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"What do Experts Know About Ranking Journal Quality?
A Comparison with ISI Research Impact in Finance"

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What do Experts Know About Ranking Journal Quality? A Comparison with ISI Research Impact in Finance*

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Abstract

Experts possess knowledge and information that are not publicly available. The paper is concerned with the ranking of academic journal quality and research impact using a survey of experts from a national project on ranking academic finance journals. A comparison is made with publicly available bibliometric data, namely the Thomson Reuters ISI Web of Science citations database (hereafter ISI) for the Business - Finance category. The paper analyses the leading international journals in Finance using expert scores and quantifiable Research Assessment Measures (RAMs), and highlights the similarities and differences in the expert scores and alternative RAMs, where the RAMs are based on alternative transformations of citations taken from the ISI database. Alternative RAMs may be calculated annually or updated daily to answer the perennial questions as to When, Where and How (frequently) published papers are cited (see Chang et al. (2011a, b, c)). The RAMs include the most widely used RAM, namely the classic 2-year impact factor including journal self citations (2YIF), 2-year impact factor excluding journal self citations (2YIF*), 5-year impact factor including journal self citations (5YIF), Immediacy (or zero-year impact factor (0YIF)), Eigenfactor, Article Influence, C3PO (Citation Performance Per Paper Online), h-index, PI-BETA (Papers Ignored - By Even The Authors), 2-year Self-citation Threshold Approval Ratings (2Y-STAR), Historical Self-citation Threshold Approval Ratings (H-STAR), Impact Factor Inflation (IFI), and Cited Article Influence (CAI). As data are not available for 5YIF, Article Influence and CAI for 13 of the leading 34 journals considered, 10 RAMs are analysed for 21 highly-cited journals in Finance. Harmonic mean rankings of the 10 RAMs for the 34 highly-cited journals are also presented. It is shown that emphasizing the 2-year impact factor of a journal, which partly answers the question as to When published papers are cited, to the exclusion of other informative RAMs, which answer Where and How (frequently) published papers are cited, can lead to a distorted evaluation of journal impact and influence relative to the Harmonic Mean rankings. A simple regression model is used to predict expert scores on the basis of RAMs that capture journal impact, journal policy, the number of high quality papers, and quantitative information about a journal.

Keywords: Expert scores, Journal quality, Research assessment measures, Impact factor, IFI, C3PO, PI-BETA, STAR, Eigenfactor, Article Influence, h-index.

JEL Classifications: C18, C81, C83.

1. Introduction

Experts possess knowledge and information that are not publicly available, and know things that others do not know (see, for example, Franses et al. (2009)). It is not at all common for academic experts to provide quantitative rankings of academic journals. In the event that expert rankings become available, it is imperative to compare such rankings with those based on quantifiable bibliometric Research Assessment Measures (RAMs) using publicly available data sources. One of the main purposes of the paper is to compare expert rankings of academic journal quality and research impact, using a survey of experts from a national project on ranking academic finance journals, with quantifiable RAMs.

A leading high-quality database for generating RAMs to evaluate the research performance of individual researchers and the quality of academic journals is the Thomson Reuters ISI Web of Science (2011) database (hereafter ISI), where the RAMs are essentially based on alternative transformations of citations data. Although there are important caveats regarding the methodology and data collection methods underlying any database (see, for example, Seglen (1997) and Chang et al. (2011a, b, c, d) for caveats regarding ISI), the ISI citations database is the oldest source of RAMs and undoubtedly the benchmark against which other databases are compared.

As all of the widely-used RAMs are based on citations, either directly or indirectly, alternative rankings methodologies can be applied to any discipline or sub-discipline in the sciences and social sciences. It is well known that the impact of journal publications can differ substantially across disciplines in both the sciences and social sciences. Various RAMs have been used to compare journals in a wide range of ISI disciplines, such as the leading 40 journals in Economics, and leading 10 journals in each of Management, Finance and Marketing (Chang et al. (2011a)), the leading 6 journals in each of 20 disciplines in the Sciences (Chang et al (2011b)), the leading 10 journals in Econometrics (Chang et al. (2011c)), and the leading 26 journals in Neuroscience (Chang et al. (2011d)). As a large number of leading journals in Finance have not yet been analysed, either in terms of expert scores or in terms of citations and impact on the academic profession, one of the primary aims of this paper is to undertake such an assessment.

If journal citations data are not used cautiously, it is possible for misleading, inappropriate and possibly unintended inferences to be drawn. Although Seglen (1997) argued strongly against using impact factors of journals, which are based on citations, to evaluate scientific research, Hirsch (2005) suggested a widely-used citations measure, the h-index, for quantifying an individual researcher's scientific research output. Although citations data are used more widely as a measure of scientific research output in the sciences than in the social sciences, the h-index is now widely used to evaluate both the research output of individual researchers and to quantify the scientific output published in academic journals across a wide range of disciplines in the sciences and social sciences.

Citations are crucial for evaluating the impact and visibility of high quality and significant scientific research output. Leading journals tend to publish significant scientific research output, which can be measured using alternative RAMs, such as a journal's h-index (Hirsch (2005)). Ranking journal quality is crucial for individual scientific researchers, research institutes, university departments and journals. From a career perspective, the perceived research performance of individual researchers is a key issue in hiring, tenure and promotion decisions.

In the absence of appropriate information regarding the perceived quality of an individual's scientific research output, the perceived quality of academic journals has long been used as a suitable proxy. Such a proxy may not be especially meaningful for established researchers, especially in the sciences but, for early career researchers who may not yet have many citations, the quality of an individual's scientific research output may be based on the perceived quality of the journals in which it has been published. This is especially true in many disciplines in the social sciences.

Following convention in many disciplines in the sciences and social sciences, Chang et al. (2011a, b, c) have argued that the acceptance of a paper for publication in a journal is typically based on the expertise of a small number of editors and referees. Although the specific number of referees can vary considerably across disciplines, it is unarguably the case that acceptance for publications relies on a handful of reviewers, who determine the rejection rate of a journal **before** a paper is published. As editors and referees are not immune from making errors of judgment, the rejection of a paper is not necessarily an accurate reflection of

its quality or potential impact, just as acceptance of a paper for publication is not a guarantee that it is significant and will have future impact.

In comparison with the rejection rate of a journal before papers are published, it is worthwhile recognizing that there is an implicit rejection rate after a paper has been published in a journal. This implicit rejection rate depends on the worldwide scientific community. As argued in Chang et al. (2011c), the proportion of published papers that is ignored by the profession, and sometimes even by the authors themselves, is an important impact performance measure **after** publication. The worldwide scientific community is less likely to make serious errors of judgment regarding the quality of scientific research papers after they have been published than a small number of editors and referees who pass judgment on the purported quality and likely future impact of a paper before publication.

