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"What Makes a Great Journal Great in Economics?
The Singer Not the Song"

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What Makes a Great Journal Great in Economics?*

The Singer Not the Song

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Abstract

The paper is concerned with analysing what makes a great journal great in economics, based on quantifiable measures. Alternative Research Assessment Measures (RAM) are discussed, with an emphasis on the Thomson Reuters ISI Web of Science database (hereafter ISI). The various ISI RAM that are calculated annually or updated daily are defined and analysed, including the classic 2-year impact factor (2YIF), 5-year impact factor (5YIF), Immediacy (or zero-year impact factor (0YIF)), Eigenfactor score, Article Influence, C3PO (Citation Performance Per Paper Online), h-index, Zinfluence, PI-BETA (Papers Ignored - By Even The Authors), and two new RAM measure, the Self-citation Threshold Approval Rating (STAR) score and the Impact Factor Inflation (IFI) score. The ISI RAM data are analysed for the most highly cited journals in the ISI categories of Economics, Management, Business, and Business - Finance. The journals are chosen on the basis of 2YIF (including self citations by both author and journal). The application to these four ISI categories could be used as a template for other ISI categories in both the Social Sciences and the Sciences, and as a benchmark for newer journals in a range of ISI disciplines. In addition to evaluating high quality research in the most highly cited Economics journals, the paper also compares the most highly cited journals in Management, Business, and Business - Finance, alternative RAM, highlights the similarities and differences in alternative RAM criteria, finds that several ISI RAM capture similar performance characteristics for the most highly cited Economics, Management, Business and Business - Finance journals, determines that the Immediacy and PI-BETA scores are not highly correlated with the other ISI RAM, and hence conveys additional information regarding ISI RAM criteria. Harmonic mean rankings of the 12 RAM criteria for the most highly cited journals in the four categories are also presented. It was shown that emphasizing THE impact factor, specifically the 2-year impact factor, of a journal to the exclusion of other useful and illuminating RAM criteria, can lead to a distorted evaluation of journal performance and influence on the profession.

Keywords: Research assessment measures, impact factors, Immediacy, Eigenfactor, Article Influence, h-index, C3PO, Zinfluence, PI-BETA, STAR, IFI.

JEL Classifications: C43, C10, Z0.

Publish a paper in a great journal,
the journal makes you great;
Publish a great paper in a journal,
you make the journal great.

1. Introduction

The possibly unanswerable question as to whether the singer or the song (that is, the composer and lyricist) has greater prominence in the success of a song also applies to whether the quality of an academic paper is more important than the quality of the journal in which it is published. Alternatively, does the quality of a journal define the quality of a paper? As noted in Chang et al. (2010): "Great papers appear in great journals [and] All great journals publish great papers [but] Not all papers in great journals are great."

The production, evaluation and dissemination of high quality research are fundamental to all disciplines in the sciences and social sciences. Research assessment rankings are essential to evaluate the research performance of individuals, the quality of academic journals, and the allocation of resources to scientific research (see, for example, Oswald (2007), who analyses journal rankings to measure research quality for purposes of the allocation of funding for research). The research performance of individuals can be crucial for hiring, firing, tenure and promotion decisions, as well as receipt of research funding. In the absence of suitable information, the quality of a journal has frequently been used as a proxy for the research quality of an academic paper.

It is arguable that the use of the perceived quality of a journal as a proxy for the quality of a paper is inappropriate. The undeniable quality of a great journal is based on many great papers that have been published in the past. However, a great journal is not an accurate reflection of the quality of a recently published paper, or of a paper that is yet to appear in the journal, especially when the paper has received few if any citations to date.

Moreover, the acceptance of a paper for publication in a journal is typically based on the recommendation to the Editor or Co-editor of an Associate Editor and by one, two or three referees. This small group of experts provides the rejection rate BEFORE publication. It is well known that even experts can and do make mistakes. There are two types of errors associated with editorial decisions, namely the rejection of high quality papers and the publication of low quality papers. The rejection rate of a journal AFTER publication will depend on the readership of the journal and the users of any intellectual property contained in the published article. For this reason, it is essential to know the proportion of published papers that is ignored by the profession, and by even the authors. The large market of researchers worldwide is less prone to making errors regarding the quality of academic research papers, especially over a prolonged period of time, than a small group of experts at great journals over a short period of time, namely during the editorial decision making process.

In terms of evaluating the research performance of individual researchers and journals, some Research Assessment Measures (RAM) are subscription based, while others can be downloaded free of charge from the Internet. A leading high quality database for generating RAM is the Thomson Reuters ISI Web of Science database (hereafter ISI). This paper examines the importance of ranking RAM, emphasizes the importance of RAM as viable rankings criteria, highlights the usefulness of existing RAM from Thomson Reuters ISI (hereafter ISI RAM), and evaluates the usefulness of a new RAM criterion.

The empirical analysis of ISI RAM presented in this paper concentrates on the 40 most highly cited journals in the ISI Economics category, which are compared with the 12 most highly cited journals in the ISI categories of Business - Finance, Management, and Business (see Garfield (1972) for the development of citation analysis as a tool in evaluating journals). The application to these four ISI categories could be used as a template for other ISI categories in both the Social Sciences and the Sciences, and as a benchmark for newer journals in a range of ISI disciplines. In addition to evaluating the great journals in Economics and three cognate disciplines, the paper also develops a new RAM to highlight journal self citations, compares alternative RAM, and highlights the similarities and differences of alternative RAM criteria. It is shown that emphasizing THE impact factor, specifically the 2-year

impact factor, of a journal to the exclusion of other useful and illuminating RAM criteria, can lead to a distorted evaluation of journal performance and influence on the profession.

The plan of the remainder of the paper is as follows. Section 2 discusses alternative RAM, with an emphasis on the Thomson Reuters ISI Web of Science database. Various ISI RAM that are calculated annually or updated daily are defined and analysed, including the 2-year impact factor (2YIF), both with and without self citations, 5-year impact factor (5YIF), Immediacy (or zero-year impact factor (0YIF)), Eigenfactor score, Article Influence, C3PO (Citation Performance Per Paper Online), h-index, Zinfluence, PI-BETA (Papers Ignored - By Even The Authors), the Self-citation Approval Rating (STAR) scores, both historical and 2-year, and the Impact Factor Inflation (IFI) score. Section 3 discusses and analyses the ISI RAM data for the 40 most highly cited journals in Economics, and the 12 most highly cited journals in each of Business - Finance, Management and Business. Harmonic mean rankings of the 12 RAM criteria for the most highly cited journals in the four categories are also presented. Section 4 summarizes the outcomes and discusses some future uses of ISI RAM.

2. Research Assessment Measures (RAM)

Several Research Assessment Measures (RAM) criteria are available for recording research performance. Some of these measures are subscription based, while others are downloadable free from the Internet. Alternative sources of RAM are discussed below.

2.1 Thomson Reuters ISI Web of Science

The Thomson Reuters ISI Web of Science database is available to subscribers. Although books and non-ISI journals are not included in the database, a wide range of leading journals is included in the ISI database for an extended period. According to ISI Web of Science (2010): "Authoritative, multidisciplinary content covers over 10,000 of the highest impact journals worldwide, including Open Access journals and

over 110,000 conference proceedings." For the 2008 Journal Citations Report year, with the ISI RAM being reported in 2009, there were 209 journals in the Economics category. The explanations given online are typically very helpful, and the broad range of performance criteria may readily be modified to measure research productivity and citations impact of academic researchers and ISI recognised journals. In short, ISI is credible, widely used and accessible.

Alternative excellent databases include the Social Science Research Network (SSRN) database, which includes a very large number of working papers and publications in the social sciences (including economics, finance, accounting, marketing and management, among others), the Research Papers in Economics (RePEc) database for economics (which purportedly excludes self citations by both individual researchers and journals in compiling all the RAM statistics), the Scopus subscription-based database, and free Internet databases, such as Google Scholar. Each of these databases has their strengths and limitations, but ISI would seem to establish the 'gold standard' database for purposes of generating RAM for journals and individual researchers in a wide range of disciplines in the Social Sciences and Sciences for an extended period.

