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# A review of Australian management accounting research: 1980–2009

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#### Abstract

This paper reviews 231 papers published by 10 leading management accounting journals between the years 1980 and 2009. The review is structured according to research topics, research settings, research theories, research method and primary data analysis technique. Based on the results of this review, the paper provides reflections on the evolution of Australian management accounting research over the last 30 years and discusses opportunities for future research.

Key words: Management accounting; Management control systems; Australia

JEL classification: M41

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#### 1. Introduction

This volume of *Accounting and Finance* marks 50 years of history moving from modest beginnings to its position today as an internationally recognized journal covering finance, financial accounting and management accounting, and other related areas. Over this period, many Australian researchers have been active in contributing to international and domestic journals across all fields in accounting and finance. The purpose of this paper is to review the contribution of Australian researchers to management accounting research. The review aims to identify themes pursued by Australian researchers and to provide some reflections on the current state of Australian management accounting research and to discuss opportunities for the future. Such a review is arguably timely given the prior publication of similar reviews of the contributions of management accounting

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researchers in other geographic regions (see for example, Shields' (1997) review of management accounting research in North America, Hopper *et al.* (2001) in the United Kingdom, and Wagenhofer's (2006) review of management accounting research in Germanic-speaking countries).

The paper is based on 231 articles written by Australian researchers in 10 leading journals that published management accounting research over the years 1980–2009. In our paper, to be classified as an Australian researcher, authors need to have published at least one of their articles while having their primary affiliation at an Australian institution. This would exclude current or former Australian citizens who published in the targeted journals, but were based overseas and did not publish in the journals reviewed while at an Australian institution between the years 1980–2009. On the other hand, we include all the publications of an author in the targeted journals who published work while at an overseas institution, but had published any work in the targeted journals while at an Australian institution between the years 1980 and 2009.

The selection of journals inevitably involves the application of some subjective criteria. Our aim is to include a selection of journals that publish quality, internationally recognized management accounting research. We include A\*-ranked journals (according to the 2010 Excellence in Research for Australia (ERA) rankings of the Australian Research Council) in the general area of accounting that have published management accounting research. These are *The Accounting Review* (TAR), Journal of Accounting Research (JAR), Accounting Organizations and Society (AOS), Contemporary Accounting Research (CAR), Journal of Accounting and Economics (JAE) and Accounting, Auditing and Accountability Journal (AAAJ).

In addition, we include the three international journals that specialize in management accounting, namely, Management Accounting Research (MAR), Journal of Management Accounting Research (JMAR) (which is now also A\*-ranked) and Behavioral Research in Accounting (BRIA). Finally, we include Accounting and Finance (A & F) because of its historical role in supporting Australian accounting research through its affiliation with the Accounting and Finance Association of Australia and New Zealand (AFAANZ). These journals provide a manageable selection of journals that provide an overview of Australian management accounting research. Inevitably, we have excluded some important papers that have appeared in journals that do include management accounting research but are not in the A\* category or are not specialist, international management accounting journals. We apologize to the authors of these papers, many

<sup>&</sup>lt;sup>1</sup> To use an example, Peter Brownell published many papers in the journals reviewed during the review period. Although some of these were published with an overseas affiliation, because Brownell published papers with an Australian affiliation during the period, all papers published by Brownell in the journals reviewed have been included.

<sup>&</sup>lt;sup>2</sup> In making this selection, we note also the significant contribution of *Abacus* in promoting Australian accounting research.

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of whom also have articles in the selected list. Finally, the review may be seen by some as less than comprehensive as we had to decide, for some papers, whether there was sufficient management accounting, defined broadly, to be included. For example, these may be method papers with only implied connections to management accounting, or papers considering the importance of aspects of technology without an accounting angle. Given the subjectivity involved in such an approach, inevitably this means that we have excluded papers that some may have included, and *vice versa*.<sup>3</sup>

Table 1 provides a list of the number of papers published in each of the journals listed in each decade, and in total, over the period of the review.

