HAS THE EMERGENCE OF THE SPECIALIZED JOURNALS AFFECTED MANAGEMENT ACCOUNTING RESEARCH PARADIGMS?

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ABSTRACT

The purpose of this study is to investigate whether the emergence of specialized journals has affected management accounting research paradigms. Articles published in eight leading accounting journals from 1991 to 2000 are analyzed using Shields' (1997) classification schemes. The study reports two major findings. One is that the overall percentage of management accounting research published in five non-specialized accounting journals has remained relatively constant since the establishment of three specialized journals oriented to management accounting research. The other is that the editorial boards of specialized journals appear to have broader interests in research Topics, to be more flexible with regard to research Methods, and are more willing to accept manuscripts adopting various Theories. Overall, the results of this study support that the emergence of management accounting research journals impacted research paradigms gradually during the 1990s.

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1. INTRODUCTION

This paper is motivated by consistent interest within the academic community during the past two decades in revitalizing management accounting research. Among all the efforts directed at achieving this objective, the most significant is the establishment of management accounting-oriented academic journals, namely, *Advances in Management Accounting* (*AIMA*) in 1992, *Journal of Management Accounting Research* (*JMAR*) in 1989, and *Management Accounting Research* (*MAR*) in 1990. These journals provide a crucial link between academic research and business practices that allows researchers to propose and observe how management accounting techniques are implemented in organizations. These journals also render an interactive platform for academicians and practitioners to dissimilate findings and exchange experience on implementing management accounting tools and techniques in the business environment. As Professor Epstein (1992), the editor of *AIMA*, explicitly stated in the inauguration issue of *AIMA*:

> … *Advances in Management Accounting* is an attempt to bridge the gap between research and practice. It will include papers on any area of management accounting, as broadly defined. Acceptable research methods include survey research, field tests, corporate case studies and modeling along with many others. Papers may range from empirical to analytical, from practice-based to the development of new techniques …

To enhance our understanding of the impacts of these specialized journals on management accounting research, this paper attempts to address two research questions. One is to investigate whether the emergence of three management accounting-specialized journals has affected management accounting research paradigms. The other is to examine whether the establishment of management accounting-specialized journals did, indeed, enhance the diversity and quality of management accounting research from 1991 to 2000.

For the purpose of this study, we adopted the research framework developed by Shields (1997). In his study, Shields (1997) classified management accounting research articles by *Topics*, *Methods*, *Settings*, *Theories*, and *Results*. *Topics* refers to a broad classification of the subject matter, such as Cost and Management Accounting, Management Information Systems, and so forth. *Methods* refers to the research method used, such as whether the study used analytic, normative, laboratory experimental, and survey or case/field study. *Settings*, on the other hand, refers to the background of the study, specifically whether a single industry, such as Manufacturing, was the backdrop of the study. *Theories* refers to the underlying disciplines upon

which the management accounting study was based. *Results* refers to the primary findings from the management accounting study.[1]

This study advances to the findings of Shields (1997) on several fronts. First, the study provides a more complete analysis by broadening the scopes of the Shields' (1997) study. In addition to the journals included in Shields (1997), we incorporate *AIMA, MAR*, and expand coverage of *Accounting, Organizations and Society* (*AOS*) in the data set.[2] Second, the study compares and contrasts the articles published in leading management accounting-specialized journals with leading non-management accounting-specialized journals to discern whether they reflect different interests. Finally, as stated in the editorial policies, *MAR* and *AOS* are identified as accounting journals with an international focus. The other six journals, on the other hand, appear to be more in line with research thoughts in North America. Therefore, we dichotomize the journals into international and North American categories in order to determine whether there are significant differences in what types of management accounting research have been published in these journals. Such a comparison provides useful insights as to whether the divergent foci of editorial policies would lead to significant differences in what types of management accounting research have been published in these journals.

Articles published in eight leading accounting journals, *The Accounting Review* (*TAR*), *Journal of Accounting Research* (*JAR*), *Journal of Accounting and Economics* (*JAE*), *Contemporary Accounting Research* (*CAR*), *AOS*, *AIMA*, *JMAR*, and *MAR*, from 1991 to 2000, are included in the data analyses. The selection of journals is based upon the following criteria. First, in order to generalize the results of this study to management accounting research field as a whole, we decide to broaden the scope of the data set by including all major journals that have published management accounting research. Second, in order to explore the effect of management accounting-specialized journals on management accounting research, this study compares and contrasts the articles published in specialized and non-specialized accounting journals. To accomplish this research objective, inclusion of eight journals in this study will yield meaningful insights to this inquiry. Finally, in order to probe whether the editorial foci of journals lead to different interests in publishing management accounting research, this study evaluates articles published in the data set to find out whether there are different research paradigms between North American and international journals. According to the editorial policies of all eight academic journals, we are able to classify these journals into two categories.

For the purpose of this study, *AIMA*, *JMAR*, and *MAR* are classified as management accounting-specialized journals, while the other five influential

journals are non-management accounting-specialized journals. Moreover, *AOS* and *MAR* are classified as international journals,[3] while the other six are North American journals according to their editorial policies. Although possible arguments exist that our included journal list is somewhat incomplete and that the classifications of the journals/articles may not fully reflect the status of management accounting research, the inclusion of journals and the classification schemes used in this study do provide a workable framework for us to address our research questions.

To examine whether the emergence of specialized journals has affected management accounting research paradigms, we first divided the studied period (1991–2000) into two halves, 1991–1995 and 1996–2000. Moreover, we investigate articles published in the 1990s by separating them by (1) management accounting-specialized versus non-management accounting-specialized journals, and (2) North American focus or international focus. By applying statistical analyses to the publications in studied journals using the Shields' (1997) research framework, the results of the study provide insights as to whether (1) there is difference on the publication rate of management accounting research between the 1991–1995 and 1996–2000, (2) the establishment of *AIMA*, *JMAR*, and *MAR* affects, or offers a different, management accounting research paradigms from non-management accounting-specialized journals (*TAR*, *JAR*, *JAE*, *CAR*, and *AOS*), and (3) the different editorial foci between North American and international journals have led to divergent interests or preferences as to what studies are published in these leading academic publications.

