI is denoted by a negative number in bold.

Modified AAI rankings for the most recent period from Table 7 to the scaled rankings based on department size. The results show that few universities retain the same level of rankings when the institution's AAI score is scaled by the number of faculty. For elite departments that fall in ranking by a large margin, we attribute the drop to a large number of tenured and tenure-track faculty. Conversely, some universities rise in rankings because of high productivity with a small core of research-active faculty. For example, although University of California, San Diego is unlisted because of an unscaled ranking of 73 using the Modified AAI, it ranks 4th when scaled by size because each faculty member has several top-tier publications over the most recent ranking period. The rankings weighted by number of authors demonstrate similar results as the unweighted rankings. When rankings are scaled by number of researchers, larger finance departments tend to fall in the rankings.

### *Doctoral Program Rankings*

When considering a doctoral program, productivity of past graduates factors strongly into the quality of the program. To get a sense of program ranking, we apply our iteratively determined journal rankings to graduates and aggregate the Modified Journal AAI ranking to rank doctoral programs. We modify equation (3) to calculate the Modified AAI rankings for each program by redefining $N$ as the set of all observations where an author having received his or her doctoral degree from the university is a listed article author.

Table 10 presents our ranking of finance doctoral programs. We observe relative stability for schools ranked highly, with more stability in rankings than observed in the university and nonacademic institution rankings. University of Chicago remains consistent as the top doctoral program throughout the time series. Harvard, MIT, Stanford University, New York University, and the University of Pennsylvania remain

**TABLE 10. Doctoral Program Productivity Rankings over 1985–2014.**

| Institution | 1985–1989 | 1990–1994 | 1995–1999 | 2000–2004 | 2005–2009 | 2010–2014 |
|---|---|---|---|---|---|---|
| Chicago | 1 | 1 | 1 | 1 | 1 | 1 |
| Harvard | 5 | 4 | 4 | 3 | 3 | 2 |
| MIT | 2 | 2 | 2 | 2 | 2 | 3 |
| Stanford | 6 | 5 | 6 | 4 | 4 | 4 |
| NYU | 7 | 14 | 9 | 7 | 6 | 5 |
| Pennsylvania | 4 | 3 | 3 | 5 | 5 | 6 |
| Yale | 15 | 22 | 21 | 13 | 10 | 7 |
| UCLA | 10 | 7 | 5 | 6 | 7 | 8 |
| UC-Berkeley | 11 | 12 | 14 | 11 | 8 | 9 |
| Northwestern | 16 | 8 | 10 | 10 | 12 | 10 |
| Ohio State | 20 | 15 | 8 | 8 | 11 | 11 |
| Michigan | 17 | 13 | 17 | 19 | 17 | 12 |
| Rochester | 9 | 9 | 7 | 9 | 9 | 13 |
| Columbia | 22 | 19 | 24 | 18 | 13 | 14 |
| Cornell | 19 | 11 | 13 | 17 | 14 | 15 |
| Boston College | 75 | 67 | 56 | 42 | 32 | 16 |
| Princeton | 29 | 17 | 16 | 21 | 15 | 17 |
| North Carolina | 8 | 20 | 19 | 15 | 21 | 18 |
| Florida | 14 | 21 | 22 | 23 | 23 | 19 |
| Wisconsin | 13 | 18 | 15 | 16 | 22 | 20 |
| Texas | 24 | 16 | 11 | 12 | 19 | 21 |
| London School of Economics | 51 | 51 | 39 | 39 | 29 | 22 |
| Duke | 69 | 58 | 29 | 26 | 20 | 23 |
| Carnegie Mellon | 21 | 26 | 18 | 24 | 18 | 24 |
| Illinois | 12 | 10 | 20 | 22 | 25 | 25 |
| London Business School | NR | NR | 88 | 50 | 36 | 26 |
| Purdue | 3 | 6 | 12 | 14 | 16 | 27 |
| Minnesota | 46 | 36 | 27 | 27 | 34 | 28 |
| Toronto | 35 | 30 | 36 | 34 | 28 | 29 |
| Indiana | 18 | 24 | 25 | 20 | 27 | 30 |
| Georgia | 26 | 27 | 26 | 33 | 30 | 31 |
| Tilburg | NR | NR | 70 | 44 | 41 | 32 |
| INSEAD | NR | NR | NR | 45 | 31 | 33 |
| British Columbia | 28 | 33 | 34 | 41 | 45 | 34 |
| Maryland | 40 | 44 | 45 | 32 | 40 | 35 |
| Oxford | 79 | 68 | 52 | 35 | 35 | 36 |
| Washington | 23 | 25 | 23 | 25 | 26 | 37 |
| Iowa | 34 | 23 | 28 | 30 | 24 | 38 |
| Pittsburgh | 30 | 35 | 49 | 28 | 33 | 39 |
| Erasmus | NR | 77 | 71 | 57 | 47 | 40 |
| Mannheim | NR | NR | 96 | NR | 86 | 41 |
| Pennsylvania State | 27 | 34 | 41 | 29 | 38 | 42 |
| Arizona State | 55 | 49 | 47 | 31 | 39 | 43 |
| Southern California | NR | NR | 63 | 81 | 59 | 44 |
| Baruch | 42 | 55 | 62 | 47 | 43 | 45 |
| Georgia State | 39 | 39 | 59 | 40 | 60 | 46 |
| UC-San Diego | 80 | 45 | 37 | 49 | 46 | 47 |
| Houston | 78 | 57 | 55 | 59 | 52 | 48 |
| Michigan State | 31 | 32 | 46 | 46 | 58 | 49 |
| Washington in St. Louis | 45 | 41 | 42 | 56 | 42 | 50 |

