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# Networks of accounting research: A citation-based structural and network analysis

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#### Abstract

This study measures journal influence using the principles of knowledge capital and social networks. The structural index measure is used to evaluate knowledge capital flows in a network of 22 accounting research journals over the years 2000–2006. The influence measure is a function of both the *quantity* and *quality* of citations resulting in journal influence rankings that reflect each journal's contribution to the broad context of accounting research. Findings show that although some journals are highly cited, they may be less influential in the accounting research community. Publishing research of high value is one key to increasing the influence of a journal in the network. Furthermore, the analysis of a well-defined journal network provides a view of the distinct contribution of individual journals. The network analysis diagram provides a visual perspective of journal relationships, emphasizes the strength of relational ties and suggests that influential journals may take on different roles. The contribution of other disciplines to the top-five influential accounting research journals is also presented. © 2008 Elsevier Ltd. All rights reserved.

Keywords: Citation analysis; Accounting journals; Structural indexing; Journal influence; Network analysis

# 1. Introduction

Journals form the basis of a knowledge network that communicates scholarly research and advances a discipline. The creation of the accounting research network began with *The Accounting Review* as the leading North American journal from 1926 until 1963 when the *Journal of Accounting Research* debuted. In the U.K., *Accounting Research* (1948–1958) was a major research outlet later joined by three additional non-U.S. research journals—*Abacus, Journal of Business Finance and Accounting*, and *Accounting and Business Research* (see Appendix A). Seven more accounting research journals were established in the 1970s, nine in the 1980s, and two in the 1990s. In addition to research journals, numerous other accounting publications have appeared. Cabell lists more than 130 accounting-related publishing opportunities (see Cabell, 2001–2002) including news periodicals and applied professional publications with at least 77 classified as research-oriented (Zeff, 1996).

Within the larger collection of accounting-related and research-oriented publications, a smaller network of scientific journals serves as the major forum for accounting research (Campbell et al., 1983; Brown and Huefner, 1994).

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The objective of these journals is to disseminate original scholarly research or "discovery" research that utilizes a scientific basis. Accounting academics are often evaluated on their research productivity and the publication of discovery research is an important measure of scholarly performance. Because research productivity may impact promotion and tenure (Kirkpatrick and Locke, 1992), compensation (Gomez-Mejia and Balkin, 1992) and departmental or business school rankings (Saftner, 1988; Schultz et al., 1989; Hasselback and Reinstein, 1995; Read et al., 1998; Everett et al., 2003), the publication outlet (i.e., journal) is a major focal point. University departments may specify a list of "quality" journals in which faculty/researchers are encouraged to publish (Richardson and Williams, 1990; Whittington, 1997; Van Fleet et al., 2000; Mylonopoulos and Theoharakis, 2001; Mathieu and McConomy, 2003). Consequently, the factors comprising journal quality continue to be a source of scrutiny and debate among faculty, researchers, and university administrators.

Numerous accounting studies attempt to measure journal quality using peer-ranking (Benjamin and Brenner, 1974; Howard and Nikolai, 1983; Hull and Wright, 1990; Brown and Huefner, 1994; Ballas and Theoharakis, 2003; Lowe and Locke, 2005, 2006) and citation methodologies (McRae, 1974; Dyckman and Zeff, 1984; Brown and Gardner, 1985; Smith and Krogstad, 1988; Milne, 2001). Although self-serving and predisposition biases may be inherent in perception rankings (Morris, Cudd, and Crain, 1990; Todorov and Glanzel, 1988), and scope limitations (e.g., Dyckman and Zeff, 1984; Brown and Gardner, 1985) with issues of negative referencing (Croom, 1970) and halo effects (May, 1967) often plague the results of citation analyses, survey and citation analysis remain legitimate methods for journal evaluation. In fact, recent accounting journal studies use the perception approach to identify quality journals using a global survey of academics (Ballas and Theoharakis, 2003) and a sample of Australasian and British academics (Lowe and Locke, 2006). However, citation analyses have not been used to support the current rankings and increase the confidence placed in explicitly naming the 'top' accounting journals. When the two methodologies provide similar evidence despite their limitations, this 'triangulation' adds to our confidence in identifying influential journals across a broad and varied mix of accounting research.

In contrast to past citation analyses in accounting, the present study calculates the relative influence of accounting journals in a specific research journal network using structural influence indexing (Salancik, 1986) as the methodological approach. The influence measure reflects the extent to which a journal is utilized within a specified network for the knowledge capital it contains. An additional contribution of this study is in presenting how influence indexing may be used to evaluate the unique contribution of some accounting journals. For example, a journal of limited scope (e.g., taxation) that tends to publish behavior-based research may hold greater influence among a network of journals with similar methodological preferences, and lesser influence within a broad journal network. On the one hand, the contribution of the journal is highlighted and on the other it is relatively obscure. Furthermore, when the influence index is applied to a network of journals that span disciplines (e.g., accounting, social science, economics) patterns of knowledge flows are revealed as well as the extent to which accounting research influences or is influenced by other disciplines.

The underlying premise in applying the indexing method to the research journal context is that researchers identify and build upon the best research and a journal is influential to the degree it contributes to current and subsequent research. In essence, this study evaluates the perspective of the primary consumers of accounting research, active researchers. Through examining the network of bibliographic citations, the intellectual linkages among authors, journals, and fields are revealed. The structural influence metric traces the flows of researchers' intellectual assets and provides an estimate of journal influence from the researchers' viewpoint. Influence indexing has been successfully applied to a network of marketing journals (Baumgartner and Pieters, 2003). The unique contribution of this method includes a weighting scheme that evaluates both direct and indirect linkages among journals with the elimination of self-citations in the analysis. Consequently, journal influence is a function of both the quantity and quality of cites received, and the elimination of self-cites in the analysis may reduce the extent of journal bias.<sup>1</sup>

Results in this study show that the number of citations a journal receives from other network journals or the number of articles a journal publishes may not be indicative of higher journal status. Journals publishing fewer manuscripts of greater quality (i.e., contribution) may be more influential in the network than journals publishing many articles. Furthermore, specialized accounting journals such as the *Journal of Management Accounting Research* and the

 $<sup>^{1}</sup>$  Journal bias includes the "halo effect" (May, 1967), defined as the use of citations to legitimize papers, as well as obligatory or perfunctory citations.