There are several findings in this study. First, the overall quantity of publications of management accounting research in the five non-management accounting-specialized journals remains stable from 1991 to 2000. Second, there are significant differences in the research *Settings* and the *Theories* adopted among published articles between the two sub-periods. Third, in a comparison between specialized and non-specialized management accounting journals, we find that there are significant differences regarding research *Topics*, *Methods* and *Theories*. However, all journals published were conducted in similar research *Settings*, which are dominated by either a single industry/activity or a generic setting. Fourth, when the articles published in the North American journals are compared to those in the international journals, this study reveals that there are significant differences between the journals categories on research *Topics*, *Methods*, *Settings* and *Theories*. Overall, the results of this study appear to indicate that the emergence of management accounting research journals gradually impacted the research paradigms during the 1990s.

The remainder of this paper is organized as follows. Section 2 describes the data set and the collection processes of this study. Section 3 presents the overall trend of management accounting research for the selected accounting journals during the 1990s. Then, we compare and contrast the management accounting publications by dividing (1) the studied period into two sub-periods (1991–1995 and 1996–2000), and (2) the non-specialized journals (*TAR*, *JAR*, *JAE*, *CAR*, and *AOS*) from the specialized journals (*AIMA*, *MAR*, and *JMAR*), and (3) the North American (*TAR*, *JAR*, *JAE*, *CAR*, *AIMA*, and *JMAR*) versus the international journals (*AOS* and *MAR*). Finally, in Section 4, the study summarizes the research findings and discusses their implications to management accounting research.

2. DATA SET AND COLLECTION PROCESSES

Eight leading accounting journals have been included in this study. The following table presents information as to the nature (management accounting-specialized versus non-management accounting-specialized journals), the affiliation (professional organizations, higher education institutions, or independent), the origins (USA, Canada, or UK), and the editorial foci of the journals (North American or international).

Nature	Affiliation	Origins	Editorial Focus
Management accounting-specialized journals			
Advances in Management Accounting	Independent	USA	North America
Journal of Management Accounting Research	AAA	USA	North America
Management Accounting Research	CIMA	UK	International
Non-management accounting-specialized journals			
The Accounting Review	AAA	USA	North America
Journal of Accounting Research	University of Chicago	USA	North America
Journal of Accounting and Economics	University of Rochester	USA	North America
Contemporary Accounting Research	CAAA	Canada	North America
Accounting, Organization and Society	Oxford	UK	International

Management accounting articles published in the above journals from 1991 to 2000 are included in the data set. To facilitate data analyses, we have modified the Shields' classification scheme slightly.[4] Exhibit 1 illustrates and compares the Shields' (1997) original scheme to the modified schemes used in the study. Similar to the Shields' (1997) study, we exclude announcements,

Exhibit 1. Taxonomy of Management Accounting Research by Shields (1997) and its Adaptation for this Study.

Panel A: Shields (1997) taxonomy	Panel B: Taxonomy as modified for this study
Attribute 1: Topics of MAR Papers	
A. Management control systems	Management control systems
Incentives	Management control systems
Budgets or budgeting	Management control systems
Performance measurement	Management control systems
Transfer pricing	Management control systems
Responsibility accounting	Management control systems
Internal control	Management control systems
B. Cost accounting	Cost accounting
Cost accounting overall	Cost accounting
Cost allocation	Cost accounting
Activity-based costing (ABC)	Cost accounting
Product costing	Cost accounting
Cost variances	Cost accounting
C. Cost management	Cost management
Quality	Cost management
Just in time (JIT)	Cost management
Use of costs for decision making	Cost management
Benchmarking	Cost management
History	Cost management
D. Cost drivers	Cost drivers
E. Management accounting, information, and systems	Management accounting, information, and systems
F. Research methods and theories	Research methods and theories
G. Capital budgeting and investment decisions	Capital budgeting and investment decisions
	Cover more than one topic
Attribute 2: Methods used in MAR Papers	
A. Analytic	Analytic
B. Archival	Archival
C. Case/field study	Case/field study
D. Laboratory experimentation	Laboratory experiment
E. Behavioral simulation	Behavioral simulation
F. Literature review	Literature review
	Normative
G. Survey	Survey
H. Multiple research method	Multiple research methods
Attribute 3: Settings of MAR Papers	
A. Generic (abstract/stylized/simplified)	Generic
B. Government, not-for-profit, hospitals	Governmental or not-for-profit organizations
C. Single industry or activity	Single industry or activities
Manufacturing	Single industry or activities
Marketing and retailing	Single industry or activities
R&D	Single industry or activities
Transportation	Single industry or activities
Other	Single industry or activities
D. Multiple industries or activities	Multiple industries or activities
E. Service industry	Service industry
F. Inter-organizational	Inter-organizational
G. No or another setting	Other settings

Exhibit 1. (*Continued*)

Panel A: Shields (1997) taxonomy	Panel B: Taxonomy as modified for this study
Attribute 4: Theories Underlying MAR Papers	
A. Economics	Economics
B. Organizational behavior	Organization behavior
C. Production/operations management	Production/operations management
D. Psychology	Psychology
E. Sociology	Sociology
F. Strategic management	Strategic management
G. Mix of disciplines	Using multiple theories
	History
	No theory

Note: Shields' (1997) classification system does not include "Cover more than one topic" in the "Topic" attribute, "Normative" in the "Methods" attribute, or "History" and "No Theory" in the "Theories" attribute. A variety of combinations of methods (such as Analytic and Archival, Survey and Case/Field Study) or a variety of combinations of disciplines (such as Economics and Organizational Behavior, Economics and Psychology), as identified by Shields (1997), are not tabulated here.

commentaries or discussions, book reviews, and replies and corrigendum published in these seven journals from the data set.

There are three stages in the data collection process. In the first stage, management accounting articles published in five non-management accounting-specialized journals are identified. To limit the discrepancies in our classifications and that of Shields (*Topics*, *Methods*, *Settings* and *Theories*), one author of this study classified all management accounting articles covered by Shields (1997) and then compared our classifications with those reported in Shields' (1997) study. By reconciling the differences between Shields' and our classifications, the author gained a better understanding of how management accounting research articles were classified originally in Shields' (1997) study. In the second stage, management accounting publications not included in Shields (1997) study are identified and classified, using the same classification scheme developed in the first stage. Finally, the other author of this study independently repeated the exact same procedures described above for all the published management accounting articles in all eight journals from 1991 to 2000.

3. DATA ANALYSES

3.1. Overall Trend of Management Accounting Research

As discussed in the introduction section of this study, *TAR*, *JAR*, *JAE*, *CAR*, and *AOS* are treated as non-management accounting-specialized

journals, while *AIMA*, *JMAR*, and *MAR* are categorized as management accounting-specialized journals. Since papers appearing in specialized journals all relate to management accounting, the analysis of overall trend in management accounting research is applicable only to the five non-specialized journals. In this section, we examine whether there is a temporal trend in the number of management accounting research articles published from 1991 to 2000, based on the results of regression analyses.