Note: We base doctoral program productivity on the quality of publications for each period by authors receiving a doctoral degree from a given institution. In the event of a publication by doctoral student before receiving a degree, the doctoral-granting institution receives credit for the publication. We calculate rankings as the sum of Modified Author Affiliation Index (AAI) for all articles for an institution published over the specified period. Author contribution to the sum of Modified AAI is equal for all authors (e.g., coauthors from a single institution each contributes the full amount of a journal's Modified AAI to the ranking sum). Rankings are based on journal rankings where 80 institutions are considered top institutions. A ranking of NR indicates a period in which the institutional rank was outside of the top 100. We use shading to denote the level of program rankings, with the darkest color denoting the 10 highest ranked programs and the lighter colors denoting lower rankings.

**TABLE 11. Doctoral Program Productivity Rankings over 1985–2014: Top 80/Partial Credit.**

| Institution | 1985–1989 | 1990–1994 | 1995–1999 | 2000–2004 | 2005–2009 | 2010–2014 |
|---|---|---|---|---|---|---|
| Chicago | 1 | 1 | 1 | 1 | 1 | 1 |
| Harvard | 3 | 4 | 2 | 3 | 3 | 2 |
| MIT | 2 | 2 | 3 | 2 | 2 | 3 |
| Stanford | 6 | 5 | 6 | 5 | 4 | 4 |
| NYU | 10 | 16 | 9 | 7 | 6 | 5 |
| Pennsylvania | 4 | 3 | 4 | 4 | 5 | 6 |
| UC-Berkeley | 9 | 11 | 11 | 11 | 8 | 7 |
| Yale | 13 | 22 | 19 | 12 | 10 | 8 |
| UCLA | 7 | 8 | 5 | 6 | 7 | 9 |
| Michigan | 19 | 12 | 18 | 21 | 17 | 10 |
| Northwestern | 14 | 7 | 10 | 10 | 11 | 11 |
| Ohio State | 22 | 15 | 8 | 8 | 12 | 12 |
| Rochester | 8 | 10 | 7 | 9 | 9 | 13 |
| Columbia | 21 | 13 | 24 | 15 | 14 | 14 |
| Princeton | 26 | 17 | 12 | 13 | 13 | 15 |
| Boston College | 71 | 69 | 57 | 42 | 30 | 16 |
| Cornell | 20 | 14 | 13 | 18 | 15 | 17 |
| London School of Economics | 53 | 52 | 39 | 33 | 24 | 18 |
| North Carolina | 11 | 21 | 17 | 17 | 22 | 19 |
| Wisconsin | 15 | 18 | 16 | 19 | 21 | 20 |
| Duke | 69 | 50 | 28 | 27 | 19 | 21 |
| Florida | 18 | 19 | 21 | 23 | 27 | 22 |
| Texas | 23 | 20 | 14 | 16 | 20 | 23 |
| Carnegie Mellon | 17 | 25 | 20 | 24 | 16 | 24 |
| London Business School | NR | NR | 76 | 50 | 35 | 25 |
| Illinois | 12 | 9 | 22 | 22 | 25 | 26 |
| Purdue | 5 | 6 | 15 | 14 | 18 | 27 |
| Minnesota | 40 | 27 | 25 | 26 | 34 | 28 |
| Toronto | 32 | 28 | 30 | 30 | 28 | 29 |
| Tilburg | NR | 97 | 71 | 44 | 44 | 30 |
| Indiana | 16 | 23 | 26 | 20 | 29 | 31 |
| British Columbia | 25 | 33 | 31 | 38 | 41 | 32 |
| INSEAD | NR | NR | NR | 39 | 31 | 33 |
| Maryland | 38 | 44 | 47 | 28 | 37 | 34 |
| Georgia | 27 | 30 | 27 | 36 | 33 | 35 |
| Washington | 24 | 24 | 23 | 25 | 23 | 36 |
| Oxford | 74 | 61 | 51 | 35 | 36 | 37 |
| Pennsylvania State | 28 | 37 | 43 | 29 | 40 | 38 |
| UC-San Diego | 78 | 46 | 37 | 53 | 43 | 39 |
| Southern California | NR | NR | 63 | 86 | 60 | 40 |
| Mannheim | NR | NR | 93 | NR | 84 | 41 |
| Iowa | 35 | 26 | 29 | 32 | 26 | 42 |
| Erasmus | NR | 77 | 70 | 55 | 48 | 43 |
| Pittsburgh | 34 | 40 | 48 | 34 | 32 | 44 |
| Arizona State | 56 | 54 | 50 | 31 | 42 | 45 |
| Georgia State | 43 | 38 | 66 | 43 | 55 | 46 |
| Houston | 75 | 63 | 59 | 61 | 58 | 47 |
| Baruch | 45 | 57 | 55 | 52 | 45 | 48 |
| Washington in St. Louis | 41 | 36 | 41 | 48 | 39 | 49 |
| Michigan State | 31 | 35 | 42 | 49 | 59 | 50 |