Table 1 indicates that the journal with the most papers published by Australian management accounting researchers between 1980–2009 was AOS, followed by MAR and AAAJ. A reason that AOS and AAAJ are so well represented can be partly attributed to the fact that these two journals publish more issues per year (eight) than the other journals reviewed. What is of interest in examining trends over time is the decrease in papers published in TAR and JAR by Australian authors since the 1980s, and more recently, the fact that MAR surpassed AOS as the most popular publication outlet for published management accounting research by Australian researchers between 2000–2009.

Table 1	
Australian management accounting papers classified by jou	ırnal

Journal	1980–1989	1990–1999	2000-2009	Total
$\overline{AAAJ^a}$	2 (6%)	8 (10%)	26 (21%)	36 (16%)
AOS	10 (31%)	33 (42%)	28 (23%)	71 (31%)
A & F	4 (13%)	8 (10%)	10 (8%)	22 (10%)
$BRIA^b$	1 (3%)	6 (8%)	6 (5%)	13 (6%)
CAR <sup>c</sup>	0 (0%)	2 (3%)	3 (2%)	5 (2%)
JAE	0 (0%)	0 (0%)	0 (0%)	0 (0%)
JAR	5 (16%)	2 (3%)	1(1%)	8 (3%)
$JMAR^b$	1 (3%)	4 (5%)	7 (6%)	12 (5%)
$MAR^d$	0 (0%)	13 (17%)	38 (31%)	51 (22%)
TAR	9 (28%)	2 (3%)	2 (2%)	13 (6%)
Total	32	78	121	231

<sup>a</sup>First published 1988. <sup>b</sup>First published 1989. <sup>c</sup>First published 1984. <sup>d</sup>First published 1990. NB: all other journals reviewed were first published prior to 1980.

<sup>&</sup>lt;sup>3</sup> To illustrate, some papers that were excluded from our review that were written by authors who might be generally considered 'management accounting researchers' include Chua and Poullaos (1993, 1998, 2002), which we considered to be more accounting history than management accounting, Pinnuck and Lillis (2007), which we considered to be more financial accounting-oriented, Cuganesan *et al.* (1997), which we considered to take more of an accounting education focus, and Smith and Hall (2008), which we considered to be more focused on accountants in the general sense, rather than management accountants specifically.

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The review of papers is structured according to the articles' topics, settings, theories and methods. These same categories were employed in Shields' (1997) research of management accounting research by North Americans. Additionally, we include a separate section on data analysis techniques to analyse the contribution made by Australian researchers to management accounting research in this area. The online appendix provides a list of papers included in the review organized by journal and year of publication.

To enable us to explore trends over time in management accounting research, we split our analysis for each area of our review (topics, settings, theories, methods, data analysis) by decades. Before commencing this review, we provide a short commentary on the state of management accounting research prior to 1980. This is not intended as an historic analysis of the antecedents of pre-1980 research; rather the aim is to provide readers with a context of the nature of management accounting research prior to the period formally reviewed.

# 2. The early days

Similar to research in other countries, Australian management accounting published research prior to 1980 tended to be applied research, essentially related to practice-based issues (Scapens, 2006). Often the term 'cost accounting' and 'cost accountant' were used, recognizing the centrality of providing cost information for economic decision-making within structured decision models. Commentators have noted that in the United Kingdom and United States, early management accounting was based on traditional economic models with assumptions of rationality and stable markets (Hopper et al., 2001; Scapens, 2006). This was also the case in Australia. Topics perceived to be important by Australian researchers were similar to those found overseas and tended to focus on examining the usefulness of management accounting techniques including marginal costing, contribution analysis, cost-volume-profit relationships, process costing, inventory valuation, and accounting for divisional structures (including transfer pricing). Some researchers were adopting broader perspectives and attempted to provide coherent models for costing, and management control systems for organizational planning and controls (Burke and Macmullen, 1979), with important contributions from Bill Birkett (see Baxter and Chua, 2006 for an overview of Birkett's role in defining and framing the meaning of management accounting). Abacus provided a forum for management accounting research indicating an interest in the application of quantitative approaches such as linear programming which were applied to formalize thinking in areas such as capital budgeting (e.g. Finn, 1973) and the application of econometric modelling to financial management, more generally (Sharpe, 1974). There was also interest in applying management accounting to industry sectors such as agriculture (Mauldon et al., 1968) and functional specializations such as research and development (McRae, 1968).