Referring to Table 1 and Panel A of Fig. 1, it appears that there is an increase in the number of management accounting articles published in the five non-specialized journals. The regression coefficient on the year variable is significant at a 10 percent level, which indicates that management accounting publication rates increased approximately 0.62 percent annually over the decade. However, when the journals are divided into two groups by the editorial focus of the journals (North American versus international); we find that the increasing trend may be driven by the *AOS* special issues devoted to management accounting research. Since the publication of management accounting research in *AOS* is volatile, neither the intercept nor the slope of the regression line is significantly different from zero, although there being an evident upward trend of publications by visual inspection (Panel B of Fig. 1). To discern this observation, we focus on non-specialized journals published in North America. Referring to Panel C of Fig. 1, it appears that the numbers of publications in management accounting research have been rather stable from 1991 to 2000. On average, 10.8 percent of the papers published in *TAR*, *JAR*, *JAE*, and *CAR* were about management accounting research. More importantly, there is no significant temporal change in the publication rates of management accounting papers in these four journals, as illustrated in the slope of regression line, which is close to zero (−0.10%). In conclusion, this finding does not yield supporting evidence that there was a significant increase in interest in publishing management accounting research in the 1990s despite the important evolution that occurred in management accounting during the studied period.[5]

In Table 2, the study presents the frequency distribution of published articles by *Topics*, *Methods*, *Settings* and *Theories*. Of the total 580 management accounting research papers published in the eight leading journals, 240 (41.4%) of the articles were on management control systems, followed by management accounting and information systems with 107 (18.4%) articles. While the management control system topic has been regarded as the mainstream management accounting issue after the 1980s (Anthony, 2003; Birnberg, 1999), the management accounting and information systems topic has gained popularity in recent years. In addition, the more traditional

Table 1. Publication of Management Accounting Papers in the Leading Accounting Journals.

	1991		1992		1993		1994		1995		1996		1997		1998		1999		2000		ALL	
	N	%	*N*	%	*N*	%	*N*	%	*N*	%	*N*	%	*N*	%	*N*	%	*N*	%	*N*	%	*N*	%
Panel A: Non-specialized journals																						
A1. International journals																						
AOS	12	29.3	6	14.6	5	13.2	9	24.3	9	28.1	8	23.5	8	20.0	4	10.0	21	63.6	16	43.2	98	26.3
A2. North American journals																						
CAR	0	0.0	3	13.0	3	11.5	1	2.7	0	0.0	3	12.0	1	4.3	2	10.5	1	4.2	1	4.3	15	6.0
JAE	0	0.0	1	5.3	2	16.7	2	6.7	4	15.4	3	8.3	7	25.9	4	28.6	2	5.0	0	0.0	25	10.5
JAR	2	6.7	2	8.3	2	10.0	0	0.0	9	34.6	0	0.0	3	12.5	3	11.1	3	10.0	2	10.5	26	10.5
TAR	4	8.9	9	20.5	10	18.9	7	19.4	3	10.3	4	19.0	3	11.1	2	8.3	2	9.1	4	21.1	48	15.0
Subtotal for A2	6	5.2	15	13.6	17	15.3	10	8.0	16	15.4	10	9.3	14	13.9	11	13.1	8	6.9	7	0.1	114	10.8
Subtotal for A1 & A2	18	11.5	21	13.9	22	14.8	19	11.7	25	18.4	18	12.7	22	15.6	15	12.1	29	19.5	23	19.3	212	14.8
Panel B: Specialized journals																						
AIMA	N.A.		12		13		11		11		11		N.A.		10		25		9		102	
JMAR	12		10		15		7		5		8		9		13		5		5		89	
MAR	13		13		12		17		21		20		21		20		18		22		177	
Subtotal for B	25		35		40		35		37		39		30		43		48		36		368	
Panel C: All the journals																						
	43		56		62		54		62		57		52		58		77		59		580	

Note: AOS = Accounting, Organizations and Society; *CAR = Contemporary Accounting Research*; *JAE = Journal of Accounting and Economics*; *JAR = Journal of Accounting Research*; *TAR = The Accounting Review*; *AIMA = Advances in Management Accounting*; *JMAR = Journal of Management Accounting Research*; *MAR = Management Accounting Research*. The numbers under the column "*N*" are the numbers of management accounting papers published, and those under the "%" column are the percentage of management accounting papers over total papers published in the non-specialized journals.