2.2 Definitions of ISI RAM

2.2.1 Annual ISI RAM

With two exceptions, namely the Eigenfactor and Article Influence scores, ISI RAM is reported separately for sciences and social sciences, and may be computed annually or updated daily. ISI RAM is reported for ISI journals, where an ISI journal is a journal recognized by ISI and for which ISI RAM is reported.

Annual ISI RAM is calculated for a Journal Citations Reports (JCR) calendar year, which is the year BEFORE the annual ISI RAM is released (usually in mid-year). Thus, for the JCR year 2008, the annual ISI RAM was released in mid-2009.

The ISI RAM are given as follows:

(1) 2-year impact factor (2YIF):

The classic 2-year impact factor (2YIF) of an ISI journal is typically referred to as "THE impact factor", and is calculated annually. It should be emphasized that impact factors evaluate journals, and hence are journal impact factors, and are not intended to evaluate papers published in journals, where other RAM criteria are available. For a JCR year, the 2YIF of an ISI journal is defined as" Total citations in a JCR year to papers published in an ISI journal in the previous 2 years/Total papers published in an ISI journal in the previous 2 years". Thus, for the JCR year 2008, total citations are for papers published in years 2006 and 2007, as are the total papers published in an ISI journal.

(2) 2-year impact factor without self citations (2YIF*):

ISI also reports a 2-year impact factor that excludes journal self citations (that is, citations to a journal in which a citing paper is published). We refer to this ISI RAM measure as 2YIF*. Needless to say, 2YIF > 2YIF*.

(3) 5-year impact factor (5YIF):

The 5-year impact factor (5YIF) of an ISI journal is calculated annually. For a JCR year, the 5YIF of an ISI journal is defined as "Total citations in a JCR year to papers published in an ISI journal in the previous 5 years/Total papers published in an ISI journal in the previous 5 years." Thus, for the JCR year 2008, total citations are for papers published in years 2003, 2004, 2005, 2006 and 2007, as are the total papers published in an ISI journal.

(4) Immediacy:

Immediacy is a zero-year impact factor (0YIF) of an ISI journal, and is calculated annually. For a JCR year, Immediacy of an ISI journal is defined as "Total citations to papers published in an ISI journal in a JCR year/Total papers published in an ISI journal in a JCR year." Thus, for the JCR year 2008, total citations are for papers published in year 2008, as are the total papers published in an ISI journal.

(5) Eigenfactor score:

The Eigenfactor score (Bergstrom (2007), Bergstrom, West and Wiseman (2008)) is a modified 5YIF, and is calculated annually. For a JCR year, the Eigenfactor score of an ISI journal is defined as "a modified 5YIF, which aggregates citations to ISI

journals in both the sciences and social sciences, eliminates journal self-citations, and "weights each reference according to a stochastic measure of the amount of time researchers spend reading the journal". The Eigenfactor algorithm (see www.eigenfactor.org/methods.htm), in effect, ranks journals according to the amount of time researchers are logged on to a journal's website. To state the obvious, the Eigenfactor is not able to check how much time researchers spend reading hard copies of journals. Moreover, the Eigenfactor score is likely to be much lower for journals that have a smaller number of longer papers, where they are likely to be downloaded and read in hard copy form, as compared with journals that have a larger number of shorter papers, where skimming the articles may be closer to reading a newspaper or magazine.

(6) Article Influence:

The Article Influence score measures the relative importance of an ISI journal on a per-article basis, and is a standardized Eigenfactor score. Like the Eigenfactor score, Article Influence is calculated annually. For a JCR year, Article Influence of an ISI journal is defined as "Eigenfactor score divided by the fraction of all ISI articles published by the ISI journal."

2.2.2 Two New RAM (annual updates)

(7) IFI:

It would be useful to emphasize the citations outside the control of any given journal as editorial policy of one journal typically does not affect the citations in other journals. The ratio of 2YIF to 2YIF* will indicate how journal self citations inflate the impact factor of a journal. For a JCR year, the Impact Factor Inflation (IFI) score is defined as:

Definition: IFI score = 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. Given 5YIF and Immediacy without journal self citations, the IFI score can also be calculated for these two ISI RAM criteria.

(8) 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. Using the ISI journal self citation data, we suggest a new RAM, namely the **Self-citation Threshold Approval Rating (STAR)** score, which is the difference between citations in other journals and journal self citations. If S = journal self citations (in per cent), the STAR score is defined as:

Definition: STAR score = [(100-S) - S] = (100-2S).

If S = 0 (outstanding), 25, 50 or 100 (unthinkable), for example, STAR = 100, 50, 0 and -100, respectively. Although a high STAR score would be desirable, a STAR score of 50 might be regarded as a passing grade, whereas a negative STAR score would seem to be worth avoiding. For a JCR year, the STAR score is based on journal self citations, both historically and for the preceding two years. An historical STAR score is H-STAR, and a 2-year STAR is 2Y-STAR.

2.2.3 Daily Updated ISI RAM

Other ISI RAM can be updated daily, and are reported for a given day in the current year rather than the JCR year.

(9) C3PO:

ISI reports the mean number of citations for an ISI journal, namely total citations up to a given day divided by the number of papers published in an ISI 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, McAleer and Oxley (2010) as "C3PO (Citation Performance Per Paper Online) = Total citations to an ISI journal in ISI/Total papers published in an ISI journal." Thus, C3PO for 28 April 2010 is based on total citations and total papers up to and including 3 June 2010. [Note: C3PO should not be confused with C-3PO, the Star Wars android.]

(10) h-index:

The h-index (Hirsch, 2005)) was proposed to assess the scientific research productivity and citations impact of individual researchers. Although the h-index can also be calculated for journals, it should be interpreted as assessing the impact or influence of highly cited publications in ISI journals. The h-index of an ISI journal on any given day is based on cited and citing papers, including self citations of ISI journals, and is defined as "h-index = each of h papers in an ISI journal has been cited at least h times in ISI journals." Thus, the h-index for 28 April 2010 is based on total citations and total papers up to and including 3 June 2010.

(11) PI-BETA:

A recently suggested ISI RAM measures the number of papers in a journal that has never been cited, which is, in effect, a rejection rate AFTER journal publication. Chang, McAleer and Oxley (2010) argue that lack of citations of a published paper, especially over an extended period, detracts from the quality of a journal by exposing: (i) what might be considered as incorrect decisions by the editorial board of a journal; and (ii) the lost opportunities of papers that might have been cited had they not been rejected in favour of papers that are ignored by the profession. For this reason, Chang et al. (2010) define a paper with Zinfluence as "zero influence, based on zero citations in ISI journals." Zinfluence can be measured by the PI-BETA (= Papers Ignored (PI) - By Even The Authors (BETA)) ratio, and is calculated for an ISI journal on any given day as "Number of Zinfluence papers in an ISI journal/Total papers published in an ISI journal." Thus, PI-BETA for 4 June 2010 is based on Zinfluence and total papers up to and including 4 June 2010.

2.3 Caveats regarding ISI RAM

Although ISI RAM can be very useful and informative, it is worth emphasizing that it is not entirely free of measurement error. The following caveats should be considered in using ISI RAM. The inclusion of all articles in an ISI journal includes papers, abstracts and book reviews, and possibly even conference reviews, software reports, and letters to the editor.

It is also important to note that correct ISI citations can be affected by misspellings of the titles of journals and names of authors; incorrect use of author's initials; and incorrect year of publication, volume number, and/or the starting page number of the ISI journal article. Only those citations that are correct in every respect will be attributed correctly to the cited author. Otherwise, any error will lead to a different citation, such that the total citations of a publication for a particular author will be too low. We hasten to add that any such missing in action (MIA) citations is the responsibility of the citing author(s), and not of ISI. For obvious reasons, it is virtually impossible to check for spelling variations on the names of any authors.