On the whole, Australian research in management accounting pre-1980 did not typically involve dispute and debate over core assumptions and issues. This contrasted with the active debate on valuation in financial accounting at this time where many Australian authors were contributing actively to the international debate on how to value assets and determine income in financial accounts (e.g. Chambers, Gynther, Ma, Barton, Walker). One area that did spark argument concerned the role of profit centres and transfer pricing with exchanges between Wells and Lemke in volumes of *Abacus* (Wells, 1968; Lemke, 1970). In these papers, there was no direct appeal to mainstream organizational theories, rather, prior commentary by well-respected accounting textbook writers and appeals to logic were employed. By the mid-1970s, an emerging interest in organizational and behavioural theories was becoming apparent. For example, Abacus published papers in the area of goal congruence (Parker, 1976) and organizational goals and budgeting (Livingstone, 1975). Concern with organizational and behavioural issues was promoted with researchers such as David Watson returning to Australia from the United States after training in behavioural accounting and researching in this area. The important role of individuals such as Peter Brownell and Ian Eggleton, to the application of organizational and behavioural theories, who returned to Australia after overseas training is apparent, also, in the early 1980s.

From 1980, management accounting research, in general, moved away from its highly structured mechanistic view to one that accepted that management accounting operated within organizations that involved complex sets of interdependencies (Birnberg, 2000, p. 717). From the 1980s, Australian management accounting research has focused on behavioural and organizational issues using survey and laboratory methods, as well as employing developments in economics such as transaction cost economics (TCE) and agency theory. Sociological approaches were employed to question the assumptions of rational economics and identified management accounting as an important part of social and political processes. Our review examines the contribution of Australian research to management accounting from 1980–2009, employing these different research perspectives.

### 3. Review

As noted, this paper presents a review of management accounting research by Australian researchers in 10 journals over the period 1980–2009. Consistent with Shields (1997), we have excluded book reviews, brief editorials and commentaries from our review. Accordingly, we identified 231 papers for review that were published over this 30-year period. Our review is organized into the following sections: topics, settings, theories, methods, and data analytic techniques.

### 3.1. Topics

The frequency distribution of papers by topic is presented in Table 2.

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Table 2 Topics studied

Years	1980–1989	1990-1999	2000-2009	Total
MCS (general)	4	24	37	65
Performance measurement	4	11	23	38
Budgeting	14	21	14	49
Pricing/transfer pricing	0	1	2	3
Capital budgeting	0	4	5	9
Incentives	0	3	3	6
Costing	1	4	6	11
ABC/M	0	0	5	5
Other advanced techniques	0	2	7	9
Informal controls	4	3	5	12
MCS in inter-firm relationships	0	0	8	8
Methodological	4	5	4	13
Other	1	0	2	3
Total	32	78	121	231

The most commonly occurring topic is management control systems (MCS – general)<sup>4</sup> with 65 papers, followed by budgeting (49), performance measurement (38) and papers focusing on methodological issues (13). This is consistent with Shields' (1997) findings, who found that management control systems were the most researched topic by North American authors for the time period 1990–1996. These results provide a counterpoint to Zimmerman's (2001) contention that control was not strongly emphasized in empirical management accounting research. In terms of considering trends over time, we see a growth in the number of papers published on performance measurement, both in absolute terms, and also as a percentage of the total papers published. On the other hand, we see a percentage decrease in budgeting papers over each of the three decades. The 1980s saw a significant growth in papers exploring issues relating to budgetary participation and budgetary slack, led by Peter Brownell,<sup>5</sup> whose early papers were published while he was still based in the United States (e.g. Brownell, 1981). Brownell's early work was very influential among Australian researchers, and paved the way for other Australian researchers, who also published budgeting papers in leading journals during the 1980s and early 1990s both individually (see for example, Hirst, 1981, 1983; Chenhall, 1986; Mia, 1988, 1989; Dunk, 1989, 1990) and, in a number of cases, collaboratively with