Citations capture both the impact of a journal and the impact of the research output of individual researchers. As the primary quantitative method of evaluating journal and research impact is through citations, it is not surprising that all RAMs are based, directly or indirectly, on citations. Nevertheless, the perceived quality of a journal remains a key measure of the impact of researchers, especially in the social sciences. One of the aims of the paper is to evaluate rankings based on a survey of experts from a national project on ranking academic finance journals. A comparison is also made with ISI data for the Business - Finance category.

This paper examines the importance of RAMs as viable rankings criteria in Finance, and attempts to answer some important questions raised in Chang et al. (2011a, b, c), namely When, Where and How (frequently) are published papers cited in leading journals in a discipline or range of sub-disciplines. In this paper, we ask the same questions of the leading journals in the ISI discipline of Business - Finance, and evaluate the usefulness of 13 existing RAMs for 34 leading finance journals. As a basis of comparison, expert scores are intended to rank journal quality using a single metric.

The plan of the remainder of the paper is as follows. Section 2 presents some key RAMs using ISI data that may be calculated annually or updated daily, including the most widely used RAM, namely the classic 2-year impact factor including journal self citations (2YIF), 2-year impact factor excluding journal self citations (2YIF*), 5-year impact factor including journal self citations (5YIF), Immediacy (or zero-year impact factor (0YIF)), Eigenfactor,

Article Influence, C3PO (Citation Performance Per Paper Online), h-index, PI-BETA (Papers Ignored - By Even The Authors), 2-year Self-citation Threshold Approval Ratings (2Y-STAR), Historical Self-citation Threshold Approval Ratings (H-STAR), Impact Factor Inflation (IFI), and Cited Article Influence (CAI). Section 3 discusses and analyses 13 RAMs for 34 leading journals in the ISI category of Business - Finance. A simple regression model is estimated to predict expert scores on the basis of journal impact, journal policy, the number of high quality papers, and quantitative information about a journal. Section 4 summarizes the ranking outcomes and gives some practical suggestions as to how to rank journal quality.

2. Expert Scores and Research Assessment Measures (RAM)

The data on Expert Scores were obtained from a national project on ranking academic finance journals that was funded by the National Science Council, Taiwan. The survey data were kindly provided by Shing-yang Hu (National Taiwan University). The other members of the research team were Shao-Chi Chang (National Cheng-Kung University), Yehning Chen (National Taiwan University), San-Lin Chung (National Taiwan University), Chiuling Lu (National Taiwan University), and Chenghsien Tsai (National Chengchi University).

The invitation to experts from Professor Shing-yang Hu was given as follows: "The survey is initiated by the National Science Council (NSC), a government unit of the Republic of China (Taiwan) administrating grants/funding for academic research. The main purpose of the project is to establish a list of journals as reference (1) for finance researchers in Taiwan to submit their manuscripts for publication in international journals, and (2) for the NSC to determine research grants. We would like to invite you to fill out an online questionnaire about academic finance journals. There are 60 journals in total. Based on your judgment of the quality of the papers published in the journal and the academic impacts of the journal, please rank each journal on a scale of 1 (the worst, or the "least best") to 7 (the best). If you are not familiar enough with some of the journals to assign scores to them, please choose the "Not Familiar" option. For the purpose of data analysis, we would also like you to provide information about your major research areas and academic title. All your responses will be confidential."

Responses were received from 93 experts (referred to as "distinguished scholars" in the national project), including the second author of this paper..

As an alternative approach to ranking journal impact and quality, RAM data are obtained from the Thomson Reuters ISI Web of Science (2011). As discussed in a number of papers, such as Chang et al. (2011a, b, c), the RAMs are intended as descriptive statistics to capture journal impact and performance, and are not based on a mathematical model. Hence, in what follows, no optimization or estimation is required in calculating the alternative RAMs.

As the alternative RAMs that are provided in ISI and in several recent publications may not be widely known, this section provides a brief description and definition of 13 RAMs that may be calculated annually or updated daily to answer the questions as to When, and Where and How (frequently), published papers are cited (for further details, see Chang et al. (2011a, b, c)). The answers to When published papers are cited are based on the set {2YIF, 2YIF*, 5YIF, Immediacy}, and the answers to Where and How (frequently) published papers are cited are based on the set {Eigenfactor, Article Influence, IFI, H-STAR, 2Y-STAR, C3PO, h-index, PI-BETA, CAI}. As compared with alternative RAMs, expert scores are intended to rank journal quality using a single metric.

2.1 Annual RAM

With three exceptions, namely Eigenfactor, Article Influence and Cited Article Influence, existing RAMs are based on citations data and are reported separately for the sciences and social sciences. RAMs may be computed annually or updated daily. The annual RAMs given below are calculated for a Journal Citations Reports (JCR) calendar year, which is the year before the annual RAM are released. For example, the RAMs were released in late-June 2011 for the JCR calendar year 2010.

(1) 2-year impact factor including journal self citations (2YIF):

The classic 2-year impact factor including journal self citations (2YIF) of a journal is typically referred to as "the impact factor", is calculated annually, and is defined as "Total citations in a year to papers published in a journal in the previous 2 years / Total papers published in a journal in the previous 2 years". The choice of 2 years by ISI is arbitrary. It is

widely held in the academic community, and certainly by the editors and publishers of journals, that a higher 2YIF is better than lower.

(2) 2-year impact factor excluding journal self citations (2YIF*):

ISI also reports a 2-year impact factor without journal self citations (that is, citations to a journal in which a citing paper is published), which is calculated annually. As this impact factor is not widely known or used, Chang et al. (2011c) refer to this RAM as 2YIF*. Although 2YIF* is rarely reported, a higher value would be preferred to lower.

(3) 5-year impact factor including journal self citations (5YIF):

The 5-year impact factor including journal self citations (5YIF) of a journal is calculated annually, and is defined as "Total citations in a year to papers published in a journal in the previous 5 years / Total papers published in a journal in the previous 5 years." The choice of 5 years by ISI is arbitrary. Although 5YIF is not widely reported, a higher value would be preferred to lower.

(4) Immediacy, or zero-year impact factor including journal self citations (0YIF):

Immediacy is a zero-year impact factor including journal self citations (0YIF) of a journal, is calculated annually, and is defined as "Total citations to papers published in a journal in the same year / Total papers published in a journal in the same year." The choice of the same year by ISI is arbitrary, but the nature of Immediacy makes it clear that a very short run outcome is under consideration. Although Immediacy is rarely reported, a higher value would be preferred to lower.