Note: We base doctoral program productivity on the quality of publications for each period by authors receiving a doctoral degree from a given institution. In the event of a publication by doctoral student before receiving a degree, the doctoral-granting institution receives credit for the publication. We sum proportional contributions to the sum of Modified Author Affiliation Index (AAI) for each author for a given article (e.g., each coauthor contributes a fractional amount of a journal's Modified AAI based on the number of authors to the ranking sum). The rankings are based on the journal rankings where 80 institutions are considered top institutions. A ranking of NR indicates a period in which the institutional rank was outside of the top 100. We use shading to denote the level of program rankings, with the darkest color denoting the 10 highest ranked programs and the lighter colors denoting lower rankings.

relatively stable in the top six. Substantial movement occurs beyond the top six institutions. Some universities, such as Boston College and Duke University, experience substantial upward movement in ranking with regard to doctoral student productivity. As with university and nonacademic institution rankings, large movements in rankings occur as universities place more importance on their doctoral program, or as a small number of very productive past graduates help increase overall ranking.

Similar to the university and nonacademic institution ranking, evidence from Table 10 shows that international universities increase their standing over time. London Business School, Tilburg, INSEAD, Erasmus University Rotterdam, and the University of Manheim each move from outside of the top 100 into the top 50 doctoral programs. Two international universities, London School of Economics and the University of Oxford, move from positions in the top 100 to the top 50.

To ensure that our rankings are not driven by partial or full credit awarded for a published article, we perform a second ranking, providing fractional Modified AAI scores to each institution for the aggregate AAI. Table 11 shows that the results in Table 10 are not materially changed when partial authorship is considered.[12]

## VI. Conclusion

Over a 30-year period (1985–2014), we find increases in the number of coauthored publications involving collaboration between authors at different institutions. The increased collaboration is likely due to advances in communication technology and increased productivity requirements. Whereas other disciplines often choose to order authorship by level of contribution, we find little evidence to support ordering of authors by level of contribution in the finance discipline.

Changes in coauthorship trends require a new focus in ranking of journals, institutions, and doctoral programs. Using 30 years of publications across 20 finance journals, we employ a novel, iterative loop system to rank journals, institutions, and doctoral programs. The internally updating approach ranks both journals and institutions over five-year periods. Journal and institutional rankings require only a baseline input for initial rankings, allowing calculation of subsequent rankings, thus minimal dependence on outside inputs. Over the ranking period, journal rankings reach a degree of stability after approximately 50 articles. Each additional article affects the Modified AAI by a few thousandths or less. The rankings for journals, institutions, and doctoral programs are robust to differing definitions of top-tier institutions, fractional authorship, and source of initial calibration rankings.