*Journal of the American Taxation Association* also demonstrate influence in the broad accounting research community despite a narrow research focus. Additional network analyses using UCINET VI software provides a visual depiction of relational ties among North American and Non-North American accounting research journals and shows the extent of knowledge sharing within the geographically dispersed accounting research community.

#### 2. Theoretical background

The idea of knowledge capital originates from the Social Capital literature where the notion of capital is *the sum of resources accruing to an individual or group by virtue of the relationships present in a durable network* (Bourdieu, 1986). In a journal network, knowledge capital represents the pool of resources or archival knowledge from which researchers draw concepts, theories and ideas. Since innovative theories and methods are most often constructed relative to a given context rather than independent of previous thought (Price, 1986), the pool of available knowledge capital increases as archival knowledge is used and integrated into current research (Dierickx et al., 1989). When resources from the pool are utilized, scholarly associations among researchers are demonstrated via journal citations and references. A journal network based on commonalities (e.g., concepts, theories, methodologies) takes shape as researchers draw from the pool of resources, create new knowledge capital, and document the use of archival knowledge. In sum, knowledge capital represents the resources that accrue among researchers with common interests. In documenting the location of knowledge capital, researchers identify the source (i.e., journal) and participate in the dissemination of that capital throughout the network.

Published knowledge is also an "objectified" form of capital (Everett et al., 2003) such that publication in a top journal often confers a mark of distinction upon the research. Significant research represents ideological consensus and highly regarded research (e.g., theory) may become an enduring form of knowledge capital (Bourdieu, 1988). Important research often influences a field for many years, conveying a higher degree of status on the journal from which it originated. As an objectified form of capital, published research is independently affirmed and legitimately added to the knowledge pool. Thus, journal citations document the use of knowledge capital and convey the relative influence of the journal in the field or network.

A journal network also resembles a social network which is defined as a *group of participants that exchange information between and among members* (Scott, 1991). Knowledge and ideas are exchanged among individuals that are interconnected and among researchers whose objectives, thoughts and passions intersect. A community (or network) of researchers implies the existence of a social network based on common scholarship. Within an academic research network, knowledge exchanges often occur indirectly via journal publications. As researchers document knowledge exchanges, a network is constructed revealing linkages among authors, ideas, fields, and journals. Social network analysis among individuals reveals communication patterns among members and identifies distinct relationships. Applied to a journal network, network analysis identifies scholarly interactions and relational patterns among journal authors.

Bibliometric analysis is appropriate to evaluate journal influence and relational patterns in a network. Citations represent the judgment of key people (i.e., researchers) who are likely well informed about the value of their sources. Citations identify sources of knowledge capital as references are "...footprints which bear witness to the passage of ideas" (Cronin, 1981). Citations also reflect the extent of scholarly dependence and document a field's intellectual development (Culnan, 1987). Citation-based analysis is a well-established method to measure the influence of journals, articles and authors (Garfield, 1979) and the scholarly impact of scientific journals (Gordon, 1982). It is also directly correlated with scientific productivity and peer judgments of performance (Bayer and Folger, 1966).

# 3. Journal influence

In general, a journal is influential to the extent that it publishes research contributing to the exchange of knowledge, the advancement of theories, and the development of paradigms. When authors in Journal A cite the research appearing in Journal B, they attest to the influence of Journal B in their network. Prior citation analyses in accounting primarily identify influential journals via the quantity of direct linkages in the network. In this study, journal influence represents the status of a journal in a specified network based not only on the use of its knowledge capital (i.e., citation quantity), but also on the quality of the journals in which those citations appear as well as the indirect ties among journals. Hence, the structural influence index is a comprehensive measure of journal influence and a broad indicator of a journal's contribution to a specified network of journals.

## 3.1. Peer judgments of accounting journals

In contrast, a subjective approach to evaluating journal status based on the perceptions of key informants is common in the literature. Prior accounting studies use opinion surveys of accounting faculty and/or accounting department chairs and either magnitude estimations or arithmetic mean calculations to rank accounting journals. Various journalquality perception studies have been performed over the years surveying U.S. accounting academics (Benjamin and Brenner, 1974; Howard and Nikolai, 1983; Hull and Wright, 1990; Smith, 1994), an international sample of accounting academics (Ballas and Theoharakis, 2003) and Australasian and British academics (Lowe and Locke, 2006). One of the few consistent findings among these studies is that the *Accounting Review* is ranked either first or second (Table 1).

Peer-ranking research is valuable in as much as it is an evaluation of perceptions, but it has shortcomings as a measure of journal influence or research contribution. The subjectivity inherent in peer ranking limits its usefulness for identifying influential journals that are newer to the network. Baumgartner and Pieters (2003) find that marketing journal rankings are positively correlated with a journal's age. Peer rankings may also be unduly influenced by strategic responding or self-serving biases (Extejt and Smith, 1990). Moreover, it is generally unknown which journals the respondents actually read, subscribe to, or publish in. The implicit variables used by respondents to rank journals (e.g., popularity, familiarity, readability) are often neither identified nor evaluated. Hence, the effect of personal biases is unknown, and these biases may or may not relate to journal quality.

## 3.2. Citation-based analyses of journals

Another common method in the accounting literature for evaluating journal quality is citation analysis. Underlying citation analysis is the supposition that influential journals are cited most often by other journals in the field. Among the major criticisms is that journals may be falsely overrated or underrated depending on the number of self-cites (Baumgartner and Pieters, 2003). Journals that publish more articles per issue or contain a greater number of self-cites inevitably attain higher status if quality is solely based on the number of citations. Citation frequency may also be affected by factors unrelated to the contribution of the research such as superficial citations and popularity of authors.