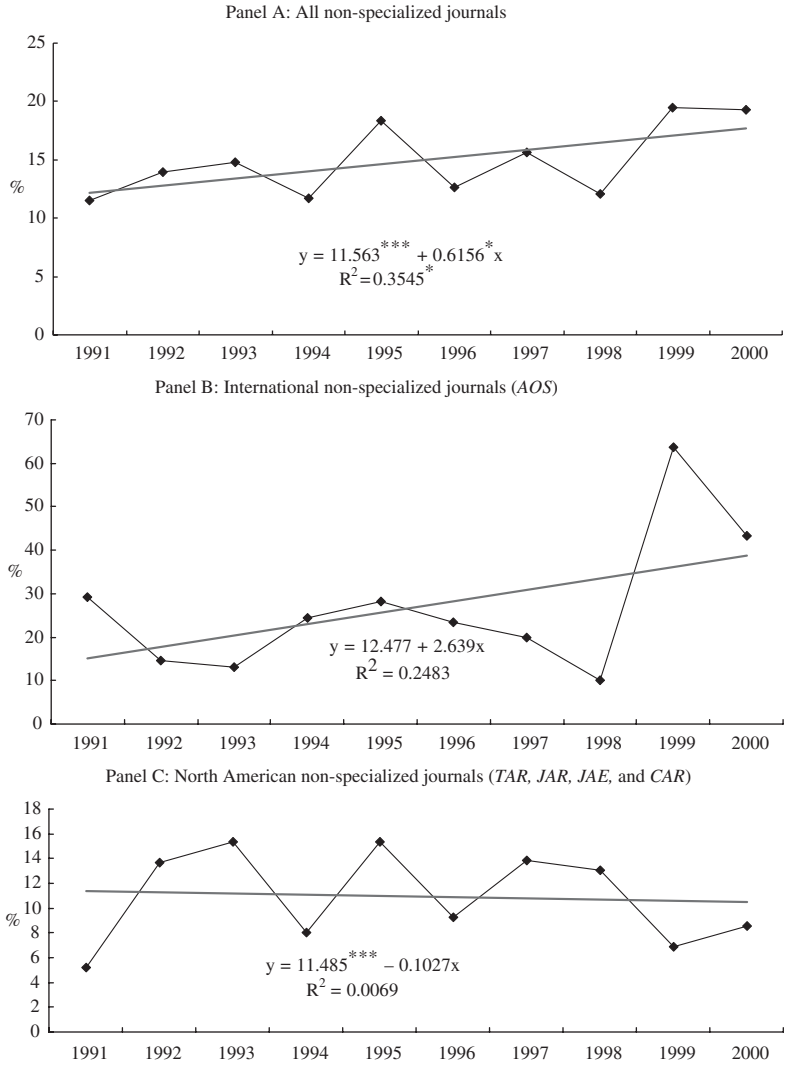

Fig. 1. Publication Rates for Management Accounting Papers in Non-specialized Journals. *Note:* The dependent variable for the regression is the percentage of management accounting papers published in the journals of interest, and independent variable is the year variable coded from 1 to 10. The*** and* for the coefficients indicate that the coefficients are significant at 1% and 10% level, respectively. Also,* for the R^2 indicates the model is significant at 10% level in the *F*-test.

Table 2. Distribution of Articles by Classifications.

	N	%
Panel A: Topics		
Management control systems	240	41.4
Cost accounting	82	14.1
Cost management	63	10.9
Cost drivers	19	3.3
Management accounting, information, and systems	107	18.4
Research methods and theories	33	5.7
Capital budgeting and investment decisions	24	4.1
Cover more than one topic	12	2.1
Total	580	100.0
Panel B: Methods		
Analytic	100	17.2
Survey	121	20.9
Archival	56	9.7
Laboratory experimentation	62	10.7
Literature review	54	9.3
Case/Field study	117	20.2
Behavioral simulation	4	0.7
Normative	46	7.9
Multiple research methods	20	3.4
Total	580	100.0
Panel C: Settings		
Single industry or activities	202	34.8
Multiple industries or activities	45	7.8
Governmental or not-for-profit organizations	45	7.8
Generic (abstract/stylized/simplified)	169	29.1
Service industry	22	3.8
Inter-organizational	9	25.7
Other settings	88	15.2
Total	580	100.0
Panel D: Theories		
Economics	232	40.0
Organizational behavior	51	8.8
Psychology	42	7.2
Production/operations management	39	6.7
Sociology	51	8.8
Strategic management	37	6.4
History	17	2.9
Using multiple theories	46	7.9
No theory	65	11.2
Total	580	100.0

Note: See Exhibit 1 for the taxonomy of management accounting research by Shields (1997) and its adaptation for this paper.

management accounting topics that address measurement issues, such as cost accounting and cost management, continue receiving significant attention by journal editors. These findings appear to support Shields' (1997) claim that there was an increase in the diversity of management accounting research published during the 1990s.

As to research *Methods*, surveys (121 articles, 20.9%) and case/field studies (117 articles, 20.2%) appear to be the most common research methods adopted by researchers. While it is not surprising that surveys are the most commonly used research method, case/field studies have become one of the primary methods employed in management accounting research since the late 1990s. The rising number of articles using this method and published in leading journals indicates that researchers who are in favor of this kind of research method are starting to generate positive outcomes after calls made by Kaplan (1984, 1986).

Regarding research *Settings*, accounting researchers seem to be in favor of conducting their studies in single-industry or single-activity settings. More than one-third of published articles (202 articles, 34.8%) investigate issues under this type of setting. Generic settings are also quite popular. From 1991 to 2000, more than one quarter of published articles (169 articles, 29.1%) were conducted in generic settings. While the service industry has become more important in recent years, there is no evidence indicating that researchers were paying more attention to the service industry in the 1990s. Only a limited number of management accounting studies were conducted in this setting (22 articles, 3.8%). Most management accounting researchers still focused on the manufacturing sector. Surprisingly, however, researchers have become more interested in management accounting research issues in government or not-for-profit organizations (45 articles, 7.8%).

Similar to academic research in other disciplines, accounting research is expected to be imbedded in solid theoretical frameworks. For example, financial accounting research is normally grounded in *Economics*. Relative to financial accounting, management accounting research tends to base its studies on a broader spectrum of theories developed in other disciplines, such as *Organizational Behavior*, *Psychology*, and *Production and Operations Management*. Interestingly, we find that *Economics* is the most dominant theory applied to management accounting research as well. Between 1991 and 2000, 232 articles (40.0%) published management accounting papers used *Economics* as the underlying theory. To a much lesser extent, the second major underlying disciplines used in management accounting are *Sociology* (51 articles, 8.8%) and *Organizational Behavior* (51 articles, 8.8%). The results of the study also show that 46 (7.9%) published articles used

multiple theories to support their studies, while 65 (11.2%) papers did not appeal to any apparent theory to support their work. Examining the published management accounting research, the results of this study indicate that, gauged by research theories adopted, there is diversity and quality of management accounting research.

3.2. Management Accounting Research in 1991–1995 and 1996–2000

In this section, the study compares and contrasts the frequency of publication of management accounting research. If the emergence of the specialized journals does affect management accounting research paradigms, or present opportunities for a new paradigm to emerge, we should expect to find some indications of changes in research *Topics*, *Methods*, *Settings* and *Theories* among management accounting articles published over time. To discern this issue, we divide the studied period into two sub-periods, 1991–1995 and 1996–2000, as shown in the last two columns of Table 3. According to the framework developed by Shields (1997), we classified published articles by the attributes of *Topics*, *Methods*, *Settings* and *Theories*.

The null hypothesis indicates that, if the frequency of publication is independent of the categories formed by sub-periods and the attributes of research, there will be an equal proportion of cases in each category, and the expected frequency in category falling into the *i*th row and *j*th column can be calculated as

$$E_{ij} = \frac{R_i C_j}{N} \tag{1}$$

where R_i and C_j, are the totals in the *i*th row and *j*th column, respectively, and N the total number of all publications in the sample.

To examine whether a significant difference exists between an actual frequency of publication in each category and an expected number of publications based upon the null hypothesis, we employ the following χ^2 statistics:

$$\chi^2 = \sum_{i=1}^{r} \sum_{j=1}^{c} \frac{(A_{ij} - E_{ij})^2}{E_{ij}} \tag{2}$$

where A_{ij} is the actual frequency of publication in category *ij*, and E_{ij} is the expected frequency of publication in category *ij* defined in (1).