In the initial years of publication, new journals (e.g., *Journal of Financial Intermediation* and *Journal of Corporate Finance*) demonstrate a splash, generating high visibility and achieving high rankings. We attribute the high ranking for these journals to attracting researchers from high-profile institutions for early issues of the journal. The

[12] In untabulated results, additional robustness checks shifting the top 80 to top 50 universities and nonacademic institutions and altering the calibration ranking to the rankings of Table 2 in Chen and Fok (2003) are performed. The results of the robustness checks remain materially similar to those presented in Table 10.

splash effect introduces the journal as an outlet for quality research. Other journals rise in ranking across the sample from initially lower rankings (*Review of Finance* and *Mathematical Finance*). We attribute the rise in ranking to an effort by editorial boards to shift the focus of the journal through more strict standards. Outside of the top five journals, niche journals tend to rank higher than broad-based journals.

Our institutional rankings show little movement within a small group of elite universities, but substantially more movement outside of the elite schools. Some movement can be attributed to increased productivity of international universities. A number of non-U.S. institutions increase their ranking from outside the top 100 to inside the top 50 over the last 30 years. Whereas the prior literature focuses on ranking only academic institutions, we allow for nonacademic institutions to be ranked and find increased productivity in our sample of publications.

Doctoral program rankings provide insight into the quality of instruction and preparation for prospective doctoral students. We find slightly more consistency in the productivity of doctoral graduates from elite schools. The phenomenon found for university rankings based on publication record persists in our doctoral productivity rankings with relation to international universities. Once again we find that several unranked international universities in early rankings move into the top 50.

The dynamics of finance research are likely to continue shifting as the field moves into the future. Will international universities and nonacademic institutions continue to improve their ranking relative to U.S. universities over time? What new journals will affect the finance publishing landscape and how will they alter the rankings? Which existing journals will be able to increase their prestige and which will decline in ranking at their expense? An iterative approach allows researchers to examine and explore the impact of future shifts.

## Appendix: Raw Modified AAI Journal Scores

**TABLE A1. Modified AAI Journal Scores over 1985–2014: Top 80/Equal Weighting.**

| Journal | 1985–1989 | 1990–1994 | 1995–1999 | 2000–2004 | 2005–2009 | 2010–2014 |
|---|---|---|---|---|---|---|
| *The Journal of Finance* | 0.786 | 0.750 | 0.691 | 0.752 | 0.719 | 0.752 |
| *The Review of Financial Studies* | 0.955 | 0.867 | 0.700 | 0.735 | 0.700 | 0.688 |
| *Journal of Financial Economics* | 0.911 | 0.776 | 0.740 | 0.728 | 0.688 | 0.653 |
| *Review of Finance* | N/A | N/A | 0.258 | 0.243 | 0.399 | 0.397 |
| *Journal of Financial and Quantitative Analysis* | 0.697 | 0.677 | 0.566 | 0.535 | 0.496 | 0.396 |
| *Journal of Financial Intermediation* | N/A | 0.750 | 0.553 | 0.380 | 0.426 | 0.382 |
| *Journal of Financial Markets* | N/A | N/A | 0.546 | 0.473 | 0.414 | 0.360 |
| *Journal of Money, Credit and Banking* | 0.531 | 0.492 | 0.439 | 0.338 | 0.308 | 0.319 |
| *Mathematical Finance* | N/A | 0.361 | 0.230 | 0.222 | 0.282 | 0.308 |
| *Journal of Corporate Finance* | N/A | 0.700 | 0.482 | 0.467 | 0.355 | 0.264 |
| *The Journal of Risk and Insurance* | 0.492 | 0.518 | 0.517 | 0.252 | 0.283 | 0.256 |
| *Financial Analysts Journal* | 0.332 | 0.255 | 0.278 | 0.298 | 0.273 | 0.255 |
| *Financial Management* | 0.491 | 0.431 | 0.427 | 0.429 | 0.347 | 0.248 |
| *Journal of Empirical Finance* | N/A | 0.567 | 0.337 | 0.291 | 0.292 | 0.170 |
| *European Financial Management* | N/A | N/A | 0.210 | 0.158 | 0.235 | 0.163 |
| *Journal of Banking and Finance* | 0.516 | 0.349 | 0.385 | 0.230 | 0.228 | 0.150 |
| *The Journal of Financial Research* | 0.490 | 0.334 | 0.300 | 0.247 | 0.151 | 0.130 |
| *The Financial Review* | 0.263 | 0.333 | 0.310 | 0.210 | 0.143 | 0.130 |
| *The Journal of Futures Markets* | 0.421 | 0.348 | 0.296 | 0.236 | 0.152 | 0.116 |
| *The Journal of Business* | 0.745 | 0.687 | 0.667 | 0.633 | 0.506 | N/A |