(5) Eigenfactor:

The Eigenfactor score (see Bergstrom (2007), Bergstrom and West (2008), Bergstrom, West and Wiseman (2008)) is a modified 5YIF, and is calculated annually. The Eigenfactor algorithm (see www.eigenfactor.org/methods.htm) effectively ranks journals according to citations and the length of time that researchers are logged on to a journal's website. To state the obvious, Eigenfactor does not check how much time researchers spend reading hard copies of journals, which would require extensive surveys across a wide range of disciplines, but it does provide an indication as to how much time researchers might spend reading or scanning articles on a journal's website. A higher Eigenfactor score would be preferred to lower.

(6) Article Influence:

Article Influence (see Bergstrom (2007), Bergstrom and West (2008), Bergstrom, West and Wiseman (2008)) measures the relative importance of a journal on a per-article basis, is a standardized Eigenfactor score, and is calculated annually. Article Influence is defined as "Eigenfactor score divided by the fraction of all articles published by a journal." A higher Article Influence would be preferred to lower.

(7) IFI:

The ratio of 2YIF to 2YIF* is intended to capture how journal self citations can inflate the impact factor of a journal, whether this is a self-promotion decision made independently by publishing authors or as an administrative decision undertaken by a journal's editors and/or publishers. Chang et al. (2011a) define Impact Factor Inflation (IFI) as "IFI = 2YIF / 2YIF*". The minimum value for IFI is 1, with any value above the minimum capturing the effect of journal self citations on the 2-year impact factor. A lower IFI would be preferred to higher.

(8) H-STAR:

ISI has implicitly recognized the inflation in journal self citations by calculating an impact factor that excludes self citations, and provides data on journal self citations, both historically and for the preceding two years, in calculating 2YIF. Chang et al. (2011b) define the Self-citation Threshold Approval Rating (STAR) as the percentage difference between citations in other journals and journal self citations. Defining HS = historical journal self citations, then "H-STAR = [(100-HS) - HS] = (100-2HS)". If HS = 0 (minimum), 25, 50 or 100 (maximum) percent, for example, H-STAR = 100, 50, 0 and -100, respectively. A higher H-STAR would be preferred to lower.

(9) 2Y-STAR:

Defining 2YS = journal self citations over the preceding 2-year period, then "2Y-STAR = [(100-2YS) – 2YS] = (100-2(2YS))". If 2YS = 0 (minimum), 25, 50 or 100 (maximum) percent, for example, 2Y-STAR = 100, 50, 0 and -100, respectively. A higher 2Y-STAR would be preferred to lower.

2.2 Daily Updated RAM

Some RAMs are updated daily, and are reported for a given day in a calendar year rather than for a JCR year.

(10) C3PO:

ISI reports the mean number of citations for a journal, namely total citations up to a given day divided by the number of papers published in a journal up to the same day, as the "average" number of citations. In order to distinguish the mean from the median and mode, the C3PO of an ISI journal on any given day is defined by Chang et al. (2011a) as "C3PO (Citation Performance Per Paper Online) = Total citations to a journal / Total papers published in a journal." A higher C3PO would be preferred to lower. [Note: C3PO should not be confused with C-3PO, the Star Wars android.]

(11) h-index:

The h-index (Hirsch, 2005)) was originally proposed to assess the scientific research productivity and citations impact of individual researchers. However, the h-index can also be calculated for journals, and should be interpreted as assessing the impact or influence of highly cited journal publications. The h-index of a journal on any given day is based on cited and citing papers, including journal self citations, and is defined as "h-index = number of published papers, where each has at least h citations." A higher h-index would be preferred to lower.

(12) PI-BETA:

This RAM measures the proportion of papers in a journal that has never been cited, As such, PI-BETA is, in effect, a rejection rate of a journal **after** publication. Chang et al. (2011c) argue that lack of citations of a published paper, especially if it is not a recent publication, reflects on the quality of a journal by exposing: (i) what might be considered as incorrect decisions by the members of the editorial board of a journal; and (ii) the lost opportunities of papers that might have been cited had they not been rejected by the journal. Chang et al. (2011c) propose that a paper with zero citations in ISI journals can be measured by PI-BETA (= Papers Ignored (PI) - By Even The Authors (BETA)), which is calculated for an ISI journal on any given day as "Number of papers with zero citations in a journal / Total papers published in a journal." As journals would typically prefer a higher proportion of published papers being cited rather than ignored, a lower PI-BETA would be preferred to higher.

(13) CAI:

Article Influence is intended to measure the average influence of an article across the sciences and social sciences. As an article with zero citations typically does not have any (academic) influence, a more suitable measure of the influence of cited articles would seem to be Cited Article Influence (CAI). Chang et al. (2011b) define CAI as "CAI = (1 - PI-BETA)(Article Influence)". If PI-BETA = 0, then CAI is equivalent to Article Influence; if PI-BETA = 1, then CAI = 0. As Article Influence is calculated annually and PI-BETA is updated daily, CAI may be updated daily. A higher CAI would be preferred to lower.

3. Analysis of Expert Scores and RAMs for ISI Journals in Finance

The results of a survey of experts from a national project on ranking 60 leading academic journals in Finance are reported in Table 1. The mean score is based on 93 experts ("distinguished scholars"), who ranked each of the 60 leading journals from 1 (Low) to 7 (High). Journals are ranked according to Rank 1, which counts "Not familiar" responses as 0. Rank 2 excludes "Not familiar" responses. The correlation coefficient between Rank 1 and Rank 2 is 0.979, and the correlation coefficient between the Rank 1 mean score and Rank 2 mean score is 0.987, both of which are high.

The first 6 journals are identical for Rank 1 and Rank 2. Moreover, the first 17 journals according to Rank 1, and first 19 journals according to Rank 2, are included in ISI. Five of the lowest 12 ranked journals are also in ISI. The range of mean scores for Rank 1 is (0.88, 6.98), with mean and the range for Rank 2 is (1.95, 6.98), which understandably suggests that "Not familiar" responses were not for the most highly ranked journals. As the minimum Rank 1 mean score can be below 1, which is outside the range of possible scores in the survey, in the subsequent analysis we will use only the data pertaining to Rank 2. As asterisks (*) show that 26 of the 60 nominated journals are not included in ISI, in what follows the expert scores of 34 leading finance journals will be compared with the RAMs from ISI.

In the remainder of the paper, we compare the Expert Scores of the 34 journals that are included in ISI with the RAMs that are based on ISI citations data (see Tables 2-6). Only articles from the ISI Web of Science are included in the citations data, which were downloaded from ISI on 28 November 2011 for all journals since their inception. Of the 34

journals listed in ISI in Table 1, 13 journals have been included in ISI for less than 5 years, so that 5YIF, Article Influence and CAI data are not available for these 13 journals.