The statistics in Eq. (2) follow the χ^2 distribution with degrees of freedom d.f. $= (r-1)(c-1)$. If the observed and expected frequencies of the

publication in the category are close, the statistics in Eq. (2) will be small. On the other hand, if the divergence is sufficiently large, we can reject the null hypothesis that the frequency of publication is independent of the categories formed by sub-periods and the attributes of research.[6]

Examining the management accounting papers published in the two sub-periods, we find that the numbers of publications in these two periods are very similar. A total of 277 (47.8%) articles appeared in the first five-year period, while 303 (52.2%) articles were published during the second five-year period. This observation appears to indicate that the quantity of management accounting research did not change significantly over these two sub-periods after the establishment of specialized journals.

Using Shields' (1997) classification scheme, Panel A of Table 3 reports the frequency of publication of the two sub-periods by *Topics*. The distributions among research *Topics* in these two periods are also quite similar. For both periods, management control systems (116 articles or 41.9%, and 124 articles or 40.9%, respectively) was the most popular research topic, followed by the management accounting and information systems (42 articles or 15.2%, and 65 articles or 21.5%, respectively). One possible explanation for its popularity of published studies in management accounting information systems may be caused by the rapid developments in information technology in the 1990s. For instance, many Fortune 500 firms had begun to adopt and implement information technology that allows them to integrate management accounting systems within and among organizations. By establishing supply chains, companies also are building up their platform within their management accounting systems so that their suppliers, customers, and banks can effectively and efficiently connect to one another. Such rapid changes in information technology undoubtedly provide fertile grounds for cultivating new management accounting practices, thus create abundant opportunities for academic research. However, the result of χ^2 statistics reveals that the difference between the two sub-periods as to the *Topics* distribution is not significant ($\chi^2 = 10.26$, $p = 0.175$, d.f. $= 7$).

Panel B of Table 3 also indicates that there were no major changes as to the research *Methods* in management accounting research. In the sub-periods, surveys (58 articles or 20.9%, and 63 articles or 20.8%, respectively), analytic approaches (56 articles or 20.2%, and 44 articles or 14.5%, respectively), and case/field studies (52 articles or 18.8%, and 65 articles or 21.5%, respectively) appear to have been the most popular research methods identified. Based on the reported χ^2 statistics, the difference between the two sub-periods regarding research methods adopted is not significant either ($\chi^2 = 11.88$, $p = 0.157$, d.f. $= 8$).

However, the result reports that there was a significant shift in research *Settings* (Panel C of Table 3) from the first half to the second half of the 1990s. Although single industry and generic settings continued to dominate managerial accounting research, there was a significant increase in the number of studies conducted in government or not-for-profit organizations in the second half of the 1990s. When the research *Settings* of the papers published in the two sub-periods are compared, the difference is statistically significant ($\chi^2 = 13.41$, $p = 0.037$, d.f. $= 6$).

Examining the *Theories* applied in the published management accounting studies (Panel D of Table 3), the study finds that *Economics* dominated the first half of the decade (108 articles or 39.0%) and gained additional momentum during the second half (124 articles or 40.9%) of the studied period. Noticeably, *Sociology* and *Strategy Management* received significantly more attention during the second sub-period of 1990s. The other important observation is that journals appear to have been placing more emphasis on whether a researcher provides a theoretical foundation to support his/her article. As the results indicate, there was a significant decrease in the number of papers without theoretical support published during the studied period. The number of published articles in the "no theory" category dropped from 41 (14.8%) to 24 (7.9%) articles. Our conjecture about this evidence is that management accounting researchers may have gradually focused more on theoretical development in order to make their papers more publishable in leading journals. Overall, the difference in terms of *Theories* adopted between the 1991–1995 period and the 1996–2000 period is significant ($\chi^2 = 21.44$, $p = 0.006$, d.f. $= 8$).

In summary, the results of this study provide some evidence to support Shields' (1997) statements. That is, the emergence of journals specializing in management accounting may have affected the diversity and quality of published research in management accounting. However, there is no indication that quantity of management accounting research increased during the 1990s.

3.3. Non-Specialized Journals Versus Specialized Journals

To explore the effects of management accounting-specialized journals on management accounting research, the study compares and contrasts the articles published in specialized and non-specialized accounting journals. A tally of the number of articles published from 1991 to 2000 by the two types of journals indicates that 212 (36.6%) appeared in non-specialized journals and 368 (63.4%) were printed in specialized journals. Panel A of Table 4

Table 3. 1991–1995 Versus 1996–2000.

	1991–1995			1996–2000		
	N	%	% Dev.	*N*	%	% Dev.
Panel A: Topics: Difference (χ^2) = 10.26, $p = 0.175$, d.f. = 7						
Management control systems	116	41.9	1.2	124	40.9	−1.1
Cost accounting	41	14.8	4.7	41	13.5	−4.3
Cost management	29	10.5	−3.6	34	11.2	3.3
Cost drivers	14	5.1	54.3	5	1.7	−49.6
Management accounting, information, and systems	42	15.2	−17.8	65	21.5	16.3
Research methods and theories	16	5.8	1.5	17	5.6	−1.4
Capital budgeting and investment decisions	11	4.0	−4.0	13	4.3	3.7
Cover more than one topic	8	2.9	39.6	4	1.3	−36.2
Total	277			303		
Panel B: Methods: Difference (χ^2) = 11.88, $p = 0.157$, d.f. = 8						
Analytic	56	20.2	17.3	44	14.5	−15.8
Survey	58	20.9	0.4	63	20.8	−0.3
Archival	22	7.9	−17.7	34	11.2	16.2
Laboratory experimentation	24	8.7	−18.9	38	12.5	17.3
Literature review	27	9.7	4.7	27	8.9	−4.3
Case/Field study	52	18.8	−6.9	65	21.5	6.3
Behavioral simulation	4	1.4	109.4	0	0.0	−100
Normative	23	8.3	4.7	23	7.6	−4.3
Multiple research methods	11	4.0	15.2	9	3.0	−13.9
Total	277			303		
Panel C: Settings: Difference (χ^2) = 13.41, $p = 0.037$, d.f. = 6						
Single industry or activities	108	39.0	11.9	94	31.0	−10.9
Multiple industries or activities	17	6.1	−20.9	28	9.2	19.1
Governmental or not-for-profit organizations	13	4.7	−39.5	32	10.6	36.1
Generic (abstract/stylized/ simplified)	84	30.3	4.1	85	28.1	−3.7
Service industry	13	4.7	23.7	9	3.0	−21.7
Inter-organizational	3	1.1	−30.2	6	2.0	27.6
Other settings	39	14.1	−7.2	49	16.2	6.6
Total	277			303		
Panel D: Theories: Difference (χ^2) = 21.44, $p = 0.006$, d.f. = 8						
Economics	108	39.0	−2.5	124	40.9	2.3
Organizational behavior	27	9.7	10.9	24	7.9	−9.9
Psychology	20	7.2	−0.3	22	7.3	0.3
Production/operations management	23	8.3	23.5	16	5.3	−21.5