Accounting journal research has applied citation-based analyses in a variety of ways. McRae (1974) uses citation analysis to map the communication flows among journals and removes self-cites from the analysis to control for self-citation bias. Dyckman and Zeff (1984) gauge the impact of the *Journal of Accounting Research* compared to the *Accounting Review* by counting the number of citations to these journals by award winning papers (i.e., AAA Manuscript Award and AICPA Literature Award). Brown and Gardner (1985) compute an impact factor to assess the impact of four prestigious accounting journals (*The Accounting Review, Journal of Accounting Research, Accounting Organizations and Society, Journal of Accounting and Economics*) on contemporary accounting research. Overall, citation-based measures

Table 1

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Rank	Benjamin and Brenner (1974) <sup>a</sup>	Howard and Nikolai (1983) <sup>a</sup>	Hull and Wright (1990) <sup>a</sup>	Smith (1994)	Ballas and Theoharakis (2003)	Lowe and Locke (2005)
	142 U.S. Acc Academics	311 U.S. Acc Academics	278 U.S. Acc Academics	176 U.S. Acc Academics	1230 Int'l Acc Academics	149 U.K. Acc Academics
1	JAR	JAR	JAR	AUD	TAR	AOS
2	TAR	TAR	TAR	TAR	JAR	TAR
3	Mgmt Science	J of Finance	J of Finance	JAR	JAE	JAR
4	Harvard Bus R	J of Finance & Ouant Anal	JAE	AOS	AOS	JAE
5	J of Business	Mgmt Science	J of Finance & Ouant Anal	JAE	CAR	CAR
6	J of Accountancy	J of Business	AOS	JAAF	AHO	AUD
7	ABA	Harvard Bus R	J of Business	CAR	AUD	ABR
8	Financial Analysts J	Dec Sciences	JATA	JAPP	JAAF	JBFA
9	J of Taxation	AOS	JAAF	JBFA	ABA	AAAJ
10	Financial Executive	JBFA	Mgmt Science	AHO	JAP	JMAR

Bold represents the accounting journals in this study's journal network.

<sup>a</sup> See Appendix A for major accounting journals not published prior to these surveys.

are preferred in many disciplines for evaluating journal influence (Doreian, 1988; Johnson and Podsakoff, 1994; Laband and Piette, 1994) and are regarded as a viable indicator of scholarly dependence (Vicery, 1969). The present study differs from prior citation-based accounting studies in that journal influence is measured by evaluating knowledge flows across a variety of accounting journals in a specified network while accounting for the quality of the journals doing the citing.

## 4. Structural influence metric

The structural influence index is a citation-based method derived from sociometric analysis (cf., Katz, 1953) that measures the relative influence of journals within a defined network. Accounting for both direct and indirect knowledge flows, it considers *how many* citations a journal receives and *what journal* did the citing. In contrast, the impact factor calculation and prior citation analyses in accounting consider only direct citation links for a limited number of journals or influential articles. Moreover, prior studies confer equal weight on all citations whereas the influence index assigns a weight based on the influence of the citing journal.

The use of differential weighting recognizes that all journals in a network may not be major contributors of knowledge capital, but nevertheless may publish significant research. Thus, if knowledge capital is retrieved from a journal lower in status and used by researchers publishing in more influential journals, the status of the lower journal increases. Consequently, the influence measure is not unduly affected by citation quantity but is inclusive of other variables (e.g., citation quality) in the determination of relative influence.

Structural indexing also incorporates measures of indirect dependencies that have not been considered in prior citation research. The algebraic construction of the influence measure accounts for these relationships. Since theories and paradigms are built upon the research of others (Price, 1986), multi-level analysis of citations is more reflective of knowledge capital sources and a journal's cumulative influence. Salancik (1986) formulates the concept of structural influence within networks based on theories of organizational influence, proposing that the influence between interdependent parties is a measure of both the direct and indirect dependencies among each network member. In sum, the conceptualization of structural influence depends on three requirements: (1) direct dependencies within the network, (2) the influence of the other members in the network (indirect dependencies), and (3) the intrinsic or base-line value of the member. A discussion of these variables and the mathematical derivation of the index are provided in Appendix B.

#### 5. Methodology

The accounting journal network used in the analyses was constructed following a selection process that began with a list of 40 highly regarded accounting journals using an international sample of accounting faculty (Ballas and Theoharakis, 2003). Since most accounting researchers are a subset of accounting faculty, it is highly probable this list contains the accounting journals making important contributions of "discovery" research. Thus, other accounting research journals not included in the list of 40 (cf., Zeff, 1996) are less likely to contribute scientific-based research, and are excluded from the analysis.

The international peer-ranked list of 40 accounting journals in Appendix C (Ballas and Theoharakis, 2003) was further reduced to the present network of 22 research journals. Following a review of each journal's stated objectives, practitioner journals (e.g., *Journal of Accountancy, Harvard Business Review*), educational journals (e.g., *Issues in Accounting Education*) and review-type journals (e.g., *Journal of Accounting Literature*) were removed from further analysis based on lack of similarity with other research journal's publication objectives<sup>2</sup> and/or contributing less than 0.5 percent of the total network citations. The goal was to arrive at a set of accounting journals that are closely linked based on research and publication objectives as well as the sharing of knowledge capital. The 22 journals including: the network for this study also meet Zeff's (1996) criteria for classification as accounting research journal's editorial staff and a majority of accounting academics among its authors.<sup>3</sup>

 $<sup>^{2}</sup>$  For example, the stated objective of JAL is the publication of 1) state-of-the-art review articles and 2) papers presented at the University of Florida research conferences.

<sup>&</sup>lt;sup>3</sup> Zeff (1996) identifies 77 accounting research journals based on these characteristics. Although numerous accounting journal networks exist, this paper focuses on one scholarly network of highly-related journals.

Although 0.5 percent of citation contribution is an arbitrary cutoff, it is indicative of a weak association with the journals already identified as closely associated. Hence, including these journals in the influence index analysis might unduly brand them as irrelevant when they may contribute substantively to other accounting journal networks. For example, *Issues in Accounting Education* was excluded due to low citation counts made to it by other accounting journals included in the network. However, the citations from *Issues in Accounting Education* to the *Journal of Accounting Education* reveal a specific network in which these journals demonstrate relatedness and influence. Thus, the inclusion of more specialized or niche accounting journals with low citation patterns in the current network would obscure their contributions to the discipline. Such journals are candidates for analysis within more clearly defined networks (e.g., behavioral-based or education-based journal networks) to more purposefully evaluate influence.

After identifying the journal network, manual citation counts were performed over a 7-year period, 2000–2006, for each issue of the 22 journals using both electronic library data resources (e.g., ABI, JSTOR) and hard copies. A tally was made of each article's citations to both network and non-network journals. The articles used in the citation counts did not include commentaries, discussions, reports, editorials, or book reviews. Special issues were included as they represent contributions to the pool of available knowledge capital. Moreover, the summation of seven years' counts moderates possible variations in citation patterns due to short-term fluctuations.