In Table 2 we evaluate the 34 leading journals in Finance, which are ranked according to Expert Score. The means and ranges of Expert Score are, respectively, 4.07 and (2.17, 6.98), of 2YIF are 1.153 and (0.262, 4.602), of 2YIF* are 0.931 and (0.214, 3.982), of 5YIF are 2.07 and (0.451, 6.529), and of Immediacy are 0.198 and (0, 0.797). These impact factors are consistent with the related areas of Economics, Business - Finance, Management, and Marketing (see Chang et al. (2011a)), but are lower than many disciplines in the sciences (see Chang et al. (2011b)). In Table 2, 5YIF is nearly always higher than 2YIF, which is to be expected in the social sciences as compared with the sciences, with 5YIF being lower than 2YIF only for Journal of Banking & Finance.

Journal self citations in Finance seem relatively high, with a mean IFI of 1.404 and a range of (1, 4.184), with the two highest IFI scores being 4.184 and 3.651 for Asia-Pacific Journal of Financial Studies and Journal of Banking & Finance, respectively. On average, the 34 leading journals in Finance have 2YIF that is inflated by a factor of 1.404 through journal self citations. It is worth highlighting that 3 of the 34 journals, Financial Analysts Journal, Journal of Derivatives, and International Finance, had zero self citations.

The h-index has a mean of 31 and a range of (2, 170), with the highest 3 h-indexes being 170, 156 and 85 for Journal of Finance, Journal of Financial Economics and Review of Financial Studies, respectively, which suggests a relatively large number of highly-cited papers in these 3 journals. There are 13 journals which have h-indexes less than 10, but only one of these journals, Journal of Risk, has been included in ISI for five years or more.

In terms of average citations, C3PO has a mean of 7.35 and a range of (0.35, 62.02), with much of the contribution to the mean coming from the leading 3 journals. Eigenfactor has a mean of 0.0078 and a range of (0.00009, 0.06034), with 3 journals clearly having the highest scores, and hence the greatest influence. Article Influence has a mean of 1.881 and a range of (0.228, 7.477), while Cited Article Influence (CAI) has a mean of 1.391 and a range of (0.126, 5.701). The leading 3 journals ranked according to Expert Score in Table 2 have by far the highest Article Influence and CAI scores.

H-STAR and 2Y-STAR for the 34 journals are not particularly high, with a mean of 77 and a range of (-40, 100) for H-STAR, and a much lower mean of 61 and a wider range of (-52, 100) for 2Y-STAR. The H-STAR and 2Y-STAR means of 77 and 61 reflect journal self citations of 11.5% and 19.5%, respectively, historically and for the preceding two years. On average, journal self citations have almost doubled over the preceding two years as compared with historical levels, which may be a troubling sign.

The PI-BETA scores are interesting. The mean is 0.423 so that, on average, more than 2 of every 5 papers that are published in the leading 34 journals in Finance are not cited. The range of (0.091, 0.792) suggests that the journal with the highest percentage of cited papers, Journal of Financial Economics, has fewer than one uncited paper for every 10 published papers, while the journal with the lowest percentage of cited papers, Journal of Behavioral Finance, has 8 uncited papers for every 10 published papers. Of the 34 journals in Table 2, 14 journals in Finance have PI-BETA that exceeds 0.5, which suggests that at least 1 of every 2 published papers in these journals has zero citations. The PI-BETA scores in Table 2 are typically higher than the values observed in the leading journals in economics, finance, management and marketing (see Chang et al. (2011a)), and are generally much higher than many disciplines in the sciences (see Chang et al. (2011b)).

As 13 journals have been included in ISI for less than 5 years, and hence do not have corresponding RAMs for 5YIF, Article Influence and CAI, the simple correlations of Expert Score and 13 RAMs for the 21 leading journals in Finance are given in Table 3, while the simple correlations of Expert Score and 10 RAMs for the 34 leading journals are given in Table 4. In both Tables 3 and 4, the simple correlations of Expert Score and the RAMs have the expected signs, namely positive for all RAMs except for IFI and PI-BETA. The correlation of Expert Score and IFI seems very low.

There are 18 and 5 RAM pairs for which the correlations exceed 0.9 (in absolute value) in Tables 3 and 4, respectively, and 22 and 13 RAM pairs in Tables 3 and 4, respectively, for which the correlations are in the range (0.8, 0.9), in absolute value. The correlation of 0.988 between 2YIF* and Article Influence in Table 3 is extremely high, which suggests that the 2-year impact factor excluding self citations and Article Influence are very similar for leading journals in Finance. A similar comment applies to the very high correlations between 2YIF* and CAI and between 5YIF and Eigenfactor in Table 3.

The correlation coefficients in Table 4 are generally lower than their counterparts in Table 3, with 3 of the highest 4 correlations involving Eigenfactor (with 2YIF, 2YIF* and h-index). Fersht (2009) showed that there was a very high positive correlation between Eigenfactor and the total number of journal citations, with a correlation coefficient of 0.968 for the top 200 cited ISI journals in 2007. As argued in Chang et al. (2011a, b, c) for different disciplines and sub-disciplines, such a high correlation should not be surprising as it captures the size-effect of journals, with the total number of publications and total citations typically being positively and highly correlated.

One of the primary purposes of the paper is to determine if either the sole use of Expert Scores, or an emphasis on the classic 2-year impact factor of a journal, 2YIF, to the exclusion of the other RAMs, or both, can lead to a distorted evaluation of journal quality, impact and influence. In order to provide an accurate summary measure of the Expert Score and 10 RAMs, 6 of which, namely 2YIF, 2YIF*, Immediacy, IFI, C3PO and PI-BETA, are based on ratios, the rankings of the 34 leading journals in Finance given in Table 5 are based on the harmonic mean, which is given in the last column as Harmonic Mean.

In comparison with the rankings in Table 2 that are based on Expert Score, only the first 2 journals, namely Journal of Finance and Review of Financial Studies, remain unchanged in Table 5, while many journals have had substantial shifts in rankings. Of the 18 journals to have moved up or down by at least 5 positions on the basis of Harmonic Mean compared with Expert Score, one journal improved 22 positions while 2 journals dropped by 11 places.

The 8 journals to have improved their ranking significantly include International Finance (22 places, from 31 to 9), International Journal of Finance & Economics (13 places, from 34 to 21), Financial Analysts Journal (11 places, from 15 to 4), Journal of Financial Services Research (9 places, from 22 to 13), Journal of Derivatives (8 places, from 16 to 8), Finance and Stochastics (6 places, from 20 to 14), International Review of Economics & Finance (6 places, from 32 to 26), and Journal of Risk (5 places, from 27 to 22).