<sup>&</sup>lt;sup>4</sup> Papers classified in this category focused on multiple aspects of management control, used generic management control typologies, or discussed MCS in a general sense, rather than focusing on a specific management control tool (e.g. budgeting, performance measurement systems).

<sup>&</sup>lt;sup>5</sup> See Brownell (1982c) for a review of the early literature on budgetary participation and Dunk and Perera (1997) for a review of the literature on budgetary slack.

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Brownell (see for example, Brownell and Hirst, 1986; Chenhall and Brownell, 1988; Brownell and Dunk, 1991). The attention afforded to budgeting in the accounting literature at this stage led Brownell and Dunk (1991, p. 703) to claim that this research was '... the only organized critical mass of empirical work in management accounting at present.' Regardless of whether one accepts this claim or not, the contention does point to the importance of this topic to early Australian management accounting researchers and highlights the coverage it received. This was perhaps both a strength and a weakness of early Australian management accounting research. While Australian researchers developed a reputation internationally for their strength and leadership in the area of budgeting research, early Australian management accounting research was much more narrowly focussed than it is today. Over the course of the 1980s, the budgetary participation and budgetary slack literature reached the maturity and (arguably) decline phase of its life cycle. It is pertinent that leading North American journals' appetite for behavioural-based management accounting research decreased over this time (Williams et al., 2006; Hopwood, 2008).

This presented challenges for Australian researchers to identify other promising topic areas for research and to diversify into these areas. Table 2 reflects a broadening in research topics since the 1980s, with the number of papers on performance measurement increasing substantially from four in the 1980s to 23 between 2000–2009, which is reflective of a broader worldwide interest in performance measurement, particularly non-financial performance measurement. This work had its impetus in the influence of authors such as Mosconi and McNair (1987) and Vollman (1990) who brought ideas to management accounting from manufacturing on 'direct' measures of performance. Importantly, the popularization of combinations of financial and non-financial performance measures can be seen as stemming from Kaplan and Norton's (1993) early writings on the Balanced Scorecard. Other areas of performance management included examining the role of 'non-accounting' measures. These measures have been conceptualized by Australian researchers in a number of different ways in the literature, such as non-accounting integrative mechanisms (Abernethy and Lillis, 1995), and reliance on manufacturing performance measures (Chenhall, 1997).

Australian researchers have been active in studying the development and the role of activity-based accounting in organizations. For example, Briers and Chua (2001) used a field study to examine how activity-based costing (ABC) was implemented in an organization, while Chenhall (2004) looked at the role of conflict in influencing ABC implementation. *Accounting and Finance* has published a number of papers by Australian researchers on ABC, with Baird (2007), Baird *et al.* (2007) and Brown *et al.* (2004) all contributing to knowledge in this area.

Another area that stands out in terms of growth over time has been papers by Australian researchers considering management control in inter-firm relationships. The first (overseas) studies in this area were published in the early 2000s (see for example, Groot and Merchant (2000) on international joint ventures, and van der Meer-Kooistra and Vosselman (2000) and Spekle (2001) on

outsourcing). Australian researchers were quick to embrace this new research area, with eight papers in the 2000s (see for example, Chalos and O'Connor (2004) and Emsley and Kidon (2007) on joint ventures, Chua and Mahama (2007) on networks and Langfield-Smith and Smith (2003) and Lamminmaki (2008) on outsourcing).