Note: Raw Modified Author Affiliation Index (AAI) scores for each subperiod for the 20 journals in our sample are calculated using equation (2). We consider the top 80 institutions as top institutions for the Modified AAI calculation. We base the institutional ranking for the first period (the basis of 1985–1989 rankings) on the institutional rankings from Appendix A of Chen and Huang (2007). We determine all subsequent ranking periods from the institutional rankings for the previous period (e.g., institutional rankings for 1985–1989 are used to produce journal rankings for 1990–1994). The institutional rankings serving as the basis for journal rankings provide full credit for each author regardless of the number of authors. A ranking of N/A indicates a period in which the journal had no issues published. Rankings over 1990–1994 for both the *Journal of Corporate Finance* and *Journal of Empirical Finance* have fewer than 30 articles contributing to the Modified AAI score. The *Journal of Financial Markets* has fewer than 30 articles contributing to its initial ranking in 1995–1999.

**TABLE A2. Modified AAI Journal Scores over 1985–2014: Top 50/Equal Weighting.**

| Journal | 1985–1989 | 1990–1994 | 1995–1999 | 2000–2004 | 2005–2009 | 2010–2014 |
|---|---|---|---|---|---|---|
| *The Journal of Finance* | 0.674 | 0.662 | 0.590 | 0.654 | 0.616 | 0.647 |
| *The Review of Financial Studies* | 0.890 | 0.769 | 0.640 | 0.638 | 0.598 | 0.557 |
| *Journal of Financial Economics* | 0.803 | 0.636 | 0.626 | 0.579 | 0.567 | 0.505 |
| *Review of Finance* | N/A | N/A | 0.200 | 0.210 | 0.333 | 0.295 |
| *Journal of Financial Intermediation* | N/A | 0.604 | 0.486 | 0.305 | 0.316 | 0.283 |
| *Journal of Financial Markets* | N/A | N/A | 0.466 | 0.379 | 0.293 | 0.264 |
| *Journal of Financial and Quantitative Analysis* | 0.475 | 0.476 | 0.396 | 0.383 | 0.327 | 0.259 |
| *Journal of Money, Credit and Banking* | 0.385 | 0.357 | 0.336 | 0.298 | 0.249 | 0.251 |
| *Mathematical Finance* | N/A | 0.299 | 0.190 | 0.198 | 0.194 | 0.236 |
| *Financial Analysts Journal* | 0.273 | 0.188 | 0.245 | 0.213 | 0.213 | 0.222 |
| *The Journal of Risk and Insurance* | 0.390 | 0.415 | 0.452 | 0.204 | 0.204 | 0.161 |
| *Journal of Corporate Finance* | N/A | 0.700 | 0.439 | 0.276 | 0.261 | 0.155 |
| *Financial Management* | 0.363 | 0.320 | 0.286 | 0.284 | 0.216 | 0.151 |
| *European Financial Management* | N/A | N/A | 0.163 | 0.142 | 0.181 | 0.112 |
| *Journal of Empirical Finance* | N/A | 0.222 | 0.240 | 0.239 | 0.222 | 0.104 |
| *The Journal of Futures Markets* | 0.279 | 0.214 | 0.184 | 0.114 | 0.105 | 0.073 |
| *Journal of Banking and Finance* | 0.373 | 0.245 | 0.288 | 0.164 | 0.132 | 0.071 |
| *The Financial Review* | 0.144 | 0.204 | 0.139 | 0.071 | 0.088 | 0.068 |
| *The Journal of Financial Research* | 0.294 | 0.228 | 0.189 | 0.126 | 0.074 | 0.047 |
| *The Journal of Business* | 0.660 | 0.628 | 0.573 | 0.510 | 0.374 | N/A |