The 10 journals to have fallen significantly are Financial Management (11 places, from 8 to 19), Journal of Empirical Finance (11 places, 13 to 24), Journal of Portfolio Management (9 places, from 19 to 28), Journal of Financial Markets (8 places, from 10 to 18), Review of

Derivatives Research (8 places, from 24 to 32), Journal of Behavioral Finance (7 places, from 26 to 33), Journal of Money, Credit and Banking (6 places, from 6 to 12), European Financial Management (6 places, from 21 to 27), Journal of Business Finance & Accounting (6 places, from 23 to 29), and Journal of Financial Intermediation (5 places, from 5 to 10).

Using the Harmonic Mean, the leading journal is Journal of Finance, which is ranked first according to 4 RAMs. The number 2 journal, Review of Financial Studies, is ranked first according to 2 RAMs, the number 3 journal, Journal of Financial Economics is ranked first according to 2 RAMs, the number 4 journal, Financial Analysts Journal, is ranked first according to 3 RAMs, and the number 8 and 9 journals, Journal of Derivatives and International Finance, respectively, are each ranked first according to 2 RAMs.

The use of the harmonic mean may be seen as rewarding or penalizing widely-varying rankings across the Expert Score and 10 RAMs. Of the 34 journals reported in Table 5, 15 journals had a range of at least 20 from the highest ranking to the lowest, with 19 having a range of less than 20 from the highest to the lowest. Journal of Banking & Finance had a range of 30, International Finance had a range of 29, Journal of Risk had a range of 28, and both Financial Analysts Journal and Journal of Financial Services Research had a range of 27.

The harmonic mean tends to reward journals with strong individual performances according to one or more RAMs, so that even one very strong performance can lead to a high, or greatly improved, ranking. This is the case for Financial Analysts Journal, which was ranked number 1 according to 3 RAMs and number 28 according to one RAM, Journal of Derivatives, which was ranked number 1 according to 2 RAMs and number 29 according to one RAM, and International Finance, which was ranked number 1 according to 2 RAMs and number 31 according to one RAM.

The simple ranking correlations of the Expert Score and 10 RAMs for the 34 leading journals in Finance, based on the rankings in Table 5, are given in Table 6. The correlations in Table 6 are broadly similar (in absolute value) to the correlations in Table 4 for the RAM scores. The 3 highest correlations for Expert Score are with 2YIF*, 2YIF and Eigenfactor at 0.814, 0.806 and 0.798, respectively. The 4 RAM pairs for which the correlations exceed 0.9 (in absolute value) are, in decreasing order: (IFI, 2Y-STAR), (h-index, C3PO), (2YIF, 2YIF*), and (C3PO, PI-BETA). There are also 10 RAM pairs for which the simple correlations are in the

range (0.8, 0.9), in absolute value. The correlation of 0.997 for the pair (IFI, 2Y-STAR) suggests that the rankings according to IFI and 2Y-STAR would be virtually identical.

In Table 6, the three highest correlations with the Harmonic Mean are 0.834, 0.765 and 0.739 for 2YIF*, 2YIF and Expert Score, respectively, which suggests that the classic two-year impact factor, whether with or without journal self citations, is not highly correlated with the Harmonic Mean. A similar comment applies to the Harmonic Mean and Expert Score. Thus, 2YIF would not seem to be the most appropriate individual RAM to use if it were intended to capture the broad-based Harmonic Mean. Indeed, using 2YIF as a single RAM to capture the quality of a journal would lead to a distorted evaluation of a journal's impact and influence. A similar comment would apply to the use of Expert Score as a single measure to evaluate the quality of a journal.

As the preceding analysis suggests that no single measure, whether Expert Score or one of several RAMs, captures adequately the quality, impact and influence of a journal, we propose to estimate a regression model relating Expert Score and variables that capture key elements of the following RAMs:

(i) impact factor and mean citations (2YIF, 2YIF*, 5YIF, Immediacy, C3PO);
(ii) journal policy (IFI, H-STAR, 2Y-STAR);
(iii) number of high quality papers (h-index);
(iv) quantitative information about a journal (Eigenfactor, Article Influence, CAI).

A regression model with more than one explanatory variable permits conditioning on the remaining variables, so that the correlation signs and magnitudes reported in Tables 3, 4 and 6 are likely to change. As the variables in the "impact factor and mean citations" are highly correlated with each other, 2YIF is chosen to be representative of this set. A similar comment holds for the variables in "journal policy", so that IFI is chosen to be representative of this set. There is only one variable, h-index, in "number of high quality papers". As 5YIF, Article Influence and CAI are not available for the 34 leading journals in Finance, the variables in "quantitative information about a journal" reduces to Eigenfactor alone.

Therefore, a parsimonious representation of the relationship between Expert Score, which is the primary variable of interest, and the explanatory variables given by the representative set, (2YIF, IFI, h-index, Eigenfactor), is given as Expert Score = f(2YIF, IFI, h-index, Eigenfactor). The ordinary least squares estimates of the linearized function are given as follows (White's heteroskedasticity-robust standard errors are in parentheses):

$$\text{Expert Score} = \underset{(0.256)}{3.039} + \underset{(0.170)}{1.329}(\text{2YIF}) - \underset{(0.131)}{0.453}(\text{IFI}) + \underset{(0.005)}{0.028}(\text{h-index}) - \underset{(19.403)}{95.358}(\text{Eigenfactor})$$

($R^2 = 0.843$). The estimated coefficients are all significant at the 1% level. The signs of the estimated coefficients of 2YIF, IFI and h-index are as expected, and are consistent with the simple correlations in Tables 3 and 4, which are not conditioned on any variables. Thus, the interpretation of the sign of the effects of 2YIF, IFI and h-index on expert score are unaffected by the inclusion or exclusion of other variables in the model.

However, the interpretation of the sign of Eigenfactor does depend on the inclusion or exclusion of 2YIF, IFI and h-index. The higher is Eigenfactor, independently of the other variables, the higher is the expert score, as given in Tables 3 and 4. However, if the conditioning set includes 2YIF, IFI and h-index, then information is already available about a journal's impact factor and mean citations, journal policy, and the number of high quality papers in the journal. When such information is already available about a journal's quality, impact and influence, the higher is Eigenfactor (that is, the amount of time spent scrolling through a journal's webpage, presumably to learn more about a journal), the lower is expert score. In short, when much is known about a journal, spending more time its webpage is not only a waste of time, but is also impacting negatively on expert score.

4. Concluding Remarks

The paper evaluated the ranking of academic journal quality and research impact using a survey of experts from a national project on ranking academic finance journals. A comparison was made with the Thomson Reuters ISI Web of Science citations database (hereafter ISI) for the Business - Finance category. The paper provided a quantitative analysis

of the leading international journals in Finance using expert scores and quantifiable Research Assessment Measures (RAMs).