Further caveats relate to the date of downloading ISI RAM, as daily updates will change the h-index, C3PO, PI-BETA and STAR scores. The time period for downloading ISI RAM should also be noted as all the ISI RAM will change annually. The period 1988-2010 is the default option. For journals such as Nature and Science, as well as several journals in the medical sciences, which have a high frequency of publication and publish a large number of articles, the default option for daily ISI RAM updates would seem to vary between two and four years at most. Otherwise, the threshold of 10,000 articles for purposes of obtaining daily ISI RAM updates will be exceeded.

3. Analysis of ISI RAM Data

The primary purpose of this section is to evaluate the most highly cited journals in the ISI categories of Economics, Management, Business, and Business - Finance. The journals are chosen on the basis of the most widely-used ISI RAM, namely the 2-year impact factor (2YIF) (including self citations by both author and journal).

Only articles from ISI Web of Science are included in the citation data. Data for all journals were downloaded from ISI on 3 June 2010 for all citations for 1988-2010, so that citations are counted from 1988 for all papers published in an ISI journal since 1988. As there is an overlap of 11 papers across the four categories, there are 65 distinct papers. Although ISI does not provide daily updates for more than 10,000

articles for purposes of calculating the h-index, C3PO, PI-BETA, H-STAR and 2Y-STAR, none of the 69 distinct journals had more than 10,000 articles.

As of the JCR 2008, the numbers of journals in these four categories are 209, 48, 89 and 77 for the Economics, Business - Finance, Management and Business categories, respectively. The 40 most highly cited journals chosen from the ISI Economics category, and the 12 most highly cited journals from each of the Business - Finance, Management and Business categories, for the ISI RAM analysis are given in Tables 1-4. Of the highly cited journals (according to 2YIF) in the Business - Finance category, 4 are also in Economics, and 7 journals in the Management category are also in Business.

Table 1 gives 12 ISI RAM data for the 40 most highly cited journals in Economics. The number of articles in these 40 journals ranges from 149 for Journal of Economic Growth to 4191 for Economic Journal, with a mean of 1394 (median of 1148) articles. The salient features of Table 1 are as follows:

(1) 2YIF ranges from (1.369, 5.048), with a mean of 2.243 (median of 1.843).
(2) The lower 2YIF* range is (0.708, 4.763), with a mean of 2.002 (median of 1.717).
(3) These two sets of RAM lead to the IFI score, which has a range of (1.000, 1.999), and mean 1.169 (median of 1.087). Thus, on average, journal self citations inflate 2YIF* to 2YIF by a factor of 1.169. Journal of Business & Economic Statistics and Journal of Law, Economics & Organization have IFI scores of 1, which involves no journal self citations, while three journals have IFI scores of 1.846, 1.925 and 1.999, which might seem a little excessive.
(4) 5YIF ranges from (1.526, 8.716), with a mean of 3.268 (median of 2.727), which is higher than for their two-year counterparts.
(5) Immediacy (or 0YIF) ranges from (0, 0.842), with a mean of 0.386 (median of 0.333), which is much smaller than for their two-year counterparts.
(6) Journal h-index ranges from (10, 149) for Journal of Common Market Studies and American Economic Review, respectively, with a mean of 61 (median of 57). Each of the first six most highly cited journals (based on 2YIF) also has an h-index that exceeds 100, indicating their influence on the profession.

(7) C3PO score of citations per published paper in an ISI journal ranges from (0.880, 65.570) for Journal of Common Market Studies and Quarterly Journal of Economics, respectively, with a mean of 17.582 (median of 12.900). Journal of Economic Literature and Economic Journal have relatively low values as each journal publishes many articles, including book reviews.
(8) PI-BETA scores are revealing in that the range is (0.055, 0.856) for Quarterly Journal of Economics and Journal of Economic Literature, respectively, with a mean of 0.262 (median of 0.212). Thus, on average, an alarming 26.2% of published articles are not cited, with one journal having 85.6% of articles not cited, and six highly cited journals with more than one-half of all articles not cited.
(9) Eigenfactor scores range from (0.0022, 0.0916), with a mean of 0.0173 (median of 0.0106).
(10) Article Influence ranges from (0.391, 11.979) for Small Business Economics and Quarterly Journal of Economics, respectively, with a mean of 3.069 (median of 2.154). Each of the first six most highly cited journals (based on 2YIF) has Article Influence scores greater than 5, with 10 journals having scores greater than 4.
(11) Historical STAR score of self citation approval is given by H-STAR, and ranges from (22, 100), with a mean of 86 (median of 89), with two journals scoring well below 50.
(12) The inflation in journal self citations has increased considerably within the two most recent JCR years, with a range for 2Y-STAR of (0, 100), and a mean of 77 (median of 85). Three journals score less than 50, with one journal having one-half of total citations being self citations.

Tables 2-4 give 12 ISI RAM data for the 12 most highly cited journals in each of Business - Finance, Management and Business, respectively. The number of articles in these 36 journals ranges from 179 for Review of Accounting Studies to 2428 for Journal of Finance.

In comparison with Economics, and bearing in mind that fewer journals have been selected in this category than in Economics, the salient features of Table 2 for Business - Finance are as follows (for purposes of brevity, the means and medians are not discussed):

(1) The 2YIF ranges from (1.422, 4.018), which is slightly lower than in Economics.
(2) The lower 2YIF* ranges (1.178, 3.485), which is also lower than in Economics.
(3) IFI score ranges from (1.050, 1.431), which is considerably smaller than in Economics. On average, journal self citations inflate 2YIF* to 2YIF by a factor of 1.185, which is similar to Economics.
(4) 5YIF ranges from (2.011, 5.863), which is unsurprisingly higher than for their two-year counterparts, and is smaller than for Economics.
(5) Immediacy (or 0YIF) ranges from (0.140, 0.609), which is much smaller than for their two-year counterparts, and is also smaller than for Economics.
(6) Journal h-index ranges from (15, 133) for Review of Accounting Studies and Journal of Finance, respectively. Only one other highly cited journal (based on 2YIF) has an h-index that exceeds 100, indicating that these two journals seem to have a very strong influence on the profession. The range is similar to Economics.
(7) C3PO score of citations per published paper in an ISI journal ranges from (4.870, 38.910) for Review of Accounting Studies and Journal of Financial Economics, respectively, and is much smaller than for Economics.
(8) PI-BETA scores are far narrower than for Economics, with a range of (0.107, 0.383) for Journal of Financial Economics and Accounting Review, respectively. Thus, on average, a high 22.8% of published articles are not cited, with one journal having 38.3% of articles not cited, though this is lower than for Economics.
(9) Eigenfactor scores range from (0.0018, 0.0584), which is smaller than for Economics.
(10) Article Influence ranges from (0.550, 6.005) for Accounting Organization and Society and Journal of Finance, respectively. Only two other highly cited journals (based on 2YIF), Journal of Financial Economics and Review of Financial Studies, have Article Influence scores greater than 4. The range is smaller than for Economics.
(11) H-STAR ranges from (46, 96), with one journal scoring below 50. The range is smaller than for Economics.
(12) The inflation in journal self citations has increased slightly within the two most recent JCR years, with a range for 2Y-STAR of (40, 90). One journal now scores less than 50, with journals in this category having 14.5% journal self citations, on average, for a mean 2Y-STAR score of 71. The range is smaller than for Economics.