Note: Raw Modified Author Affiliation Index (AAI) scores for each subperiod for the 20 journals in our sample are calculated using equation (2). We consider the top 50 institutions as top institutions for the Modified AAI calculation. We base the institutional ranking for the first period (the basis of 1985–1989 rankings) on the institutional rankings from Appendix A of Chen and Huang (2007). We determine all subsequent ranking periods from the institutional rankings for the previous period (e.g., institutional rankings for 1985–1989 are used to produce journal rankings for 1990–1994). The institutional rankings serving as the basis for journal rankings provide full credit for each author regardless of the number of authors. A ranking of N/A indicates a period in which the journal had no issues published. Rankings over 1990–1994 for both the *Journal of Corporate Finance* and *Journal of Empirical Finance* have fewer than 30 articles contributing to the Modified AAI score. The *Journal of Financial Markets* has fewer than 30 articles contributing to its initial ranking in 1995–1999.

**TABLE A3. Modified AAI Journal Scores over 1985–2014: Top 80/Partial Weighting.**

| Journal | 1985–1989 | 1990–1994 | 1995–1999 | 2000–2004 | 2005–2009 | 2010–2014 |
|---|---|---|---|---|---|---|
| *The Journal of Finance* | 0.786 | 0.749 | 0.686 | 0.777 | 0.729 | 0.746 |
| *The Review of Financial Studies* | 0.955 | 0.863 | 0.706 | 0.766 | 0.714 | 0.692 |
| *Journal of Financial Economics* | 0.911 | 0.770 | 0.735 | 0.744 | 0.701 | 0.640 |
| *Review of Finance* | N/A | N/A | 0.248 | 0.280 | 0.401 | 0.395 |
| *Journal of Financial and Quantitative Analysis* | 0.697 | 0.673 | 0.555 | 0.544 | 0.500 | 0.386 |
| *Journal of Financial Intermediation* | N/A | 0.750 | 0.560 | 0.375 | 0.415 | 0.378 |
| *Journal of Financial Markets* | N/A | N/A | 0.546 | 0.498 | 0.409 | 0.358 |
| *Mathematical Finance* | N/A | 0.361 | 0.230 | 0.249 | 0.286 | 0.324 |
| *Journal of Money, Credit and Banking* | 0.531 | 0.497 | 0.440 | 0.380 | 0.311 | 0.322 |
| *Financial Analysts Journal* | 0.332 | 0.256 | 0.281 | 0.284 | 0.287 | 0.266 |
| *Journal of Corporate Finance* | N/A | 0.700 | 0.482 | 0.439 | 0.358 | 0.252 |
| *The Journal of Risk and Insurance* | 0.492 | 0.524 | 0.511 | 0.249 | 0.279 | 0.250 |
| *Financial Management* | 0.491 | 0.433 | 0.403 | 0.412 | 0.313 | 0.236 |
| *Journal of Empirical Finance* | N/A | 0.567 | 0.337 | 0.291 | 0.310 | 0.169 |
| *European Financial Management* | N/A | N/A | 0.210 | 0.178 | 0.236 | 0.161 |
| *Journal of Banking and Finance* | 0.516 | 0.350 | 0.382 | 0.230 | 0.231 | 0.143 |
| *The Financial Review* | 0.263 | 0.333 | 0.298 | 0.207 | 0.130 | 0.126 |
| *The Journal of Financial Research* | 0.490 | 0.334 | 0.294 | 0.247 | 0.142 | 0.125 |
| *The Journal of Futures Markets* | 0.421 | 0.348 | 0.277 | 0.202 | 0.150 | 0.103 |
| *The Journal of Business* | 0.745 | 0.683 | 0.667 | 0.635 | 0.501 | N/A |

Note: Raw Modified Author Affiliation Index (AAI) scores for each subperiod for the 20 journals in our sample are calculated using equation (2). We consider the top 80 institutions as top institutions for the Modified AAI calculation. We base the institutional ranking for the first period (the basis of 1985–1989 rankings) on the institutional rankings from Appendix A of Chen and Huang (2007). We determine all subsequent ranking periods from the institutional rankings for the previous period (e.g., institutional rankings for 1985–1989 are used to produce journal rankings for 1990–1994). The institutional rankings serving as the basis for journal rankings provide partial credit for each author based on the number of authors. A ranking of N/A indicates a period in which the journal had no issues published. Rankings over 1990–1994 for both the *Journal of Corporate Finance* and *Journal of Empirical Finance* have fewer than 30 articles contributing to the Modified AAI score. The *Journal of Financial Markets* has fewer than 30 articles contributing to its initial ranking in 1995–1999.

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