The dependency matrix (*D*) was constructed by dividing the number of citations that Journal A made to Journal B, by the total number of citations from all sources in Journal A. Table 2 lists the total references and cross references within the sample network. For example, *Accounting Auditing and Accountability Journal (AAAJ)* cited itself 809 times, cited *Accounting and Finance (AAF)* 19 times, and *Abacus (ABA)* 45 times. *AAAJ* made 2,974 citations to network journals, received 2081 cites from network journals (including self-cites), and made 12,649 total references. The dependency of *AAAJ* on *ABA* is calculated as 45 divided by the total number of *AAAJ*'s references (i.e., 12,649) which equals 0.00355. The measure of journal influence for each of the 22 journals was calculated solving the simultaneous equations using S-PLUS software.

## 6. Results and discussion

## 6.1. Descriptive statistics

Among the network journals, over 164,000 citations were tallied from 3617 articles as shown in Table 3. A research assistant was employed to perform an independent citation count of roughly 25 percent of the articles from each of the network journals. Separate *t*-tests were performed for each of the journals, the network citation count and the total citation count which indicated an immaterial error rate. Thus, the data were regarded as reliable for analysis. Roughly one-third of all citations tallied were to the network journals (Table 3, Column 3) with the remaining two-thirds referencing journals in other disciplines, accounting journals not included in the sample network, books, reports, professional standards, dissertations, and conference papers.

Other statistics in Table 3 include the percentage of citations that each journal made to network journals over 2000–2006 with self-cites included and excluded (Column 4). In the first sub-column of Column 4, *Auditing: A Journal of Practice & Theory (AUD)* made the greatest percentage of total citations to journals in the network (51%), followed by the *Review of Accounting Studies (RAS)* with 48 percent. Moreover, authors publishing in 15 of the 22 journals cited network journals at a rate of 30 percent or more. With self-cites excluded (Column 4, Sub-column 2), *AUD* cited other network journals most often (59%), followed by the *Journal of Accounting and Economics (JAE*, 53%), *Contemporary Accounting Research (CAR*, 50%) and *RAS* (50%).

Column 5 of Table 3 shows the greatest self-citation rates occur in *Accounting, Organizations, and Society (AOS,* 46%) followed by the *Journal of Accounting and Economics (JAE,* 36%), the *Journal of Accounting Research (JAR,* 31%), and the *Journal of the American Taxation Association* (JATA, 31%). The average network self-citation rate is 17 percent with nine of the 22 journals self-citing at a greater rate. Authors published in the *Journal of Accounting and Public Policy (JAPP)* cite the publishing journal the least (5%, 7%, 8% and 9% respectively).

Column 6 of Table 3 reports the number and percentage of citations that each journal received from other network journals with self-cites excluded. This percentage gives some indication of how influential each journal is to authors publishing in other network journals. A number of factors are likely to affect the extent to which a journal's paper is cited in the network such as research content or specialization, age of the journal, or quality of the research. However,

Journals	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	Total	All References
1. AAAJ	809	19	45	181	64	845	24	88	9	20	281	91	9	43	47	83	0	47	30	122	2	115	2974	12649
2. AAF	5	115	26	21	38	42	65	8	18	87	8	6	16	168	24	164	1	54	14	12	10	164	1066	4856
3. ABA	75	27	235	134	147	209	34	28	9	54	34	48	16	124	28	166	0	72	24	22	16	246	1748	6203
4. <i>ABR</i>	75	8	35	277	61	203	60	56	3	93	20	67	37	222	36	253	1	147	9	15	18	263	1959	6112
5. AHO	1	3	8	17	174	52	171	2	13	79	3	3	38	168	22	237	15	10	8	0	31	275	1330	3790
6. <i>AOS</i>	182	25	44	109	106	2098	56	34	95	75	207	71	18	76	45	413	12	31	199	167	5	491	4559	15438
7. AUD	5	10	16	14	104	109	631	4	47	176	3	3	41	223	36	475	3	14	1	1	9	585	2510	4895
8. BAR	170	19	45	218	77	404	36	180	16	49	61	71	14	145	32	186	0	147	84	110	2	271	2337	7083
9. BRIA	9	5	6	15	42	228	138	1	109	54	4	2	3	30	11	158	12	2	51	15	0	247	1142	3381
10. CAR	5	7	10	27	91	122	214	11	18	330	5	13	72	585	48	792	56	33	27	6	86	747	3305	6983
11. CPA	448	6	61	97	105	887	50	78	8	13	796	38	9	82	49	109	0	30	33	71	3	183	3156	15705
12. EAR	138	19	44	157	105	466	64	55	5	129	98	402	32	372	55	391	1	119	69	168	34	348	3271	9046
13. JAAF	1	6	2	10	83	15	57	3	1	143	1	8	88	349	37	505	8	40	5	0	54	377	1793	4327
14. JAE	1	6	10	13	98	43	27	3	0	196	0	1	57	1320	27	989	62	16	18	7	108	715	3717	8400
15. JAPP	29	12	21	54	106	86	100	12	2	90	8	25	42	297	176	372	10	48	1	6	27	340	1864	5313
16. JAR	0	1	6	11	90	27	67	4	5	225	1	6	40	828	28	965	21	17	15	3	92	672	3124	7426
17. JATA	0	3	1	0	17	18	7	0	9	25	1	1	1	95	14	100	194	12	2	1	5	116	622	2365
18. JBFA	21	38	26	154	82	28	51	79	1	200	3	24	87	579	37	644	5	491	3	10	55	501	3119	14585
19. JMAR	5	3	4	5	17	211	3	4	8	29	1	9	7	85	6	117	0	6	134	32	10	166	862	2614
20. MAR	100	5	11	27	23	800	5	37	14	14	29	48	3	25	6	71	0	12	192	491	4	102	2019	7288
21. RAS	0	1	7	12	49	2	15	2	1	160	0	3	58	413	19	489	2	21	7	2	117	397	1777	3681
22. TAR	2	4	8	15	233	164	186	4	26	325	0	8	75	1038	47	1295	58	36	59	10	168	1329	5090	11995
Total	2081	342	671	1568	1912	7059	2061	693	417	2566	1564	948	763	7267	830	8974	461	1405	985	1271	856	8650	53344	164135

 Table 2

 Total references and cross-references in the network of 22 accounting journals from 2000–2006

Note: Row totals are the number of citations made by each journal to the network journals (including self-cites). Column totals are the number of citations received by each journal from the network journals (including self-cites).