With the caveat that fewer journals have been selected in the ISI Management and Business categories than in Economics, the salient features of Tables 3 and 4 in comparison with Economics are as follows (means and medians are not discussed):

(1) The 2YIF ranges from (2.575, 6.125) for Management and (2.574, 6.125) for Business, which are similar to Economics.
(2) The lower 2YIF* ranges from (2.193, 5.904) for Management, which is similar to Economics, but is wider at (1.095, 5.904) for Business.
(3) IFI score ranges from (1.037, 1.226) for Management, which is considerably smaller than in Economics. On average, journal self citations inflate 2YIF* to 2YIF by a factor of 1.126, which is slightly smaller than in Economics. Moreover, the range of IFI scores for Business is (1.037, 3.740), and journal self citations inflate 2YIF* to 2YIF by a factor of 1.460, on average. This is highlighted by Journal of Retailing, Journal of Consumer Psychology and Marketing Science having IFI scores of 3.740, 1.850 and 1.777, respectively.
(4) 5YIF ranges from (2.766, 8.211) for Business, which is slightly smaller than for Economics, and (3.187, 11.586) for Management, which is slightly larger than for Economics.
(5) Immediacy (or 0YIF) ranges from (0.121, 1.211) for Management, which is slightly greater than for Economics, but it is (0.096, 3.000) for Business, owing to Journal of Consumer Psychology having a score of 3.
(6) Journal h-index ranges from (26, 142) and (28, 142) for Management and Business, respectively, which are similar to Economics. As 4 and 5 journals have an h-index in excess of 100 for Management and Business, respectively, these journals would seem to have a very strong influence on the profession.
(7) C3PO scores of citations per published paper in an ISI journal range from (7.960, 57.810) and (6.540, 57.810) for Management and Business, respectively, both of which are smaller than in Economics. The highest mean citation in each category is for Academy of Management Journal.
(8) PI-BETA scores are narrower than for Economics, with a range of (0.065, 0.579) for both Management and Business, owing to Academy of Management Journal and Administrative Science Quarterly, respectively. Two journals in each category have PI-BETA scores greater than 0.5, such that a majority of the papers in these two journals is not cited. On average, 26.6% and 24.6% of published articles are not cited

in Business and Management, respectively, which seem to be high, but the mean PI-BETA in both categories is similar to Economics.

(9) Eigenfactor scores range from (0.0026, 0.0250) and (0.0029, 0.0250) for Business and Management, respectively, each of which is considerably smaller than for Economics.

(10) Article Influence ranges from (0.863, 4.299) and (0.953, 4.299) for Business and Management, respectively, both of which are far smaller than for Economics. Only one highly cited journal (based on 2YIF), Academy of Management Review, has an Article Influence score greater than 4.

(11) For Management, H-STAR ranges from (74, 98), which is much smaller than for Economics. However, H-STAR ranges from (0, 98) for Business, which far exceeds that of Economics.

(12) The inflation in journal self citations has increased slightly for Management within the two most recent JCR years, with a range for 2Y-STAR of (64, 94). However, the range of 2Y-STAR scores for Business has increased to (-46, 94), with one journal scoring well below zero, and two journals having scores of 10 and 14, which correspond to extreme journal self citation rates of 73%, 45% and 43%, respectively. On average, the 12 most highly cited journals in Business have 21.5% journal self citations, on average, for a mean 2Y-STAR score of 57, which dominates Economics, Business - Finance and Management. Some of these scores seem unedifying.

The correlations between pairs of alternative ISI RAM criteria have long been a source of discussion in the scientific community. For example, Fersht (2009) recently showed that there was a very strong positive correlation between Eigenfactor and the total number of journal citations. Such strong correlations are not entirely surprising, and would seem to capture the size effect of journals, with the total number of publications and total citations typically being positively correlated.

The simple correlations for the 12 ISI RAM for the 4 combined categories of 40, 12, 12, and 12 most highly cited journals in Economics, Management, Business - Finance, and Business, respectively, are given in Table 5. The pairs (2YIF, 2YIF*), (2YIF, 5YIF), (2YIF*, 5YIF), (h-index, C3PO) and (H-STAR, 2Y-STAR) are highly positively correlated, while the pairs (IFI, H-STAR) and (IFI, 2Y-STAR) are highly

negatively correlated. These results are not altogether surprising, as impact factors might be expected to be correlated for 2 and 5 years, with and without journal self citations, and similarly for the three new measures of journal self citation inflation. Moreover, journals with high mean citations might be expected to have a high h-index. It is especially worth noting that neither Immediacy (or 0YIF) nor PI-BETA is highly correlated with any of the other 10 ISI RAM scores, which suggests that these two RAM criteria contain useful additional information.

As the aggregation of the ISI RAM for the 4 categories might be masking some differences across the four ISI categories, the simple correlations are recalculated separately in Tables 6-9. Similar comments as above also apply to each of the four separate categories, with the pairs (2YIF, 2YIF*), (2YIF, 5YIF), (2YIF*, 5YIF), (h-index, C3PO) and (H-STAR, 2Y-STAR) being highly positively correlated, the pairs (IFI, H-STAR) and (IFI, 2Y-STAR) being highly negatively correlated, and neither Immediacy (or 0YIF) nor PI-BETA being highly correlated with any of the other 10 ISI RAM scores.

In Table 6, Economics also has highly positive correlations between the pairs (2YIF, Article Influence), (2YIF*, Article Influence), (5YIF, Article Influence), and (Eigenfactor, h-index). Business in Table 7 also has high positive correlations between the pairs (2YIF, C3PO), (2YIF*, C3PO), (5YIF, C3PO), (h-index, Eigenfactor), (C3PO, Eigenfactor), (Article Influence, 2YIF), (Article Influence, 2YIF*), (Article Influence, 5YIF), (Article Influence, h-index), (Article Influence, C3PO), and (Article Influence, Eigenfactor). There are no additional pairs of high correlations in Table 8 for Management, whereas Business - Finance in Table 9 has additional highly positive correlated pairs between (5YIF, h-index), (5YIF, C3PO), and (Article Influence, h-index).

As the journal self citations seem to be on an inflationary course, both the historical and 2-year self citation percentages were calculated for all 209 journals in the ISI Economics category. In addition to one journal which had extremely high historical and 2-year self citation percentages of 90 and 89, respectively, there were 28 journals which had both historical and 2-year self citation percentages in excess of 20, and 45 journals which had a 2-year self citation percentage in excess of 20. The extremes

were in the ranges 60-60 (one historical, and 6 in the most recent 2-year period), 50-59 (2 historical, and 8 in the most recent 2-year period), 40-49 (one historical, and 5 in the most recent 2-year period), 30-39 (7 historical, and 9 in the most recent 2-year period), and 20-29 (17 historical, and 17 in the most recent 2-year period). It is, of course, entirely possible that good reasons exist for the historical journal self citation rates to be apparently so high, but it would certainly be difficult to justify the inflationary increases over the most recent 2-year period.

It remains to be seen whether an emphasis on THE impact factor, specifically the 2-year impact factor, of a journal to the exclusion of other useful and illuminating ISI RAM criteria, can lead to a distorted evaluation of journal performance and influence on the profession. In order to summarize the alternative RAM criteria, the rankings of the journals in the four categories across the 12 ISI RAM are given in Tables 10-13, where the final rankings are based on the harmonic mean.

Table 10 presents the rankings for each of the 12 RAM criteria, with the 40 ISI Economics journals ranked according to the harmonic mean (in the last column). As compared with the selection of the most highly cited journals on the basis of 2YIF, the rankings based on all 12 RAM have several marked differences. The top ten journals are generally ranked highly according to all RAM criteria. In terms of re-ordering among the top ten journals when the harmonic mean is used instead of 2YIF, American Economic Review has increased from 12 to 4, and Journal of Business & Economic Statistics has risen from 20 to 8.

Journals to have risen by 10 or more places include Journal of Law, Economics & Organization (from 25 to 12), Brookings Papers on Economic Activity (from 33 to 10), Journal of Policy Analysis & Management (from 39 to 22), and Journal of Human Resources (from 40 to 24). Journal to have fallen by 10 or more places include Economic Geography (from 7 to 17), Journal of Economic Geography (from 8 to 18), Economic Policy (from 14 to 26), Energy Economics (from 15 to 28), Journal of Health Economics (from 17 to 27), Ecological Economics (from 19 to 35), and Journal of Common Market Studies (from 21 to 37).

There are several noticeable movements according to the harmonic mean of the 12 RAM criteria for the 12 ISI Business - Finance journals in Table 11. World Bank Economic Review has risen by 5 (from 8 to 3), while two journals to have risen by 4 are Journal of Monetary Economics (from 11 to 7) and Journal of Money, Credit and Banking (from 12 to 8). Two journals to have fallen by 4 are Accounting Review (from 6 to 10) and Accounting Organisation and Society (from 7 to 11).