One aspect of management accounting research that has helped progress understanding of management accounting is the novelty of the aspects of MCS that have been examined. Over the studied period Australian researchers have introduced a variety of topics into the management accounting literature. Brownell (see for example, Brownell, 1981, 1982a,b,c) was instrumental in popularizing research in participative budgeting. Hirst (1983) has been credited with introducing the term 'reliance on accounting performance measurement' (RAPM) to the accounting literature. Chenhall and Morris (1986) introduced generic information characteristics as a way of describing MCS, including broad scope, timeliness, aggregation and integration. Guilding (1999) and Guilding and McManus (2002) extended knowledge in relation to the notions of customer accounting and competitor-focused accounting respectively. Dunk helped develop ideas around the meaning of budgetary slack (see Dunk and Perera, 1997 for a review of this literature). Research in the area of balanced scorecards was advanced by Hoque and James (2000), which was one of the first publications to examine the performance effects of balanced scorecards, and Chenhall's (2005) conceptualization of integrativeness to describe the elements of the balanced scorecard. Hall (2008) elaborated on the notion of diversity in performance measures. Emsley (2000) refined variance analysis and introduced this into the mainstream academic literature.

### 3.2. Settings

Like Shields (1997) in the United States, our review finds that the manufacturing sector was the most commonly used setting with 69 papers. While service firms appear to be very lightly represented by comparison (18 papers), we include public sector, non-profit, healthcare/hospitals and accounting firms as separate categories. If we include these and service firms as non-manufacturing, the number of papers using manufacturing and non-manufacturing settings is approximately equal.

The number of papers using manufacturing as the setting reflects common practice in overseas research in the 1980s and 1990s. This is not surprising as management accounting has been historically associated with the manufacturing

<sup>&</sup>lt;sup>6</sup> This number could have been even higher if Clinton Free's papers (Free, 2007, 2008) on trust and supply chain management had been included in our review. While Clinton Free is an Australian national, who was at one time employed at an Australian institution (UNSW), all of Free's papers in the journals reviewed were published with his Canadian affiliation and thus have been excluded from our sample.

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setting and the measurement and control of factory costs (Shields, 1997). However, the strong interest in manufacturing setting is perhaps surprising, in another sense, given the relative size of the non-manufacturing sector in the Australian economy. Table 3 provides the frequency distribution of the research settings employed in the 231 articles reviewed. This indicates a growing interest in the non-manufacturing sectors with the number of papers featuring a manufacturing setting falling, both in absolute terms and as a percentage of total papers, between 2000–2009.

In terms of specific contributions to particular settings, two contexts are noteworthy, in terms of Australian contributions to management accounting research in the area. The first of these is the hospital/healthcare sector, with Margaret Abernethy and Wai Fong Chua (and various collaborators) contributing significantly to knowledge of the use of management control systems and management accounting practices in the healthcare sector (see for example Abernethy and Stoelwinder, 1991, 1995; Abernethy and Vagnoni, 2004; Chua, 1995; Abernethy and Chua, 1996; Preston et al., 1997). The second is in the area of public sector research, which experienced significant growth between 2000 and 2009. Part of this growth can be explained by researchers trained overseas in this area such as Kerry Jacobs and Paul Collier moving to Australia (see for example Collier, 2001; Modell et al., 2007) as well as by Australian authors' collaborations with overseas researchers (see for example Broadbent and Guthrie, 2008). Other authors have progressed understanding on the application of MCS in not-forprofit areas such as churches (see for example Booth, 1993; Parker, 2002), the military (Chenhall and Euske, 2007), universities (Chung et al., 2009) and schools (Broadbent et al., 1999).

Table 3 Research settings

Years	1980-1989	1990–1999	2000-2009	Total
Manufacturing	10	30	29	69
Service	0	2	16	18
Both manufacturing and service	2	5	5	12
Retail	0	2	2	4
Public sector	0	3	10	13
Not-for-profit	0	1	7	8
Hospitals/healthcare	1	11	6	18
Accounting firms	5	1	4	10
Laboratory	2	9	10	21
Nil/not stated	11	13	24	48
Other	1	1	8	10
Total	32	78	121	231

<sup>&</sup>lt;sup>7</sup> A review of this research is presented in Abernethy et al. (2004).