Table 3. (*Continued*)

	1991–1995			1996–2000		
	N	%	% Dev.	*N*	%	% Dev.
Sociology	17	6.1	−30.2	34	11.2	27.6
Strategic management	9	3.2	−49.1	28	9.2	44.9
History	9	3.2	10.9	8	2.6	−9.9
Using multiple theories	23	8.3	4.7	23	7.6	−4.3
No theory	41	14.8	32.1	24	7.9	−29.3
Total	277			303		

Note: See Exhibit 1 for the taxonomy of management accounting research by Shields (1997) and its adaptation for this paper. The column of "% Dev." is the percentage deviation from the expectation. It is computed as: $(A_i - E_{ij})/E_{ij}$, where A_{ij} and E_{ij} are the observed and expected frequency of publication in category on the ith row and jth column. E_{ij} is computed as R_iC_j/N, where R_i and C_j, are the totals in the ith row and jth column, respectively, and N is the total number of all cases. The chi-square statistics are $\chi^2 = \sum_i\sum_j(A_{ij}-E_{ij})^2/E_{ij}$, where A_{ij} and E_{ij} are defined above.

reports the frequency of publication between these two types of journals by their research *Topics*. From the panel, two observations can be made. Both non-specialized and specialized journals were interested in management control systems studies. However, there are noticeable differences between the two types of journals on the remaining *Topics*. Specialized journals seem to have been more interested in a broader spectrum of research, with a more even distribution among the *Topics* listed in Table 4. Examining the articles published according to the results of χ^2 tests, we find that there is a significant difference between the management accounting-specialized journals and the non-management accounting-specialized journals on research *Topics* ($\chi^2 = 33.05$, $p < 0.001$, d.f. $= 7$).

As we turn our attention to research *Methods*, we find that 58 (27.4%) articles published in non-specialized journals implemented an analytic approach, followed by surveys with 39 (18.4%) articles (Panel B of Table 4). On the other hand, specialized journals published more articles based on case/field studies (91 articles, 24.7%), followed by survey research with 82 (22.3%) articles. In contrast, case/field studies were not as well received by the non-specialized journals. Only 26 (12.3%) articles using case/field studies successfully got into five non-specialized accounting journals. A χ^2 test reveals that the difference between the two groups of journals in frequency of publication by research method is statistically significant ($\chi^2 = 50.21$, $p < 0.001$, d.f. $= 8$).

Contrasting the research *Settings* of the published papers between the two groups of journals (Panel C of Table 4), we find that all eight journals

Table 4. Non-Specialized Versus Specialized Journals.

	Non-Specialized			Specialized		
	N	%	% Dev.	*N*	%	% Dev.
Panel A: Topics: Difference (χ^2) = 33.05, $p<0.001$, d.f. = 7						
Management control systems	116	54.7	32.2	124	33.7	−18.6
Cost accounting	20	9.4	−33.3	62	16.8	19.2
Cost management	22	10.4	−4.5	41	11.1	2.6
Cost drivers	8	3.8	15.2	11	3.0	−8.8
Management accounting, information, and systems	33	15.6	−15.6	74	20.1	9.0
Research methods and theories	8	3.8	−33.7	25	6.8	19.4
Capital budgeting and investment decisions	5	2.4	−43.0	19	5.2	24.8
Cover more than one topic	0	0.0	−100	12	3.3	57.6
Total	212			368		
Panel B: Methods: Difference (χ^2) = 50.21, $p<0.001$, d.f. = 8						
Analytic	58	27.4	58.7	42	11.4	−33.8
Survey	39	18.4	−11.8	82	22.3	6.8
Archival	29	13.7	41.7	27	7.3	−24.0
Laboratory experimentation	28	13.2	23.6	34	9.2	−13.6
Literature review	18	8.5	−8.8	36	9.8	5.1
Case/Field study	26	12.3	−39.2	91	24.7	22.6
Behavioral simulation	1	0.5	−31.6	3	0.8	18.2
Normative	6	2.8	−64.3	40	10.9	37.1
Multiple research methods	7	3.3	−4.2	13	3.5	2.4
Total	212			368		
Panel C: Settings: Difference (χ^2) = 5.37, $p = 0.498$, d.f. = 6						
Single industry or activities	75	35.4	1.6	127	34.5	−0.9
Multiple industries or activities	15	7.1	−8.8	30	8.2	5.1
Governmental or not-for-profit organizations	18	8.5	9.4	27	7.3	−5.4
Generic (abstract/stylized/ simplified)	69	32.5	11.7	100	27.2	−6.7
Service industry	6	2.8	−25.4	16	4.3	14.6
Inter-organizational	4	1.9	21.6	5	1.4	−12.4
Other settings	25	11.8	−22.3	63	17.1	12.8
Total	212			368		
Panel D: Theories: Difference (χ^2) = 57.66, $p<0.001$, d.f. = 8						
Economics	113	53.3	33.3	119	32.3	−19.2
Organizational behavior	18	8.5	−3.4	33	9.0	2.0
Psychology	17	8.0	10.7	25	6.8	−6.2
Production/operations management	8	3.8	−43.9	31	8.4	25.3

Table 4. (*Continued*)

	Non-Specialized			Specialized		
	N	%	% Dev.	*N*	%	% Dev.
Sociology	24	11.3	28.7	27	7.3	−16.6
Strategic management	7	3.3	−48.2	30	8.2	27.8
History	2	0.9	−67.8	15	4.1	39.1
Using multiple theories	19	9.0	13.0	27	7.3	−7.5
No theory	4	1.9	−83.2	61	16.6	47.9
Total	212			368		

Note: Same as in Table 3.

included in this study published more papers conducted in a single industry/activity setting (75 and 127 articles for non-specialized and specialized journals, respectively) than in any other type of research setting, followed by a generic or simplified setting (69 and 100 articles for non-specialized and specialized journals, respectively). In total, 144 (67.9%) and 227 (61.7%) studies conducted in these two types of settings were published in non-management accounting-specialized and management accounting-specialized journals, respectively. Hence, we conclude that management accounting issues studied under these two research settings were warmly welcomed by journal editors. When examining the difference between the two types of included journals in terms of research *Settings*, the difference between the two groups of journals is not statistically significant ($\chi^2 = 5.37$, $p = 0.498$, d.f. = 6).