Table 12 shows that there are only a few, and reasonably small, changes in rankings according to the harmonic mean of the 12 RAM criteria for the 12 Management journals. Both Administrative Science Quarterly and Organisation Science have risen by 3 (from 8 to 5, and 12 to 9, respectively), while Journal of Management and Journal of International Business Studies has fallen by 3 (from 5 to 8, and 7 to 10, respectively).

Finally, Table 13 shows a number of changes, with Administrative Science Quarterly having risen by 5 (from 9 to 4) and Journal of Marketing Research having risen by 4 (from 12 to 8), while Journal of Retailing has fallen by 6 (from 3 to 9) and Marketing Science has fallen by 5 (from 6 to 11).

4. Conclusion

The paper discussed alternative Research Assessment Measures (RAM), with an emphasis on the Thomson Reuters ISI Web of Science (hereafter ISI) database. Alternative ISI RAM that are calculated annually or updated daily were defined and analysed, including the classic 2-year impact factor (2YIF) with and without journal self citations, 5-year impact factor (5YIF), Immediacy (or zero-year impact factor (0YIF)), Eigenfactor score, Article Influence, h-index, C3PO, Zinfluence, PI-BETA, and two new RAM criteria, namely a Self-citation Threshold Approval Rating (STAR) score and an Impact Factor Inflation (IFI) score.

The ISI RAM data were analysed for the 40 most highly cited journals in Economics, and the 12 most highly cited journals in each of Management, Business - Finance and Business. Of the highly cited journals (according to 2YIF) in the Business - Finance

category, 4 are also in Economics, and 7 journals in the Management category are also in Business. The application to these four ISI categories could be used as a template for other ISI categories in both the Social Sciences and the Sciences, and as a benchmark for newer journals in a range of ISI disciplines.

In addition to evaluating high quality research in the most highly cited Economics journals, the paper also compared the most highly cited journals in Management, Business and Business - Finance, alternative RAM, highlighted the similarities and differences in alternative RAM criteria, found that several ISI RAM captured similar performance characteristics for the most highly cited Economics, Management, Business and Business - Finance journals, determined that the Immediacy and PI-BETA scores were not highly correlated with the other ISI RAM, and hence conveyed additional information regarding ISI RAM criteria. Harmonic mean rankings of the 12 RAM criteria for the most highly cited journals in the four categories were also presented. It was shown that emphasizing THE impact factor, specifically the 2-year impact factor, of a journal to the exclusion of other useful and illuminating RAM criteria, could lead to a distorted evaluation of journal performance and influence on the profession.

Likely future uses of RAM include using ISI RAM criteria for research assessment exercises, and as input into academic appointments and promotions. Conundrums such as whether or not it is better to publish in a journal with: (i) high rather than low two-year impact factor (with and without self citations); (ii) high rather than low five-year impact factor; (iii) high rather than low Immediacy; (iv) high rather than low h-index; (v) high rather than low C3PO; (vi) low rather than high PI-BETA; (vii) high rather than low Eigenfactor score; (viii) high rather than low Article Influence; (ix) high rather than low STAR scores (both historical and 2-year); and (x) low rather than high IFI score, can also be analysed critically, as such choices will likely increase the probability of being highly cited which, in turn, will lead to a journal achieving greatness.

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Table 1
Research Assessment Measures (RAM) for 40 Economics Journals

Journal	2YIF	2YIF*	IFI	5YIF	Immediacy	h-index	C3PO	PI-BETA	Eigenfactor Score	Article Influence	H-STAR	2Y-STAR
Quarterly Journal of Economics	5.048	4.690	1.076	8.716	0.756	125	65.570	0.055	0.0542	11.978	98	86
Journal of Economic Literature	4.842	4.763	1.017	8.380	0.842	101	8.370	0.856	0.0181	8.852	100	98
Journal of Economic Perspectives	3.944	3.843	1.026	5.057	0.558	100	28.360	0.200	0.0249	5.340	100	96
Econometrica	3.865	3.606	1.072	4.943	0.255	123	49.670	0.077	0.0453	7.243	98	88
Journal of Political Economy	3.725	3.667	1.016	5.742	0.419	125	56.090	0.069	0.0409	8.821	100	98
Journal of Financial Economics	3.542	3.105	1.141	5.203	0.562	108	38.910	0.107	0.0469	5.237	86	76
Economic Geography	2.968	2.806	1.058	3.578	0.438	42	6.800	0.592	0.0022	1.217	92	90
Journal of Economic Geography	2.932	2.322	1.263	4.557	0.576	25	9.210	0.360	0.0054	1.854	76	60
Journal of Accounting and Economics	2.851	2.478	1.151	4.405	0.143	64	24.600	0.133	0.0178	3.364	84	74
Review of Economic Studies	2.633	2.567	1.026	4.036	0.766	79	31.060	0.087	0.0310	6.321	98	96
Journal of Economic Growth	2.542	2.500	1.017	6.032	0.000	29	21.830	0.114	0.0091	6.629	98	98
American Economic Review	2.285	2.106	1.085	3.775	0.330	149	29.350	0.111	0.0916	4.668	98	86
Journal of Labour Economics	2.275	2.137	1.065	2.727	0.238	58	20.100	0.082	0.0102	3.222	96	88
Economic Policy	2.250	2.094	1.074	2.878	0.562	15	4.420	0.414	0.0044	2.680	94	88
Energy Economics	2.248	1.168	1.925	2.726	0.710	34	6.680	0.230	0.0049	0.857	22	4
Review of Economics and Statistics	2.233	2.172	1.028	3.630	0.492	74	18.580	0.094	0.0301	3.887	98	96
Journal of Health Economics	2.118	1.782	1.189	3.585	0.472	61	17.590	0.153	0.0120	1.866	80	70
Health Economics	1.994	1.773	1.125	2.627	0.619	52	11.510	0.238	0.0109	1.083	80	78
Ecological Economics	1.912	1.449	1.320	2.374	0.407	52	8.190	0.285	0.0144	0.756	60	52
Journal of Business & Economic Statistics	1.848	1.848	1.000	2.033	0.346	65	16.670	0.200	0.0080	1.966	98	100
Journal of Common Market Studies	1.837	1.500	1.225	1.693	0.333	10	0.880	0.759	0.0044	0.807	78	64
World Bank Economic Review	1.810	1.714	1.056	2.192	0.609	43	12.550	0.279	0.0042	1.906	96	90
Economic Journal	1.798	1.719	1.046	2.767	0.375	69	7.710	0.574	0.0235	2.628	96	92

Journal	2YIF	2YIF*	IFI	5YIF	Immediacy	h-index	C3PO	PI-BETA	Eigenfactor	Article Influence	H-STAR	2Y-STAR
Journal of Econometrics	1.790	1.543	1.160	2.625	0.211	88	19.610	0.148	0.0274	2.284	86	74
Journal of Law Economics & Organisation	1.731	1.731	1.000	1.904	0.200	47	19.700	0.128	0.0045	1.774	98	100
Journal of Environmental Economics & Management	1.730	1.596	1.084	2.574	0.550	64	18.960	0.097	0.0083	1.392	90	86
Energy Journal	1.726	1.585	1.089	1.870	0.250	28	5.740	0.410	0.0035	0.886	86	84
Journal of International Economics	1.724	1.449	1.190	2.749	0.266	60	13.250	0.274	0.0180	2.581	84	70
International Journal of Forecasting	1.685	1.348	1.250	1.596	0.260	38	6.490	0.386	0.0038	0.735	78	60
Economics and Society	1.655	1.414	1.170	1.965	0.556	37	9.460	0.307	0.0031	0.983	88	72
Insurance Mathematics & Economics	1.477	0.800	1.846	1.577	0.236	32	3.580	0.515	0.0042	0.586	22	10
Journal of Urban Economics	1.460	1.210	1.207	1.837	0.238	47	11.700	0.096	0.0075	1.256	76	66
Brookings Papers on Economic Activity	1.455	1.409	1.033	3.531	0.333	32	10.390	0.306	0.0045	4.172	100	94
Journal of Monetary Economics	1.429	1.178	1.213	2.737	0.140	78	19.560	0.208	0.0291	3.227	88	66
Journal of Money Credit and Banking	1.422	1.289	1.103	2.020	0.175	46	8.620	0.277	0.0159	2.093	88	82
Small Business Economics	1.415	0.708	1.999	1.710	0.283	32	6.740	0.242	0.0025	0.391	58	0
World Development	1.392	1.225	1.136	2.330	0.206	61	9.570	0.217	0.0149	1.148	82	78
Journal of Policy Analysis & Management	1.377	1.159	1.188	1.526	0.302	37	3.890	0.607	0.0041	0.956	84	70
Rand Journal of Economics	1.380	1.320	1.045	2.292	0.098	69	23.140	0.100	0.0157	2.908	92	94
Journal of Human Resources	1.369	1.308	1.047	2.232	0.312	56	18.18	0.108	0.00972	2.214	96	92
MEAN	2.243	2.002	1.169	3.268	0.386	61	17.582	0.262	0.0173	3.069	86	77
MEDIAN	1.843	1.717	1.087	2.727	0.333	57	12.900	0.212	0.0106	2.154	89	85
MIN	1.369	0.708	1.000	1.526	0.000	10	0.880	0.055	0.0022	0.391	22	0
MAX	5.048	4.763	1.999	8.716	0.842	149	65.570	0.856	0.0916	11.978	100	100