This paper analysed the leading 34 journals in the ISI category of Finance using expert scores from a survey of experts and 13 quantifiable Research Assessment Measures (RAMs). Alternative RAMs were discussed for the Thomson Reuters ISI Web of Science (2011) database (hereafter ISI). The 13 RAMs that may be calculated annually or updated daily are intended to answer the questions as to When, and Where and How (frequently), published papers are cited. The answers to When published papers are cited are based on the set {2YIF, 2YIF*, 5YIF, Immediacy}, and the answers to Where and How (frequently) published papers are cited are based on the set {Eigenfactor, Article Influence, Cited Article Influence, IFI, H-STAR, 2Y-STAR, C3PO, h-index, PI-BETA}. As compared with alternative RAMs, expert scores are intended to rank journal quality using a single metric.

The paper highlighted the similarities and differences in expert scores and alternative RAMs, and showed that several RAMs were highly correlated with existing RAMs, so that they had little informative incremental value in capturing the impact and performance of the highly-cited journals. Other RAMs were not highly correlated, thereby providing additional information about journal impact and influence. Harmonic mean rankings of Expert Score and 10 RAMs were also presented for these 34 leading journals in Finance. When the journals were ranked according to the Harmonic Mean, the simple correlations between (2YIF, Harmonic Mean) and (Expert Score, Harmonic Mean) were found to be 0.765 and 0.739, respectively. Therefore, using expert score or 2YIF as a single RAM to capture the quality of a journal would lead to a distorted evaluation of a journal's impact and influence. The harmonic mean rankings provide a more robust measure of citations and impact than relying solely on expert score or the 2-year impact factor of a journal.

A simple regression model was also used to estimate expert scores on the basis of RAMs that capture journal impact, journal policy, the number of high quality papers, and quantitative information about a journal. It was shown that when much is known about a journal's quality, impact and influence through its impact factor and mean citations, journal policy, and the number of high quality papers its has published, spending more time a journal's webpage is not only a waste of time, but also has a negative impact on the expert score of a journal.

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Table 1
Mean Expert Scores and Rankings of 60 Leading Finance Journals
from 1 (Low) to 7 (High)

Journal	Rank 1	Rank 1 mean score	Rank 2	Rank 2 mean score
Journal of Finance	1	6.98	1	6.98
Journal of Financial Economics	2.5	6.84	2.5	6.84
Review of Financial Studies	2.5	6.84	2.5	6.84
Journal of Financial & Quantitative Analysis	4	6.10	4	6.10
Journal of Financial Intermediation	5	5.04	5	5.21
Journal of Money, Credit and Banking	6	4.88	6	5.10
Financial Management	7	4.77	8	4.88
Journal of Banking & Finance	8	4.76	9	4.87
Journal of Corporate Finance	9.5	4.62	11	4.78
Review of Finance	9.5	4.62	7	4.89
Journal of Financial Markets	11	4.54	10	4.80
Journal of Empirical Finance	12	4.34	13	4.49
Mathematical Finance	13	4.06	12	4.61
Financial Analysts Journal	14	4.00	15	4.04
Journal of Portfolio Management	15	3.73	19	3.86
Journal of Futures Markets	16	3.57	17	3.91
Journal of International Money and Finance	17	3.56	14	4.24
Journal of Fixed Income*	18	3.49	20	3.82
Journal of Applied Corporate Finance*	19.5	3.39	21.5	3.71
Journal of Financial Research*	19.5	3.39	21.5	3.71
Journal of Derivatives	21	3.37	16	3.91
Pacific Basin Finance Journal*	22	3.32	24	3.59
European Financial Management	23	3.17	25	3.55
Journal of Financial Services Research	24	3.13	26	3.51
Financial Review*	25	2.85	27	3.44
Journal of Business, Finance & Accounting	26	2.69	28	3.38
Journal of Financial Econometrics	27	2.59	18	3.89
Finance and Stochastics	28	2.34	23	3.63
Review of Quantitative Finance and Accounting*	29	2.28	34	3.07
Finance Research Letters	30	2.13	37	2.96
Journal of Accounting, Auditing and Finance*	31	2.11	29	3.21
Quantitative Finance	32	2.06	32	3.15

Table 1 (cont.)

Journal	Rank 1	Rank 1 mean score	Rank 2	Rank 2 mean score
Financial Markets, Institution and Instruments*	33	2.05	38	2.94
Review of Derivatives Research	34	2.04	31	3.17
Review of Futures Markets*	35	2.02	41	2.81
Journal of Behavioral Finance	36	1.90	33	3.11
Journal of International Financial Markets, Institution and Money*	37	1.89	35	2.98
Journal of Computational Finance*	38	1.86	30	3.20
Journal of Risk	39	1.83	36	2.98
Quarterly Review of Economics & Finance*	40	1.75	42	2.72
European Journal of Finance	41	1.74	39	2.89
International Review of Finance*	42	1.65	43	2.64
Journal of Economics and Finance*	43	1.49	44	2.53
Journal of Multinational Financial Management*	44	1.44	48	2.39
Global Finance Journal*	45	1.43	53	2.29
Applied Mathematical Finance*	46	1.42	40	2.81
Managerial Finance*	47	1.39	55	2.26
Journal of Investing*	48	1.38	49	2.37
International Review of Economics and Finance	49	1.37	47	2.40
Accounting and Finance	50.5	1.34	45	2.50
Review of Financial Economics*	50.5	1.34	50	2.36
Applied Financial Economics*	52	1.29	54	2.26
International Finance	53	1.28	46	2.43
Journal of Emerging Market Finance*	54.5	1.25	57	2.23
Multinational Finance Journal*	54.5	1.25	51	2.32
Asia-Pacific Journal of Financial Studies	56	1.20	56	2.24
International Review of Financial Analysis*	57	1.17	52	2.32
International Journal of Finance and Economics	58	1.08	58	2.17
Review of Pacific Basin Financial Markets and Policy*	59	0.98	59	1.98
International Journal of Finance*	60	0.88	60	1.95

Notes: The data in Table 1 were kindly provided by Shing-yang Hu (National Taiwan University). * denotes the journal is not included in Thomson Reuters ISI Web of Science. The Mean score is based on 93 experts ("distinguished scholars"), who ranked each of the 60 leading journals from 1 (Low) to 7 (High). Journals are ranked according to Rank 1, which counts "Not familiar" responses as 0, so that the minimum mean score can be below 1. Rank 2 excludes "Not familiar" responses, so that the range is between 1 and 7. The correlation coefficient between Rank 1 and Rank 2 is 0.979, and the correlation coefficient between the Rank 1 mean score and Rank 2 mean score is 0.987.