As to the *Theories* employed (Panel D of Table 4), *Economics* is the most dominant discipline in both groups of journals, particularly for non-specialized journals. One hundred and thirteen (53.3%) articles appeared in non-management accounting-specialized journals using *Economics* as their underlying theory, followed by *Sociology* with 24 (11.3%) articles. Similarly, 119 (32.3%) articles published in specialized journals also applied *Economics* when conducting their studies. Among all articles, 61 (16.6%) articles published as specialized journals did not draw on any theory at all, which is a much higher percentage than we find in the non-specialized journals (4 articles, 1.9%). Overall, the difference between specialized and non-specialized journal groups in terms of the *Theories* adopted is statistically significant ($\chi^2 = 57.66$, $p < 0.001$, d.f. = 8).

In summary, the overall results of the comparison made between specialized and non-specialized journals indicate that the management accounting-specialized journals, namely, *AIMA, JMAR*, and *MAR*, have

become important venues for quality management accounting research. The results support that these journals do enhance certain dimensions of the diversity, such as research *Topics* and *Methods*. Such observations are consistent with the statement made by Professor Epstein (1992) in the inauguration issue of *AIMA*. That is, the establishment of specialized journals in management accounting will include papers in any area, accept research using various research methods, and examine management accounting issues by adopting a boarder spectrum of theories.

3.4. The North American Versus the International Journals

Of the 580 management accounting papers published during the period of this study, 305 (52.6%) appeared in the North American journals and 275 (47.4%) in the international journals. Referring to Panel A of Table 5, we compare the frequency of publication of the North American and the international journals as to the research *Topics*. Journals in both groups appear to have been in favor of publishing papers addressing management control systems issues. In the 1990s, a total of 143 (46.9%) and 97 (35.3%) articles investigating issues in this area were published in the North American and the international journals, respectively. However, the two groups of journals appear to have had divergent interests on the second most popular research topic. The North American journals seem to have been more interested in traditional cost accounting topics, which could reflect the calls made by Kaplan (1983, 1984). On the other hand, the international journals may have been more receptive to newly evolving issues, such as management accounting information systems. A χ^2 test reveals that the difference in the frequency of publication of the two groups of journals as to research *Topics* is significantly different ($\chi^2 = 58.66$, $p < 0.001$, d.f. $= 7$).

Referring to Panel B of Table 5, we find that 80 (26.2%) articles published in North American journals examining management accounting issues use an analytic approach. However, only 20 (7.3%) of the articles that appeared in the international journals employed this research method. In comparison, more articles accepted into the international journals used a survey approach (80 articles, 29.1%), followed by case/field studies (77 articles, 28.0%). Statistical results based on a χ^2 test reveal that the difference between the two groups of journals regarding research *Methods* employed is significantly different at a one percent level ($\chi^2 = 95.32$, $p < 0.001$, d.f. $= 8$).

Contrasting the research *Settings* of published papers in the two groups of journals, the results show that more management accounting research was

conducted in a single industry/activity setting or in a generic setting. Referring to Panel C of Table 5, both North American and international journals published more papers conducted in a single-industry setting than in any other *Setting* identified by Shields (1997). During the 1990s, the North American journals published 97 (31.8%) research studies conducted in this type of setting, while the international journals published 105 (38.2%) under the same setting. Moreover, during the same time span, a generic setting was also welcomed by journal editors in both groups, with 118 (38.7%) and 51 (18.5%) articles published in the North American and the international journals, respectively. However, the relative frequency in the international journals is 36.4% lower than the expected frequency. On the other hand, the international journals focused more on research based on government or not-for-profit organizations and international settings. Overall, the difference between the frequency of publication of the two groups of journals as to *Settings* is statistically significant ($\chi^2 = 46.70$, $p < 0.001$, d.f. $= 6$).

Regarding the underlying *Theories* applied in examining management accounting issues (Panel D of Table 5), *Economics* was the most dominant discipline in both groups of journals, particularly for those published in the North America. A total of 154 (50.5%) *Economics*-based articles appeared in five mainstream accounting journals in the North America. To a lesser extent, *Economics* was used to support papers published in the international journals. Researchers of 78 (28.4%) articles published in two international journals employed *Economics* theories to conduct their investigations. It is also noteworthy that articles accepted in *AOS* and *MAR* used a broader array of theories, including *Sociology*, *Strategic Management*, and *Organizational Behavior*. However, this observation cannot be made for the North American journals. Comparing the *Theories* used in articles in the two groups of journals, the overall difference between the published papers is statistically significant ($\chi^2 = 73.83$, $p < 0.001$, d.f. $= 8$).

In summary, the results show that there are significant divergences between management accounting research published in North American and international journals, in all categories: *Topics, Methods, Settings* and *Theories*. Although it is difficult to discern the underlying reasons for such differences, we offer the following ex post explanations to these observations. One is that these divergences may have been driven by the preferences made by the authors based on their doctoral education and research interests. For instance, those who chose to publish in international journals might be expected to have a more *Sociology*-based training, while those who chose to submit papers to North American journals could be better trained

Table 5. North American Journals Versus International Journals.