Note: Citations data downloaded from ISI on 3 June 2010 for 1988-2010.

Table 2
Research Assessment Measures (RAM) for 12 Business - Finance Journals

Journal	2YIF	2YIF*	IFI	5YIF	Immediacy	h-index	C3PO	PI-BETA	Eigenfactor	Article Influence	H-STAR	2Y-STAR
Journal of Finance	4.018	3.485	1.153	5.863	0.568	133	35.180	0.268	0.0469	6.005	90	74
Journal of Financial Economics	3.542	3.105	1.141	5.203	0.562	108	38.910	0.107	0.0178	5.237	86	76
Journal of Accounting and Economics	2.851	2.478	1.151	4.405	0.143	64	24.600	0.133	0.0291	3.364	84	74
Review of Financial Studies	2.640	2.280	1.158	3.474	0.443	76	23.270	0.174	0.0159	4.300	86	74
Journal of Accounting Research	2.350	1.967	1.195	3.733	0.474	52	16.700	0.180	0.0584	3.000	84	68
Accounting Review	1.920	1.575	1.219	3.498	0.365	48	10.680	0.383	0.0205	2.146	82	66
World Bank Economic Review	1.810	1.714	1.050	2.192	0.609	43	12.550	0.279	0.0090	1.906	96	90
Accounting Organisation and Society	1.803	1.377	1.309	2.753	0.233	37	10.200	0.141	0.0105	0.550	46	54
Journal of Corporate Finance	1.700	1.188	1.431	2.011	0.438	19	5.850	0.231	0.0042	1.292	64	40
Review of Accounting Studies	1.500	1.361	1.102	2.471	0.444	15	4.870	0.352	0.0018	2.095	86	82
Journal of Monetary Economics	1.429	1.178	1.213	2.737	0.14	78	19.560	0.208	0.0053	3.227	88	66
Journal of Money Credit and Banking	1.422	1.289	1.103	2.020	0.175	46	8.620	0.277	0.0040	2.093	88	82
MEAN	2.248	1.916	1.185	3.363	0.383	60	17.583	0.228	0.0186	2.935	82	71
MEDIAN	1.862	1.645	1.155	3.114	0.441	50	14.625	0.219	0.0132	2.573	86	74
MIN	1.422	1.178	1.050	2.011	0.140	15	4.870	0.107	0.0018	0.550	46	40
MAX	4.018	3.485	1.431	5.863	0.609	133	38.910	0.383	0.0584	6.005	96	90

Note: Citations data downloaded from ISI on 3 June 2010 for 1988-2010.

Table 3
Research Assessment Measures (RAM) for 12 Management Journals

Journal	2YIF	2YIF*	IFI	5YIF	Immediacy	h-index	C3PO	PI-BETA	Eigenfactor	Article Influence	H-STAR	2Y-STAR
Academy of Management Review	6.125	5.904	1.037	8.211	1.209	137	46.400	0.349	0.0194	4.299	96	94
Academy of Management Journal	6.079	5.516	1.102	7.670	0.273	142	57.810	0.065	0.0250	3.870	92	82
MIS Quarterly	5.183	4.775	1.085	11.586	0.778	94	47.670	0.134	0.0114	3.541	92	86
Strategic Management Journal	3.344	3.031	1.103	6.708	0.443	137	55.330	0.070	0.0220	2.896	88	82
Journal of Management	3.080	2.813	1.095	4.532	0.225	81	31.340	0.166	0.0099	2.177	94	84
Organisational Research Methods	3.019	2.717	1.111	3.387	1.211	26	7.960	0.376	0.0047	1.900	82	80
Journal of International Business Studies	2.992	2.441	1.226	5.030	0.320	74	20.430	0.264	0.0077	1.513	76	64
Administrative Science Quarterly	2.853	2.559	1.115	6.313	0.125	122	38.620	0.579	0.0068	3.674	98	80
Organisational Behaviour & Human Decision Processes	2.740	2.500	1.096	3.187	0.500	77	27.990	0.069	0.0087	1.746	94	84
Research Policy	2.655	2.193	1.211	4.043	0.206	76	16.150	0.256	0.0126	1.174	74	66
Journal of Product Innovation Management	2.650	2.283	1.161	3.607	0.121	57	11.530	0.508	0.0029	0.953	80	74
Organisation Science	2.575	2.208	1.166	5.453	0.321	93	41.020	0.117	0.0154	2.851	94	72
AVERAGE	3.608	3.245	1.126	5.811	0.478	93	33.521	0.246	0.0122	2.550	88	79
MEDIAN	3.006	2.638	1.107	5.242	0.321	87	34.980	0.211	0.0106	2.514	92	81
MIN	2.575	2.193	1.037	3.187	0.121	26	7.960	0.065	0.0029	0.953	74	64
MAX	6.125	5.904	1.226	11.586	1.211	142	57.810	0.579	0.0250	4.299	98	94

Note: Citations data downloaded from ISI on 3 June 2010 for 1988-2010.

Table 4
Research Assessment Measures (RAM) for 12 Business Journals

Journal	2YIF	2YIF*	IFI	5YIF	Immediacy	h-index	C3PO	PI-BETA	Eigenfactor	Article Influence	H-STAR	2Y-STAR
Academy of Management Review	6.125	5.904	1.037	8.211	1.209	137	46.400	0.349	0.0194	4.299	96	94
Academy of Management Journal	6.079	5.516	1.102	7.670	0.273	142	57.810	0.065	0.0250	3.870	92	82
Journal of Retailing	4.095	1.095	3.740	4.978	1.114	53	22.820	0.110	0.0026	0.863	0	-46
Journal of Marketing	3.598	3.043	1.182	7.092	0.204	119	54.800	0.245	0.0134	2.929	90	70
Strategic Management Journal	3.344	3.031	1.103	6.708	0.443	137	55.330	0.070	0.0220	2.896	88	82
Marketing Science	3.309	1.862	1.777	3.868	0.096	66	20.710	0.186	0.0101	2.228	62	14
Journal of Management	3.080	2.813	1.095	4.532	0.225	81	31.340	0.166	0.0099	2.177	94	84
Journal of International Business Studies	2.992	2.441	1.226	5.030	0.320	74	20.430	0.264	0.0077	1.513	76	64
Administrative Science Quarterly	2.853	2.559	1.115	6.313	0.125	122	38.620	0.579	0.0068	3.674	98	80
Journal of Consumer Psychology	2.841	1.536	1.850	2.766	3.000	28	6.540	0.337	0.0045	1.089	58	10
Journal of Product Innovation Management	2.650	2.283	1.161	3.607	0.121	57	11.530	0.508	0.0029	0.953	80	74
Journal of Marketing Research	2.574	2.270	1.134	3.558	0.704	90.	25.520	0.309	0.0116	2.171	92	78
MEAN	3.628	2.863	1.460	5.361	0.653	92	32.654	0.266	0.0113	2.389	77	57
MEDIAN	3.195	2.500	1.147	5.004	0.297	85	28.430	0.255	0.0100	2.203	89	76
MIN	2.574	1.095	1.037	2.766	0.096	28	6.540	0.065	0.0026	0.863	0	-46
MAX	6.125	5.904	3.740	8.211	3.000	142	57.810	0.579	0.0250	4.299	98	94

Note: Citations data downloaded from ISI on 3 June 2010 for 1988-2010.