Table 3 Descriptive statistics of network citations counts over 2000–2006

Journals	(1) Research article	(2) Total number of cites made	(3) Total cites to the	number of le network	(4) Per- cites to	the network	(5) Number of Self-cites and % of network cites that are self cites		(6) Number and percentage <sup>a</sup> of cites <i>rec'd from</i> network	
				sen-ches		of sen-cites		chi-ches		(liet of self-cites)
AAAJ	204	12649	2974	2165	24%	25%	809	27%	2081	4.0%
AAF	144	4856	1066	951	22%	22%	115	11%	342	0.6%
ABA	122	6203	1748	1513	28%	29%	235	13%	671	1.3%
ABR	130	6112	1959	1682	32%	34%	277	14%	1568	3.0%
AHO	116	3790	1330	1156	35%	37%	174	13%	1912	3.6%
AOS	211	15438	4559	2461	30%	34%	2098	46%	7059	13.8%
AUD	130	4895	2510	1879	51%	59%	631	25%	2061	3.9%
BAR	129	7083	2337	2157	33%	34%	180	8%	693	1.3%
BRIA	71	3381	1142	1033	34%	35%	109	10%	417	0.8%
CAR	183	6983	3305	2975	47%	50%	330	10%	2566	4.8%
CPA	271	15705	3156	2360	20%	21%	796	25%	1564	3.0%
EAR	203	9046	3271	2869	36%	38%	402	12%	948	1.8%
JAAF	126	4327	1793	1705	41%	42%	88	5%	763	1.4%
JAE	175	8400	3717	2397	44%	53%	1320	36%	7267	14.0%
JAPP	143	5313	1864	1688	35%	36%	176	9%	830	1.6%
JAR	212	7426	3124	2159	42%	48%	965	31%	8974	17.1%
JATA	79	2365	622	428	26%	29%	194	31%	461	0.9%
JBFA	387	14585	3119	2628	21%	22%	491	16%	1405	2.7%
JMAR	55	2614	862	728	33%	35%	134	16%	985	1.9%
MAR	141	7288	2019	1528	28%	30%	491	24%	1271	2.4%
RAS	115	3681	1777	1660	48%	50%	117	7%	856	1.6%
TAR	270	11995	5090	3761	42%	48%	1329	26%	8650	16.6%
Total	3617	164,135	53,344	41,883			11,461		53,334	

<sup>a</sup> Calculation: Number of cites received/Total cites to network – self-cites. Example: AAAJ: (2081)/(53,344 – 809) = 4.0%

the statistic gives an indication of the journals most depended upon for knowledge capital over 2000–2006. Both the *Journal of Accounting Research (JAR)* and *The Accounting Review (TAR)* were cited at the greatest rate (17.1% and 16.6% respectively) in other network journals, followed by *JAE* (14.0%) and *AOS* (13.8%). The average percentage of cites received from the network is 4.6 percent with *CAR* (4.8%) joining the aforementioned journals as those cited in the network above the average.

#### 6.2. Network influence

The influence indices (*Inf*) of the 22 network journals were calculated using the structural influence metric (i.e., equation A2) excluding and including self-cites (Table 4). Not unexpectedly, the *Journal of Accounting Research* (*JAR*) and *The Accounting Review* (*TAR*) occupy the top-two most influential positions in the network over the years 2000–2006. These two journals are followed by the *Journal of Accounting and Economics* (*JAE*), *Accounting Organizations and Society* (*AOS*), and *Contemporary Accounting Research* (*CAR*) as the top-five contributors to the network over 2000–2006. These journals contributed direct and/or indirect knowledge capital that most influenced the research being published in this broad network. Furthermore, the top-five retain their ranking when self-citations by authors are included in the calculation.

Interestingly, journals that publish more specialized accounting research such as the AUD (7th), Journal of Management Accounting Research (JMAR, 13th) and Management Accounting Research (MAR, 15th) exhibit substantive influence in the network despite a more narrow focus. This suggests that specialized accounting research journals make important knowledge capital contributions and the diverse nature of a journal may not diminish its potential to impact the discipline.

The influence results also suggest that the number of articles published is not necessarily indicative of a journal's contribution. For example, over the 7-year period *JMAR* (#13 rank) published only 55 articles but is ranked more influential than journals publishing far more articles over the period, such as *Critical Perspectives on Accounting* (#17 rank) with 271 articles and the *European Accounting Review* (#18 rank) with 203 articles. This indicates that

Table 4 Influence indices (*Inf*) for the network of 22 accounting journals over 2000–2006

Rank	Journal	Inf self-cites excluded	Inf self-cites included and rank
1	Journal of Accounting Research	2.797	3.496
2	The Accounting Review	2.731	3.328
3	Journal of Accounting and Economics	2.412	3.091
4	Accounting Organizations and Society	1.794	2.150
5	Contemporary Accounting Research	1.539	1.698
6	Accounting Horizons	1.357	1.472 (7)
7	Auditing: A Journal of Practice & Theory	1.334	1.573 (6)
8	Accounting and Business Research	1.184	1.255
9	Review of Accounting Studies	1.182	1.253
10	Journal of Business Finance and Accounting	1.171	1.226 (11)
11	Accounting Auditing and Accountability Journal	1.155	1.246 (10)
12	Journal of Accounting Auditing and Finance	1.151	1.196 (14)
13	Journal of Management Accounting Research	1.141	1.220 (12)
14	Journal of Accounting and Public Policy	1.131	1.186 (15)
15	Management Accounting Research	1.110	1.201 (13)
16	Critical Perspectives on Accounting	1.094	1.162 (17)
17	European Accounting Review	1.084	1.142 (18)
18	Abacus	1.069	1.118 (19)
19	Journal of the American Taxation Association	1.068	1.177 (16)
20	British Accounting Review	1.067	1.100 (21)
21	Behavioral Research in Accounting	1.061	1.105 (20)
22	Accounting and Finance	1.037	1.066

the research published in *JMAR* was cited more by researchers publishing in higher-level journals. Indeed, 20 percent of the cites *JMAR* received from network journals were from *Accounting*, *Organizations and Society* (#4 rank) and six percent from *TAR* (#2 rank) with 55 percent of network citations from the top-five influential journals. Publishing quality research is one strategy to move a journal up the influence scale.

#### 6.3. Non-North American journal influence

The 22-journal network includes nine non-North American (non-NA) research journals that were analyzed as a geographic-specific network to illustrate knowledge capital flows and relational patterns among research published in these journals. Since U.S. accounting research traditionally follows a more quantitative, economics-based approach compared to research from the U.K. (Beattie, 2005), removing the U.S. journals will highlight the patterns of knowledge sharing among journals published outside the U.S.