	North American			International		
	N	%	% Dev.	*N*	%	% Dev.
Panel A: Topics: Difference (χ^2) = 58.66, $p<0.001$, d.f. = 7						
Management control systems	143	46.9	13.3	97	35.3	−14.8
Cost accounting	49	16.1	13.6	33	12.0	−15.1
Cost management	38	12.5	14.7	25	9.1	−16.3
Cost drivers	16	5.2	60.1	3	1.1	−66.7
Management accounting, information, and systems	26	8.5	−53.8	81	29.5	59.7
Research methods and theories	15	4.9	−13.6	18	6.5	15.0
Capital budgeting and investment decisions	8	2.6	−36.6	16	5.8	40.6
Cover more than one topic	10	3.3	58.5	2	0.7	−64.8
Total	305			275		
Panel B: Methods: Difference (χ^2) = 95.32, $p<0.001$, d.f. = 8						
Analytic	80	26.2	52.1	20	7.3	−57.8
Survey	41	13.4	−35.6	80	29.1	39.4
Archival	42	13.8	42.6	14	5.1	−47.3
Laboratory experimentation	44	14.4	35.0	18	6.5	−38.8
Literature review	26	8.5	−8.4	28	10.2	9.4
Case/Field study	40	13.1	−35.0	77	28.0	38.8
Behavioral simulation	4	1.3	90.2	0	0.0	−100
Normative	15	4.9	−38.0	31	11.3	42.1
Multiple research methods	13	4.3	23.6	7	2.5	−26.2
Total	305			275		
Panel C: Settings: Difference (χ^2) = 46.70, $p<0.001$, d.f. = 6						
Single industry or activities	97	31.8	−8.7	105	38.2	9.6
Multiple industries or activities	31	10.2	31.0	14	5.1	−34.4
Governmental or not-for-profit organizations	16	5.2	−32.4	29	10.5	35.9
Generic (abstract/stylized/ simplified)	118	38.7	32.8	51	18.5	−36.4
Service industry	9	3.0	−22.2	13	4.7	24.6
Inter-organizational	5	1.6	5.6	4	1.5	−6.3
Other settings	29	9.5	−37.3	59	21.5	41.4
Total	305			275		
Panel D: Theories: Difference (χ^2) = 73.83, $p<0.001$, d.f. = 8						
Economics	154	50.5	26.2	78	28.4	−29.1
Organizational behavior	24	7.9	−10.5	27	9.8	11.7
Psychology	23	7.5	4.1	19	6.9	−4.6
Production/Operations management	25	8.2	21.9	14	5.1	−24.3

Table 5. (*Continued*)

	North American			International		
	N	%	% Dev.	*N*	%	% Dev.
Sociology	7	2.3	−73.9	44	16.0	82.0
Strategic management	10	3.3	−48.6	27	9.8	53.9
History	3	1.0	−66.4	14	5.1	73.7
Using multiple theories	19	6.2	−21.5	27	9.8	23.8
No theory	40	13.1	17.0	25	9.1	−18.9
Total	305			275		

Note: Same as in Table 3.

in *Economics*. The other possible explanation for these observations may be driven by the editorial focus implicitly or explicitly stated in the journals. Consistent with the editorial polices and their strategies, the editors of *AOS* and *MAR* have appeared to be more flexible than the editors of the North American journals regarding types of management accounting research published.

4. CONCLUSIONS AND DISCUSSIONS

The purpose of this study is to investigate whether the establishment of management accounting specialized journals (*AIMA, JMAR*, and *MAR*) has affected management accounting research paradigms and to examine whether these journals enhance the diversity and quality of management accounting research. Moreover, the study examines whether the editorial foci of the journals (North American versus international) differentiate the types of articles published during the 1990s. Applying Shields' (1997) classification schemes (by *Topics*, *Methods*, *Settings* and *Theories*) to each published management accounting research article, we compare and contrast the frequency of publication between (1) the first half and the second half of the 1990s, (2) management accounting-specialized and non-management accounting-specialized accounting journals, and (3) leading journals focused on North American versus those with an international focus.

Several research findings can be drawn based on the results of this study. First, the study indicates that the overall percentage of management accounting research published in non-management accounting specialized journals (*TAR*, *JAR*, *JAE*, *CAR*, and *AOS*) did not change significantly from 1991 to 2000. Using Shields' (1997) classification schemes (*Topics*,

Methods, *Settings* and *Theories*), the study reveals that there are significant differences between the 1991–1995 period and the 1996–2000 period in research *Settings* and *Theories*. However, the research *Topics* and *Methods* remained the same during the studied periods. These overall results seem to point out that new areas/territories in management accounting are evolving slowly, and that researchers appear to be conservative in applying research methodologies to their research questions. The results of the study also indicate that management accounting researchers have become more focused on using established *Theories* to build their studies. This empirical evidence is encouraging, since several leading scholars have expressed concerns over the evolution of management accounting research, and argue for a strong theoretical framework to support management accounting research (e.g., Zimmerman, 2001).

Second, by comparing and contrasting articles published in management accounting-specialized journals and non-management accounting-specialized journals, the study found that there are significant differences between the two types of journals in three of the four classification schemes, except research *Settings*. In general, the journals aimed specifically at management accounting appear to have had broader interests in research *Topics*, to have been more flexible with regard to research *Methods* and to have been more open-minded about *Theories* than the non-management accounting-specialized journals. The results may suggest that management accounting-specialized journals have responded to the calls of several renowned accounting scholars and that management accounting research should be revitalized by exploring new topics (Kaplan, 1983, 1984 for activities-based costing), by applying new research methods (Hopwood, 1983; Kaplan, 1986 in favor of field study), and by experimenting with new theories and research paradigms (Zimmerman, 2001 for *Economics*; Simons, 1990 for *Strategic Management*).

Finally, when comparing the management accounting research published in the North American versus the international journals, the study indicates that there are significant divergences in all classification schemes (*Topics*, *Methods*, *Settings*, and *Theories*) based on Shields (1997). Such observations are insightful, because they could indicate that the journals with an international focus are more flexible when publishing various types of management accounting research. Knowing that their efforts could yield publishable papers in international journals, researchers may have become more willing to take risks by exploring new issues in management accounting. Therefore, it may be desirable for the editors of North American journals to take a similar role, to those of the international journals, who were supportive of researchers' explorations of new research directions and methods.

As stated in the Mensah, Hwang, and Wu (2004) study, such an endeavor could lift management accounting research to a higher plane and enhance the probability of major breakthroughs in management accounting research.

NOTES

1. Results of management accounting research are not included in the scope of this study.
2. Different from Shields' (1997) study, our focus is journals instead of authors.
3. As its masthead indicates, *AOS* is an international journal supported by its editorial board and authors' institutions. Similarly, the editors and publisher have been explicit about trying to make *MAR* a more international journal in terms of articles and subscriptions, thus it warrants classifying *MAR* as an international journal, which is consistent with CIMA's globalization strategy.
4. Examining the extant management accounting literature, Shields (1997) provides the most comprehensive research framework to address the research questions in this study. Such a framework was also adopted for the Mensah, Hwang, and Wu (2004) study.
5. For detailed discussions of major changes in management accounting after the 1980s, refer to Birnberg (1999).
6. See Siegel and Castellan (1988).

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