Table 5
Correlations for 40 Economics, 12 Business - Finance,
12 Management and 12 Business Journals

	2YIF	2YIF*	IFI	5YIF	Immediacy	h-index	C3PO	PI-BETA	Eigenfactor	Article Influence	H-STAR	2Y-STAR
2YIF	-											
2YIF*	0.927	-										
IFI	0.042	-0.322	-									
5YIF	0.890	0.870	-0.090	-								
Immediacy	0.312	0.178	0.295	0.154	-							
h-Index	0.670	0.712	-0.225	0.689	-0.049	-						
C3PO	0.720	0.737	-0.165	0.767	-0.021	0.864	-					
PI-BETA	-0.100	-0.074	-0.028	-0.129	0.088	-0.319	-0.513	-				
Eigenfactor	0.346	0.409	-0.222	0.353	-0.036	0.730	0.554	-0.336	-			
Article Influence	0.574	0.680	-0.313	0.639	0.039	0.617	0.642	-0.200	0.669	-		
H-STAR	0.123	0.440	-0.863	0.244	-0.196	0.384	0.346	-0.053	0.328	0.488	-	
2Y-STAR	0.072	0.415	-0.915	0.194	-0.264	0.310	0.267	-0.039	0.271	0.435	0.927	-

Note: Citations data downloaded from ISI on 3 June 2010 for 1988-2010. As there is an overlap of 11 papers across the four categories, there are 65 distinct papers.

Table 6
Correlations for 40 Economics Journals

	2YIF	2YIF*	IFI	5YIF	Immediacy	h-index	C3PO	PI-BETA	Eigenfactor	Article Influence	H-STAR	2Y-STAR
2YIF	-											
2YIF*	0.974	-										
IFI	-0.245	-0.440	-									
5YIF	0.920	0.917	-0.306	-								
Immediacy	0.533	0.484	-0.007	0.435	-							
h-Index	0.607	0.641	-0.335	0.601	0.195	-						
C3PO	0.654	0.678	-0.334	0.657	0.142	0.807	-					
PI-BETA	-0.020	-0.040	0.140	-0.094	0.162	-0.408	-0.627	-				
Eigenfactor	0.478	0.490	-0.252	0.508	0.117	0.896	0.720	-0.390	-			
Article Influence	0.824	0.865	-0.406	0.908	0.306	0.717	0.812	-0.245	0.636	-		
H-STAR	0.289	0.481	-0.915	0.365	0.007	0.404	0.411	-0.187	0.321	0.500	-	
2Y-STAR	0.280	0.481	-0.981	0.347	0.031	0.363	0.368	-0.163	0.259	0.466	0.932	-

Note: Citations data downloaded from ISI on 3 June 2010 for 1988-2010.

Table 7
Correlations for 12 Business - Finance Journals

	2YIF	2YIF*	IFI	5YIF	Immediacy	h-index	C3PO	PI-BETA	Eigenfactor	Article Influence	H-STAR	2Y-STAR
2YIF	-											
2YIF*	0.989	-										
IFI	-0.186	-0.330	-									
5YIF	0.953	0.941	-0.196	-								
Immediacy	0.445	0.470	-0.196	0.301	-							
h-Index	0.842	0.850	-0.278	0.854	0.228	-						
C3PO	0.905	0.912	-0.275	0.900	0.274	0.943	-					
PI-BETA	-0.400	-0.353	-0.186	-0.332	0.153	-0.341	-0.528	-				
Eigenfactor	0.800	0.803	-0.229	0.810	0.228	0.955	0.892	-0.241	-			
Article Influence	0.860	0.883	-0.385	0.855	0.355	0.920	0.918	-0.261	0.914	-		
H-STAR	0.229	0.343	-0.794	0.241	0.287	0.390	0.350	0.293	0.394	0.564	-	
2Y-STAR	0.151	0.300	-0.997	0.146	0.219	0.237	0.233	0.219	0.196	0.350	0.791	-

Note: Citations data downloaded from ISI on 3 June 2010 for 1988-2010.

Table 8
Correlations for 12 Management Journals

	2YIF	2YIF*	IFI	5YIF	Immediacy	h-index	C3PO	PI-BETA	Eigenfactor	Article Influence	H-STAR	2Y-STAR
2YIF	-											
2YIF*	0.997	-										
IFI	-0.611	-0.670	-									
5YIF	0.766	0.760	-0.461	-								
Immediacy	0.455	0.492	-0.554	0.270	-							
h-Index	0.606	0.609	-0.429	0.622	-0.101	-						
C3PO	0.650	0.653	-0.538	0.753	0.018	0.910	-					
PI-BETA	-0.225	-0.211	0.118	-0.219	-0.0001	-0.254	-0.500	-				
Eigenfactor	0.644	0.633	-0.335	0.504	0.083	0.814	0.829	-0.605	-			
Article Influence	0.758	0.776	-0.687	0.788	0.325	0.800	0.850	-0.119	0.632	-		
H-STAR	0.380	0.425	-0.765	0.429	0.130	0.569	0.676	-0.162	0.324	0.762	-	
2Y-STAR	0.630	0.689	-0.996	0.479	0.557	0.432	0.531	-0.117	0.328	0.676	0.752	-

Note: Citations data downloaded from ISI on 3 June 2010 for 1988-2010.

Table 9
Correlations for 12 Business Journals

	2YIF	2YIF*	IFI	5YIF	Immediacy	h-index	C3PO	PI-BETA	Eigenfactor	Article Influence	H-STAR	2Y-STAR
2YIF	-											
2YIF*	0.830	-										
IFI	0.008	-0.541	-									
5YIF	0.751	0.800	-0.277	-								
Immediacy	0.035	-0.166	0.350	-0.304	-							
h-Index	0.564	0.788	-0.537	0.900	-0.445	-						
C3PO	0.589	0.710	-0.373	0.907	-0.393	0.944	-					
PI-BETA	-0.365	-0.120	-0.291	-0.205	0.043	-0.148	-0.368	-				
Eigenfactor	0.669	0.817	-0.485	0.739	-0.213	0.844	0.846	-0.500	-			
Article Influence	0.627	0.828	-0.545	0.836	-0.287	0.918	0.830	-0.012	0.782	-		
H-STAR	0.056	0.592	-0.980	0.370	-0.373	0.636	0.477	0.289	0.530	0.656	-	
2Y-STAR	0.128	0.653	-0.945	0.451	-0.436	0.686	0.520	0.246	0.554	0.631	0.963	-

Note: Citations data downloaded from ISI on 3 June 2010 for 1988-2010.