Table 2
Mean Expert Scores and Research Assessment Measures (RAM) for 34 Leading Finance Journals

Rank	Journal	Expert Score	2YIF	2YIF*	IFI	5YIF	Immediacy	h-index	C3PO	PI-BETA	Eigenfactor	Article Influence	CAI	H-STAR	2Y-STAR
1	Journal of Finance	6.98	4.151	3.868	1.073	6.529	0.797	170	23.65	0.439	0.06034	7.477	4.195	94	88
2	Journal of Financial Economics	6.84	3.81	3.413	1.116	5.631	0.57	156	62.02	0.091	0.05263	5.923	5.384	90	80
2	Review of Financial Studies	6.84	4.602	3.982	1.156	5.016	0.681	85	27.16	0.134	0.04674	6.583	5.701	84	74
4	Journal of Financial and Quantitative Analysis	6.10	1.593	1.538	1.037	2.122	0.246	66	12.21	0.231	0.00911	2.291	1.762	94	94
5	Journal of Financial Intermediation	5.21	1.2	1.06	1.132	1.67	0.32	30	10.09	0.258	0.00381	1.752	1.3	94	78
6	Journal of Money, Credit and Banking	5.10	1.15	1.03	1.117	1.856	0.129	63	9.7	0.306	0.01388	1.75	1.215	90	80
7	Review of Finance	4.89	1.952	1.881	1.038	-	0.304	8	2.38	0.505	0.00479	-	-	96	94
8	Financial Management	4.88	1.297	0.562	2.308	1.644	0.167	38	6.6	0.253	0.00212	0.828	0.619	62	-12
9	Journal of Banking & Finance	4.87	2.731	0.748	3.651	2.528	0.672	59	8.46	0.214	0.01416	0.8	0.629	36	-44
10	Journal of Financial Markets	4.80	1.102	0.98	1.124	1.347	0.3	15	7.08	0.235	0.00239	1.258	0.962	88	78
11	Journal of Corporate Finance	4.78	1.523	1.198	1.271	2.199	0.277	28	7.95	0.208	0.00546	1.333	1.056	76	58
12	Mathematical Finance	4.61	1.052	0.879	1.197	1.801	0.393	36	15.19	0.182	0.00536	1.892	1.548	88	68
13	Journal of Empirical Finance	4.49	0.807	0.716	1.127	-	0.067	6	1.17	0.536	0.00316	-	-	86	78
14	Journal of International Money and Finance	4.24	0.836	0.719	1.163	1.462	0.135	51	9.92	0.207	0.00625	0.953	0.756	82	74
15	Financial Analysts Journal	4.04	0.552	0.552	1	0.884	0.031	21	2.52	0.59	0.00269	0.733	0.301	100	100
16	Journal of Derivatives	3.91	0.564	0.564	1	-	0	5	0.99	0.598	0.00101	-	-	92	100
16	Journal of Futures Markets	3.91	0.467	0.308	1.516	0.678	0.2	32	5.69	0.236	0.00146	0.295	0.225	64	32
18	Journal of Financial Econometrics	3.89	0.846	0.769	1.1	-	0.095	6	1.86	0.518	0.00431	-	-	94	82

Table 2 (cont.)

Rank	Journal	Expert Score	2YIF	2YIF*	IFI	5YIF	Immediacy	h-index	C3PO	PI-BETA	Eigenfactor	Article Influence	CAI	H-STAR	2Y-STAR
19	Journal of Portfolio Management	3.86	0.416	0.267	1.558	0.451	0.114	30	3.12	0.449	0.00118	0.228	0.126	82	30
20	Finance and Stochastics	3.63	1.326	1.065	1.245	1.87	0.217	23	8.83	0.174	0.00512	2.016	1.665	88	62
21	European Financial Management	3.55	0.685	0.534	1.283	1.278	0.088	12	3.15	0.339	0.00229	0.73	0.483	62	56
22	Journal of Financial Services Research	3.51	0.762	0.738	1.033	-	0	22	4.84	0.359	0.00099	-	-	96	94
23	Journal of Business Finance & Accounting	3.38	0.549	0.324	1.694	1.04	0.096	14	2.82	0.341	0.00255	0.443	0.292	66	18
24	Review of Derivatives Research	3.17	0.389	0.333	1.168	-	0.083	2	0.29	0.756	0.00062	-	-	80	72
25	Quantitative Finance	3.15	0.59	0.525	1.124	0.968	0.163	20	3.22	0.457	0.00372	0.687	0.373	84	80
26	Journal of Behavioral Finance	3.11	0.262	0.214	1.224	-	0	2	0.35	0.792	0.00038	-	-	42	64
27	Journal of Risk	2.98	0.5	0.382	1.309	1.794	0	3	0.46	0.694	0.00068	1.029	0.315	94	54
28	Finance Research Letters	2.96	0.314	0.255	1.231	-	0	3	0.48	0.75	0.00123	-	-	90	64
29	European Journal of Finance	2.89	0.488	0.463	1.054	-	0	3	0.57	0.711	0.00113	-	-	92	90
30	Accounting and Finance	2.50	0.432	0.358	1.207	-	0.095	5	0.81	0.602	0.00041	-	-	62	66
31	International Finance	2.43	0.462	0.462	1	-	0.048	5	0.89	0.674	0.00067	-	-	90	100
32	International Review of Economics & Finance	2.40	0.809	0.373	2.169	-	0.317	5	0.95	0.554	0.00166	-	-	26	-6
33	Asia-Pacific Journal of Financial Studies	2.24	0.41	0.098	4.184	-	0.033	4	0.61	0.615	0.00009	-	-	-40	-52
34	International Journal of Finance & Economics	2.17	0.569	0.51	1.116	0.692	0.08	17	3.72	0.372	0.00155	0.492	0.309	92	80
	Mean	**4.07**	**1.153**	**0.931**	**1.404**	**2.07**	**0.198**	**31**	**7.35**	**0.423**	**0.0078**	**1.881**	**1.391**	**77**	**61**

Notes: Only those journals in Thomson Reuters ISI Web of Science are included. Journals are ranked according to Expert Score, namely Rank 2 from Table 1. The RAM data for all journals from 1945 onward were downloaded from ISI on 28 November 2011.