The influence index calculations appear in Table 5. Accounting Organizations and Society (AOS) is the top-ranked non-NA journal in the full network and retains that influential position among researchers publishing in the other eight non-NA journals. When the citation effects of the North American journals are removed from the analysis, two changes occur in the ranking position of the non-NA journals: AAAJ moves from 4th to 3rd position and BAR moves

Table 5 Influence indices (Inf) of nine non-North American accounting journals over 2000–2006

Rank	Journal	Inf self-cites excluded
1	Accounting Organizations and Society	1.388
2	Accounting and Business Research	1.118
3	Accounting Auditing and Accountability Journals	1.101
4	Journal of Business Finance and Accounting	1.094
5	Management Accounting Research	1.071
6	European Accounting Review	1.055
7	British Accounting Review	1.045
8	Abacus	1.035
9	Accounting and Finance	1.018

from 8th to 7th. These changes suggest that AAAJ and BAR contribute greater knowledge capital within the non-NA network than within the full 22 journal network.

## 6.4. Network analysis

The network diagram in Fig. 1 is a visual depiction of *direct* citation patterns within the original 22-journal network. Network analysis is based on interactions among network members such as the exchange of information or knowledge capital. The matrix of citation senders and receivers in Table 2 represents the dyadic relations UCINET VI software (Borgatti et al., 2002) used to construct the diagram. Relationships among journals are represented by lines with line-point size indicating the relative frequency of direct exchanges. Self-cites are excluded and indirect relationships and the quality of citations are not taken into account. However, network analysis provides additional insight into the relational structure of the journal network by a visual illustration of knowledge capital flows that may reflect commonalities between journals such as research focus or methodology.

Fig. 1 is a two-dimensional representation of a three-dimensional image with line-point size serving as an indicator of the frequency of information exchanges (i.e., citations given and received). Two distinct journal groupings are evident in this presentation of the network. The first strongly linked group includes the *Journal of Accounting and Economics (JAE)*, the *Journal of Accounting Research (JAR)* and *The Accounting Review (TAR)*. These three journals are also closely linked, but to a lesser degree, with *Auditing: A Journal of Practice and Theory (AUD)*, *Contemporary Accounting Research (CAR)*, the *Journal of Business Finance and Accounting (JBFA)* and *Review of Accounting Studies (RAS)*. The *Journal of Accounting Auditing and Finance (JAAF)* and *Accounting Organizations and Society (AOS)* also demonstrate relatively strong ties with this group through *JAR* and *TAR*. The predominant makeup of the group consists of North American journals with two non-NA journals *JBFA* and *AOS* making significant contributions.

The second distinct grouping appears to include Accounting Organizations and Society (AOS), Critical Perspectives on Accounting (CPA), the Accounting Auditing and Accountability Journal (AAAJ), Management Accounting Research (MAR), European Accounting Review (EAR) and British Accounting Review (BAR). This journal grouping is star shaped and consists mainly of non-NA journals with AOS as the central node. The network approach stresses the idea that influence is inherently relational and a consequence of patterns of relations. If a member has more ties, that member has greater opportunities and is likely to be less dependent on other members (Hanneman, 2001). With



Fig. 1. Network analysis diagram of the accounting journal network for 2000-2006 (line-point size represents direct citations between journals).

respect to the second group, *AOS* is in an advantageous structural position as it exhibits strong relational ties with numerous other members. This suggests greater opportunities for knowledge sharing as connectedness is more extensive. The actual counts in Table 2 shows *AOS* receiving more citations from journals in the star pattern than it makes, indicating a greater dependence of the other journals on AOS for knowledge capital. Additionally, *AOS* demonstrates the strongest ties to journals in the North American grouping primarily via *TAR* and *JAR*.

## 6.5. Base discipline's influence

This paper also makes an initial exploration into the contribution of referent journals to current accounting research. Table 6 tabulates the knowledge inflows from other discipline journals to the top-five most influential accounting journals over 2000–2006. Due to the large number of citations outside of accounting, only those journals contributing 1 percent or more of the total referent citations are listed to present a fair representation of each discipline's contribution. The referent journals are loosely grouped for illustration purposes; however, the direct counts allow the reader to independently re-group and interpret the results.

The citations by accounting researchers to referent journals gives insight into the nature of the knowledge capital imported into the top-five accounting journals. Consequently, commonalities among accounting journals may be evaluated. For example, more than 55 percent of *JAR*'s and *JAE*'s referent cites are to finance journals compared to *AOS* with 6 percent. Whereas researchers publishing in *AOS* make 56 percent of referent cites to the management/org behavior literature, *JAR* cites this category at a 9 percent rate and *JAE* at a 7 percent rate.

Moreover, authors publishing in *JAE* cite the finance and economics disciplines at a combined rate of 92 percent of all referent citations. In comparison, *JAR* authors cite these disciplines at a combined rate of 88 percent, *TAR* at 76 percent, *CAR* at 75 percent and *AOS* at 21 percent.

## 7. Limitations and conclusion

Limitations to the research include the biases discussed (i.e., halo effect, editorial emphases, negative referencing) as well as the period of data collection. However, the elimination of self-cites in the analysis curtails the full impact of the halo effect and may also reduce the effect of perfunctory citing of the journal in which the author is publishing. It is likely that the removal of all self-cites from the analyses also eliminates some legitimate citations. Nonetheless, the methodology clearly depicts where researchers publishing in other network journals derive knowledge capital. Although the possibility exists that 'hot' topics may alter a journal's relative influence over short time periods, the seven-year collection period in this study is likely to control for some fluctuation.

The data collection period (2000–2006) limits interpretation of the findings apart from this time frame, but also represents an opportunity to extend the research. The influence indexing method provides a means to examine any number of journal networks to identify variations of influence that may occur with changes in editorial staff, journal mission, or the passage of time. Time period analyses of selected networks may reveal the evolutionary changes of journals in the network as research streams evolve and new methodologies emerge. Structural indexing has the potential to evaluate the contribution of specialized journals that may remain relatively obscure in peer-reviewed lists and rankings. Additionally, networks may be constructed that include influential journals from other disciplines to empirically assess the extent to which other fields contribute to accounting research as well as the degree to which accounting research influences other disciplines.