Table 10
Harmonic Mean Rankings of 12 RAM Criteria for
40 Economics Journals

Journal	2YIF	2YIF*	IFI	5YIF	Immediacy	h-index	C3PO	PI-BETA	Eigenfactor	Article Influence	H-STAR	2Y-STAR	Harmonic mean
Quarterly Journal of Economics	1	2	19	1	3	2=	1	1	2	1	5=	18=	1
Journal of Economic Literature	2	1	4	2	1	6	29	40	12	2	1=	3=	2
Journal of Political Economy	5	4	3	4	16	2=	2	2	5	3	1=	3=	3
American Economic Review	12	14	20	11	22	1	6	12	1	9	5=	18=	4
Journal of Economic Perspectives	3	3	7	6	10	7	7	19	10	7	1=	6=	5
Econometrica	4	5	16	7	28	4	3	3	4	4	5=	15	6
Review of Economic Studies	10	8	6	10	2	9	5	5	6	6	5=	6=	7
Journal of Business & Economic Statistics	20	16	1	30	19	14	19	18	25	22	5=	1=	8
Journal of Financial Economics	6	6	25	5	8	5	4	10	3	8	24	25	9
Brookings Papers on Economic Activity	33	29	9	15	20	33=	24	29	29	10	1=	9	10
Journal of Economic Growth	11	9	5	3	40	36	10	13	23	5	5=	3=	11
Journal of Law Economics & Organisation	25	19	2	32	35	24=	12	14	30	26	5=	1=	12
Review of Economics and Statistics	16	12	8	12	13	11	16	6	7	11	5=	6=	13
Economic Journal	23	20	11	17	18	12=	3	36	11	17	13=	11	14
Journal of Labour Economics	13	13	15	20	30	20	11	4	21	14	13=	15=	15
Journal of Accounting and Economics	9	10	26	9	37	15=	8	15	14	12	27=	26=	16
Economic Geography	7	7	14	14	15	28	32	37	40	29	18	13	17
Journal of Economic Geography	8	11	36	8	7	38	27	31	27	25	35	35	18
Journal of Econometrics	24	24	27	23	33	8	13	16	9	19	24=	26=	19
World Bank Economic Review	22	21	13	29	6	27	21	27	34	23	13=	13	20
Health Economics	18	18	23	22	5	22=	23	23	20	31	31=	23	21

Journal	2YIF	2YIF*	IFI	5YIF	Immediacy	h-index	C3PO	PI-BETA	Eigenfactor	Article Influence	H-STAR	2Y-STAR	Harmonic mean
Journal of Policy Analysis & Management	39	31	10	27	39	30=	9	9	16	15	27=	29	22
Journal of Environmental Economics & Management	26	22	19	24	12	15=	15	8	24	27	20	18=	23
Journal of Human Resources	40	32	12	28	23	21	17	11	22	20	13	11	24
Journal of Monetary Economics	34	36	33	19	38	10	14	20	8	13	21=	32	25
Economic Policy	14	15	17	16	9	39	37	34	31	16	17	15=	26
Journal of Health Economics	17	17	30	13	14	17=	18	17	19	24	31=	29=	27
Energy Economics	15	37	39	21	4	32	34	22	28	35	39	39	28
Journal of International Economics	28	27	31	18	26	19	20	25	13	18	27=	29=	29
Journal of Urban Economics	32	35	32	35	31	24=	22	7	26	28	35	32	30
Journal of Money Credit and Banking	35	33	22	31	36	26	28	26	15	21	21=	22	31
Economics and Society	30	28	28	32	11	30=	26	30	38	32	21=	28	32
Rand Journal of Economics	38	38	29	40	24	12=	38	38	35	33	18	9	33
World Development	37	34	24	26	34	17=	25	21	17	30	30	23	34
Ecological Economics	19	27	37	25	17	22=	30	28	18	36	37	37	35
Energy Journal	27	23	21	34	29	37	36	33	37	34	24=	21	36
Journal of Common Market Studies	21	25	34	37	21	40	40	39	32	35	33=	34	37
International Journal of Forecasting	29	30	35	38	27	29	35	32	36	37	33=	35	38
Small Business Economics	36	40	40	36	25	33=	33	24	39	40	38	40	39
Insurance Mathematics & Economics	31	39	38	39	32	33=	39	35	33	39	40	38	40

Note: Citations data downloaded from ISI on 3 June 2010 for 1988-2010.

Table 11
Harmonic Mean Rankings of 12 RAM Criteria for
12 Business - Finance Journals

Journal	2YIF	2YIF*	IFI	5YIF	Immediacy	h-index	C3PO	PI-BETA	Article Influence	Eigenfactor	H-STAR	2Y-STAR	Harmonic mean
Journal of Finance	1	1	6	1	2	1	2	8	1	1	2	5=	1
Journal of Financial Economics	2	2	4	2	3	2	1	1	2	2	5=	4	2
World Bank Economic Review	8	6	1	10	1	9	7	10	10	10	1	1	3
Journal of Accounting and Economics	3	3	5	3	11	5	3	2	5	4	8=	5=	4
Review of Financial Studies	4	4	7	6	6	4	4	4	4	3	5=	5=	5
Journal of Accounting Research	5	5	8	4	4	6	12	5	8	6	8=	8	6
Journal of Monetary Economics	11	12	9	8	12	3	5	6	3	5	3=	9=	7
Journal of Money Credit and Banking	12	10	3	11	10	8	10	9	6	9	3=	2=	8
Review of Accounting Studies	10	9	2	9	5	12	6	11	11	8	5=	2=	9
Accounting Review	6	7	10	5	8	7	8	12	7	7	10	9=	10
Accounting Organisation and Society	7	8	11	7	9	10	9	3	12	12	12	11	11
Journal of Corporate Finance	9	11	12	12	7	11	11	7	9	11	11	12	12

Note: Citations data downloaded from ISI on 3 June 2010 for 1988-2010.

Table 12
Harmonic Mean Rankings of 12 RAM Criteria for
12 Management Journals

Journal	2YIF	2YIF*	IFI	5YIF	Immediacy	h-index	C3PO	PI-BETA	Article Influence	Eigenfactor	H-STAR	2Y-STAR	Harmonic mean
Academy of Management Review	1	1	1	2	2	2=	4	9	3	1	2	1	1
Academy of Management Journal	2	2	5	3	8	1	1	1	1	2	6=	5=	2
MIS Quarterly	3	3	2	1	3	5	3	5	6	4	6=	2	3
Strategic Management Journal	4	4	6	4	5	2=	2	3	2	5	8	5=	4
Administrative Science Quarterly	8	7	8	5	11	4	6	12	10	3	1	7=	5
Organisational Research Methods	6	6	7	11	1	12	12	10	11	8	9	7=	6
Organisational Behaviour & Human Decision Processes	9	8	4	12	4	8	8	2	8	9	3=	3=	7
Journal of Management	5	5	3	8	9	7	7	6	7	7	3=	3=	8
Organisation Science	12	11	10	6	6	6	5	4	4	6	3=	10	9
Journal of International Business Studies	7	9	12	7	7	10	9	8	9	10	11	12	10
Research Policy	10	12	11	9	10	9	10	7	5	11	12	11	11
Journal of Product Innovation Management	11	10	9	10	12	11	11	11	12	12	10	9	12

Note: Citations data downloaded from ISI on 3 June 2010 for 1988-2010.

Table 13
Harmonic Mean Rankings of 12 RAM Criteria for
12 Business Journals

Journal	2YIF	2YIF*	IFI	5YIF	Immediacy	h-index	C3PO	PI-BETA	Article Influence	Eigenfactor	H-STAR	2Y-STAR	Harmonic mean
Academy of Management Review	1	1	1	1	2	2	4	10	3	1	2	1	1
Academy of Management Journal	2	2	3	2	7	1	1	1	1	2	4	3=	2
Strategic Management Journal	5	4	4	4	5	2	2	2	2	5	7	3=	3
Administrative Science Quarterly	9	6	5	5	10	4	5	12	9	3	1	5	4
Journal of Management	7	5	2	8	8	7	6	4	7	7	3	2	5
Journal of Marketing	4	3	8	3	9	5	3	6	4	4	6	8	6
Journal of Consumer Psychology	10	11	11	12	1	12	12	9	10	10	11	11	7
Journal of Marketing Research	12	9	6	11	4	6	7	8	5	8	4	6	8
Journal of Retailing	3	12	12	7	3	11	8	3	12	12	12	12	9
Journal of International Business Studies	8	7	9	6	6	8	10	7	8	9	9	9	10
Marketing Science	6	10	10	9	12	9	9	5	6	6	10	10	11
Journal of Product Innovation Management	11	8	7	10	11	10	11	11	11	11	8	7	12

Note: Citations data downloaded from ISI on 3 June 2010 for 1988-2010.