Table 3
Correlations of Expert Score and 13 RAM for 21 Leading Finance Journals

	Expert Score	2YIF	2YIF*	IFI	5YIF	Immediacy	h-index	C3PO	PI-BETA	Eigenfactor	Article Influence	CAI	H-STAR	2Y-STAR
Expert Score	1													
2YIF	0.846	1												
2YIF*	0.847	0.942	1											
IFI	-0.049	0.089	-0.242	1										
5YIF	0.826	0.951	0.956	-0.073	1									
Immediacy	0.789	0.915	0.810	0.234	0.845	1								
h-index	0.830	0.851	0.866	-0.061	0.910	0.778	1							
C3PO	0.734	0.769	0.804	-0.160	0.807	0.658	0.829	1						
PI-BETA	-0.481	-0.420	-0.348	-0.135	-0.287	-0.473	-0.307	-0.508	1					
Eigenfactor	0.800	0.935	0.959	-0.115	0.971	0.822	0.940	0.823	-0.262	1				
Article Influence	0.822	0.918	0.988	-0.265	0.965	0.795	0.876	0.792	-0.280	0.963	1			
CAI	0.825	0.920	0.975	-0.244	0.924	0.775	0.829	0.875	-0.441	0.927	0.964	1		
H-STAR	0.130	0.005	0.282	-0.856	0.155	-0.129	0.151	0.196	0.273	0.174	0.324	0.276	1	
2Y-STAR	0.244	0.150	0.394	-0.826	0.252	0.048	0.258	0.275	0.091	0.287	0.397	0.361	0.846	1

Table 4
Correlations of Expert Score and 10 RAM for 34 Leading Finance Journals

	Expert Score	2YIF	2YIF*	IFI	Immediacy	h-index	C3PO	PI-BETA	Eigenfactor	H-STAR	2Y-STAR
Expert Score	1										
2YIF	0.839	1									
2YIF*	0.839	0.948	1								
IFI	-0.177	0.013	-0.232	1							
Immediacy	0.759	0.907	0.803	0.137	1						
h-index	0.813	0.849	0.842	-0.057	0.786	1					
C3PO	0.736	0.787	0.801	-0.116	0.689	0.863	1				
PI-BETA	-0.636	-0.537	-0.463	-0.031	-0.591	-0.544	-0.593	1			
Eigenfactor	0.771	0.925	0.937	-0.093	0.808	0.930	0.842	-0.397	1		
H-STAR	0.336	0.129	0.312	-0.838	-0.018	0.182	0.193	-0.109	0.171	1	
2Y-STAR	0.215	0.083	0.310	-0.818	-0.096	0.110	0.140	0.117	0.165	0.805	1

Table 5
Expert Score, 10 RAM and Harmonic Mean Rankings for 34 Leading Finance Journals

Journal	Expert Score	2YIF	2YIF*	IFI	Immediacy	h-index	C3PO	PI-BETA	Eigenfactor	H-STAR	2Y-STAR	Harmonic Mean
Journal of Finance	1	2	2	8	1	1	3	18	1	4	8	1
Review of Financial Studies	2	1	1	17	2	3	2	2	3	20	17	2
Journal of Financial Economics	2	3	3	10	4	2	1	1	2	12	10	3
Financial Analysts Journal	15	23	19	1	28	16	21	25	16	1	1	4
Journal of Financial and Quantitative Analysis	4	6	5	5	11	4	5	8	6	4	4	5
Review of Finance	7	5	4	6	8	22	22	21	11	2	4	6
Journal of Banking & Finance	9	4	13	33	3	6	10	7	4	32	33	7
Journal of Derivatives	16	22	17	1	29	25	25	26	27	9	1	8
International Finance	31	28	24	1	26	25	27	29	30	12	1	9
Journal of Financial Intermediation	5	10	8	16	6	11	6	12	13	4	14	10
Mathematical Finance	12	13	11	20	5	9	4	4	9	16	20	11
Journal of Money, Credit and Banking	6	11	9	12	17	5	8	13	5	12	10	12
Journal of Financial Services Research	22	18	14	4	29	15	15	16	28	2	4	13
Finance and Stochastics	20	8	7	24	12	14	9	3	10	16	24	14
Journal of Corporate Finance	11	7	6	25	10	13	11	6	8	25	25	15
Journal of International Money and Finance	14	15	15	18	16	7	7	5	7	22	17	16
Journal of Financial Econometrics	18	14	12	9	20	23	23	22	12	4	9	17

Table 5 (cont.)

Journal	Expert Score	2YIF	2YIF*	IFI	Immediacy	h-index	C3PO	PI-BETA	Eigenfactor	H-STAR	2Y-STAR	Harmonic Mean
Journal of Financial Markets	10	12	10	13	9	19	12	9	18	16	14	18
Financial Management	8	9	18	32	14	8	13	11	20	28	32	19
Journal of Futures Markets	16	27	30	28	13	10	14	10	23	27	28	20
International Journal of Finance & Economics	34	21	22	11	24	18	16	17	22	9	10	21
Journal of Risk	27	25	25	27	29	30	32	30	29	4	27	22
Quantitative Finance	25	20	21	13	15	17	17	20	14	20	10	23
Journal of Empirical Finance	13	17	16	15	25	23	24	23	15	19	14	24
European Journal of Finance	29	26	23	7	29	30	30	31	26	9	7	25
International Review of Economics & Finance	32	16	26	31	7	25	26	24	21	33	31	26
European Financial Management	21	19	20	26	22	21	18	14	19	28	26	27
Journal of Portfolio Management	19	30	31	29	18	11	19	19	25	22	29	28
Journal of Business Finance & Accounting	23	24	29	30	19	20	20	15	17	26	30	29
Finance Research Letters	28	33	32	23	29	30	31	32	24	12	22	30
Accounting and Finance	30	29	27	21	20	25	28	27	32	28	21	31
Review of Derivatives Research	24	32	28	19	23	33	34	33	31	24	19	32
Journal of Behavioral Finance	26	34	33	22	29	33	33	34	33	31	22	33
Asia-Pacific Journal of Financial Studies	33	31	34	34	27	29	29	28	34	34	34	34

Notes: The journals are ranked according to Harmonic Mean, which is calculated for Expert Score and 10 RAM. The correlation between the harmonic means based on including and excluding Expert Score is 0.988.

Table 6
Correlations of Expert Score, 10 RAM and Harmonic Mean Rankings for 34 Leading Finance Journals

	Expert Score	2YIF	2YIF*	IFI	Immediacy	h-index	C3PO	PI-BETA	Eigenfactor	H-STAR	2Y-STAR	Harmonic Mean
Expert Score	1											
2YIF	0.806	1										
2YIF*	0.814	0.933	1									
IFI	0.206	0.161	0.426	1								
Immediacy	0.690	0.800	0.664	-0.150	1							
h-index	0.780	0.752	0.678	0.060	0.727	1						
C3PO	0.775	0.815	0.774	0.097	0.772	0.950	1					
PI-BETA	0.671	0.764	0.680	-0.111	0.739	0.852	0.925	1				
Eigenfactor	0.798	0.880	0.833	0.144	0.766	0.803	0.836	0.761	1			
H-STAR	0.266	0.239	0.464	0.789	-0.094	0.120	0.155	-0.046	0.217	1		
2Y-STAR	0.211	0.168	0.430	0.997	-0.141	0.069	0.104	-0.109	0.162	0.793	1	
Harmonic Mean	0.739	0.765	0.834	0.558	0.532	0.692	0.695	0.544	0.703	0.570	0.553	1