Measuring research productivity is an important part of assessing academic scholarship. However, measuring the quality aspect of productivity is difficult as no one metric indisputably captures all aspects of journal status or research quality. This study takes the user (or researcher) perspective to judge accounting journal influence using a network methodology that attempts to control for biases. The calculation of influence shows that journals may increase their ranking within a network not necessarily by publishing more manuscripts, but by publishing papers utilized by researchers publishing in higher ranking journals. While more articles do increase the knowledge pool which benefits the publishing journal when researchers cite that knowledge, quality or high value research is a significant driver of journal influence.

Furthermore, the value of research or the 'quality' of a journal may be better determined by evaluating networks of journals with specific commonalities rather than one network with a broad mix of accounting research. A comparison of this study's influence index results with those of a recent peer-ranking study (Ballas and Theoharakis, 2003) shows

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Table 6

Number of citations and percentages to referent journals by top-five accounting journals over 2000-2006

Discipline category	JAR	TAR	JAE	AOS	CAR
Finance					
Financial Analyst Journal	34	50	29	11	22
Financial Management	11	10	23	0	5
Journal of Applied Corp Finance	18	12	22	5	8
Journal of Banking and Finance	7	13	15	0	7
Journal of Finance	486	399	604	50	230
Journal of Financial Economics	378	272	578	18	185
Journal Financial and Quantitative Analysis	69	44	48	4	26
Journal of Financial Statement Analysis	16	19	12	1	4
Review of Financial Studies	63	55	73	4	45
Percentage	59%	47%	62%	6%	47%
Economics					
American Economic Review	72	75	97	62	47
Bell Journal of Economics	24	34	56	14	24
Econometrica	130	125	111	23	72
Journal of Econometrics	3	4	16	0	8
Journal of Economic Perspectives	17	21	19	10	5
Journal of Economic Theory	24	17	19	7	17
Journal of Law and Economics	26	25	51	11	16
Journal of Law, Economics and Organization	15	13	15	13	10
Journal of Political Economy	100	101	126	35	50
Journal of Public Economics	14	21	21	4	5
Quarterly Journal of Economics	59	57	66	23	35
Rand Journal of Economics	32	39	51	12	16
Review of Economic Studies	14	12	23	4	10
Percentage	29%	29%	30%	15%	28%
Management/Org Behavior					
Academy of Management Journal	11	19	5	160	21
Academy of Management Review	4	13	1	156	22
Administrative Science Quarterly	4	12	9	199	14
Decision Sciences	2	5	1	17	3
Journal of Business	66	73	129	17	31
Management Science	19	39	16	73	18
Org Behavior and Human Decision Process	42	91	3	86	47
Organization Sciences	1	2	0	38	2
Strategic Management Journal	6	5	3	77	10
Percentage	9%	14%	7%	56%	15%
Psychology/Sociology					
American Journal of Sociology	1	1	2	58	2
American Sociological Review	2	6	0	37	2
Cognitive Psychology	8	16	2	7	5
Journal Applied Psychology	3	22	0	85	20
Journal Experimental Psychology	3	20	3	25	7
Journal Personality and Social Psychology	19	71	6	59	59
Psychological Bulletin	14	46	4	56	16
Psychological Review	10	15	1	22	7
Percentage	3%	11%	1%	24%	10%
Total Citations to Discipline Journals	1827	1874	2260	1483	1133

that the top-five journals remain the same with a slight variation in positions. However, after the 7th position, the journal rankings between the two studies are quite disparate leaving questions as to the veracity of survey-based findings and the contribution of individual journals. The objectivity provided by citations allows the influence index to impartially attribute value to a journal and the research it publishes beyond the limitations of individual perception. When the index is used to evaluate distinctive networks of journals, unique contributions of individual publications may be more readily apparent and not as easily dismissed.

This paper also explores network links among accounting journals and relationships with other discipline journals they reference. It is anticipated that alternative measures of journal contribution will help create an enlarged view of accounting scholarship that considers trends and diversity in the discipline. The general tendency is for maturing markets such as accounting to become more differentiated and specialized (Zeff, 1996). This indicates the need to assess the value of accounting research using diverse but meaningful methods. As specialization continues, structural influence measures and network analysis can provide insights into changes in knowledge flows and identify emerging areas of knowledge capital. The belief that only a few journals in a field are indicative of academic excellence in an evolving and maturing discipline may be short-sighted. Research productivity measures may unduly restrict the advancement of the discipline by promoting sub-optimal criterion, and the extent to which capable researchers curtail diverse research agendas because of narrow benchmarks shackles the creative energy that is the basis of progress. Exploring growing diversity in the field using valid and meaningful measures of scholarly contribution will benefit both accounting research and the accounting discipline.

## Appendix A

Network of accounting research journals

Acronym	Journal name	Origin	Year
AAAJ	Accounting Auditing and Accountability J.	Australia	1988
AAF	Accounting and Finance	Australia	1975
ABA	Abacus	Australia	1965
ABR	Accounting and Business Research	UK	1970
AHO	Accounting Horizons	USA	1987
AOS	Accounting Organizations and Society	UK	1976
AUD	Auditing: A Journal of Practice & Theory	USA	1981
BAR	British Accounting Review	UK	1974
BRIA	Behavioral Research in Accounting	USA	1989
CAR	Contemporary Accounting Research	Canada	1984
CPA	Critical Perspectives on Accounting	Canada/USA	1990
EAR	European Accounting Review	Europe	1989
JAAF	Journal of Accounting Auditing and Finance	USA	1977
JAE	Journal of Accounting and Economics	USA	1979
JAPP	Journal of Accounting and Public Policy	USA	1982
JAR	Journal of Accounting Research	USA	1963
JATA	Journal of the American Taxation Association	USA	1979
JBFA	Journal of Business Finance and Accounting	UK	1969
JMAR	Journal of Management Accounting Research	USA	1989
MAR	Management Accounting Research	UK	1990
RAS	Review of Accounting Studies	USA	1996
TAR	The Accounting Review	USA	1926

# Appendix **B**

#### Direct dependencies

Direct dependencies within a small network are easily understood. Journal citations imply reliance upon the work of another, and thus implicitly represent a dependency. Citations are a direct indication of the influence of the journal containing the cited work, to the field of inquiry. Thus, if Journal A is cited more by B and C, than B or C are cited by A, then Journal A makes the greater contribution to the field and holds greater influence in the network. The member least dependent on the other holds more power or influence in the relationship (Emerson, 1962).

However, not all direct dependencies are equal. If Journal B is a member of a network, then a citing of B from the most influential member should contribute more heavily to B's overall importance than a citation from a relatively

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minor journal. Traditional citation counts treat all relationships in the network equally. This has the possible effect of overestimating any member's importance. Journals with fewer linkages in the network may be considered less important even though they contribute equally to the field. Salancik (1984) explains that "an individual in demand by numerous unimportant parties may be identified as unduly important while someone relied upon by only a few very significant others may be glossed over." By accounting for citation quality, the structural influence measure is more inclusive of factors related to a journal's influence in a field compared to measures bounded by citation quantity.

## Indirect dependencies

Interdependencies among journals must also be assessed to reliably evaluate journal influence. Indirect dependencies within nested relationships are not inconsequential. Discounting indirect dependencies may cause the influence of any member to be underestimated. For example, Journal A depends intensely on Journal B, but Journal B may be strongly dependent on Journal C. Thus, C indirectly influences A through B. If this indirect dependency is ignored, the actual influence of C in this three-member network is underestimated. Journal C should get credit for its indirect influence on Journal A. The exclusive counting of direct citations neglects indirect knowledge capital flows among journals.

#### Base-line journal value

Base-line value is a constant value of 1.0 included in the calculation for indexing purposes (Salancik, 1984). This assumes that no one journal is inherently more valuable than any other, and aids the calculation so that if a journal is not cited at all in the network, its overall influence value is the 1.0 base-line. Thus, 1.0 is the minimum influence of any journal with no upper bound on maximum influence.

#### Structural influence calculation

The index of structural influence is based on the work of Hubbell (1965). For simplicity, in a network of three journals A, B, and C the influence of each journal can be algebraically expressed:

$$Inf_{A} = ---- + D_{AB} * Inf_{B} + D_{AC} * Inf_{C} + Int_{A}$$

$$Inf_{B} = D_{BA} * Inf_{A} + ---- + D_{BC} * Inf_{C} + Int_{B}$$

$$Inf_{C} = D_{CA} * Inf_{A} + D_{CB} * Inf_{B} + ---- + Int_{C}$$
(A1)

where *Inf* is a measure of the overall influence of a journal, *D* is the extent to which the journal is depended upon by another journal, and *Int* is the intrinsic or base-line value of the journal. The dashed lines represent self-dependencies (self-citations) which are not included in the index calculation. For example, the influence of the *Accounting Auditing and Accountability Journal (AAAJ)* in the network (see Table 2) is not affected by the 809 citations that authors publishing in *AAAJ* made to *AAAJ* over the seven years. Inclusion may unduly inflate the journal's overall influence and would not reflect the true extent to which *AAAJ* influences the work of researchers publishing in the other network journals.

In the first equation, the overall influence of Journal A is a function of the dependency of Journal A on Journal B multiplied by the influence of Journal B, added to the dependency of Journal A on Journal C multiplied by the influence of Journal C, added to the base-line value of Journal A. The system of simultaneous linear equations is solved by substituting matrices and vectors<sup>4</sup> to arrive at:

$$Inf = [I - D]^{-1}Int \tag{A2}$$

In this solution, *Inf* is an N  $\times$  1 vector of overall influence scores for a network of N journals, *I* is an N  $\times$  N identity matrix, *D* is an N  $\times$  N dependency matrix, and *Int* is a vector of base-line value.

<sup>&</sup>lt;sup>4</sup> Using matrix algebra,  $Inf_i = [D]_{ij} * Inf_i + Int_i$  where  $[D]_{ij}$  is a transpose matrix of the dependencies of each *j* on each *i* and *Int\_i* is a vector of the base value (1.0) of each journal.  $[D]_{ij}$  is defined so that  $d_{ii} = 0$  for each journal (e.g., self-cites are excluded). After factoring terms and dividing to solve the equation:  $Inf_i = [I - D_{ij}] - 1$  Int<sub>i</sub> where *I* is an identity matrix with 1 in the diagonal cells and 0 elsewhere.

# Appendix C

Top 40 journals and ranking by an international panel of accounting academics (Ballas and Theoharakis, 2003) and network inclusion criteria

Rank	Journal	Included in	Elimination criteria			
		network analysis <sup>a</sup>	Publication objective <sup>b</sup>	<0.5% contribution to network		
1	The Accounting Review	Yes				
2	Journal of Accounting Research	Yes				
3	Journal of Accounting and Economics	Yes				
4	Accounting, Organizations and Society	Yes				
5	Contemporary Accounting Research	Yes				
6	Accounting Horizons	Yes				
7	Auditing: A Journal of Practice and Theory	Yes				
8	Journal of Accounting, Auditing, and Finance	Yes				
9	Abacus	Yes				
10	Journal of Accounting and Public Policy	Yes				
11	Accounting and Business Research	Yes				
12	Journal of Management Accounting Research	Yes				
13	Review of Accounting Studies	Yes				
14	Behavioral Research in Accounting	Yes				
15	Journal of the American Taxation Association	Yes				
16	Accounting, Auditing, and Accountability J.	Yes				
17	European Accounting Review	Yes				
18	Journal of Accounting Literature	No				
19	Journal of Business, Finance and Accounting	Yes				
20	Critical Perspectives on Accounting	Yes				
21	Issues in Accounting Education	No				
22	Journal of Accountancy	No				
23	British Accounting Review	Yes				
24	Management Accounting Research	Yes				
25	Harvard Business Review	No				
26	Advances in Accounting	No				
27	Accounting and Finance	Yes				
28	National Tax Journal	No				
29	International Journal of Accounting	No				
30	Journal of Accounting Education	No				
31	Accounting Education	No				
32	Accounting Historians Journal	No				
33	Journal of Taxation	No	1			
34	Journal of Cost Management	No				
35	Advances in Management Accounting	No				
36	Advances in Taxation	No				
37	Journal of International Accounting, Auditing and Taxation	No	1			
38	Advances in International Accounting	No				
39	Advances in Accounting Information Systems	No				
40	Accounting Forum	No	1			

<sup>a</sup> Inclusion is based on both publication objectives *and* greater than 0.5 percent contribution to total citations of journals in the network.

<sup>b</sup> Each journal was reviewed to determine if the *major objective* of the journal is the publication of original, theory driven, peer-reviewed accounting research.

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