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#### 3.3. Theories

Table 4 provides the frequency distribution of the research theories employed in the papers reviewed. Where possible, we have sought to identify the predominant theoretical framework employed in each study and classify papers accordingly. The subjective nature of this process must be acknowledged. Where multiple theories were used and a single main theory was difficult to discern, the paper was classified as employing multiple theories. Table 4 indicates a large reliance on psychological, organizational and contingency theory. Perhaps the most noteworthy trend to emerge from an examination of Table 4 is the significant growth in the number of papers employing sociological/institutional/critical theories. These papers have primarily been published in AOS or AAAJ, journals which have had a significant role in cultivating research of this nature, both in Australia and of course internationally.

A distinctive feature of many research papers prior to 1980 was a lack of concern with employing or building theory with many studies being focused on refining MCS practices. The implied theories were drawn from traditional economics and principles of management which provided guidance to managers on how to be effective and efficient. In the 1980s and 1990s, organizational and behavioural theories tended to be used explicitly to help explain how MCS were implicated in the functioning of the organization. A large body of work followed contingency frameworks employed organizational theories that were the foundation of this line of research. Studies examined the influence on MCS design of environmental uncertainty, technological tasks, organizational structures, and in more recent years, strategy (see Chenhall, 2003 for a review of the connections between MCS and these elements of context). Another area was the investigation of the role of national culture in the application of MCS. Harrison (1992, 1993),

Table 4	
Theories	used

Years	1980–1989	1990-1999	2000-2009	Total
Number of papers				
Psychology	13	9	17	39
Contingency	7	32	9	48
Organizational behaviour/theory	7	12	41	60
Methodological/statistical	0	3	2	5
Sociological/institutional/critical	3	7	24	34
Agency	0	2	6	8
Cultural	0	1	0	1
Applied	2	7	11	20
Economics	0	1	0	1
Multiple	0	3	10	13
Other	0	1	1	2
Total	32	78	121	231

Harrison and McKinnon (1999) and O'Connor (1995) were among those who provided important insights into the role of national culture. This was timely as organizations developed global operations, and it became apparent that it might not be efficacious to employ MCS that had been developed within Western cultures to organizations in other cultures, particularly Eastern cultures and countries characterized as emerging economies.

Studies following quantitative approaches, usually based on survey data, maintained their popularity with little effect from the negative reaction to this research found in the emerging sociological approaches to research that was primarily UK-based. Critiques of quantitative approaches (often incorrectly lumped under the label of contingency research) stressed an absence of inherent theory, difficulties in conceptualization and measurement of key variables, methodological problems, failure to recognize managers' choice and a static approach to the research problems (e.g. Hopper et al., 2001). These criticisms may be levelled at quantitative research across a broad range of disciplines. Notwithstanding the importance of the issues raised, consideration of the research reviewed in this paper reveals a refinement in theory construction and concerns with method issues over the period reviewed. Unlike descriptive and practice-based research, most of the reported research is theory-driven, variables, in the main, are carefully selected and subjected to tests of validity and reliability with examples of attempts to validate theories and constructs across studies. Many of the studies see managers making choices (sometimes different choices) as they design or use their MCS either as they respond to, or enact, their operational settings. This may be carried out in different ways depending on the characteristics of the manager or their preference for a particular way of conducting business. There has been considerable pressure from peer reviewers for work in this area to improve in terms of elucidating theory and in method issues as accounting researchers engaged in reflecting on method developments in other disciplines.

Research largely driven by UK-influenced researchers employing 'alternate' theories and methods appeared mainly in AOS, MAR and AAAJ, A concern with developing understanding of what occurs, rather than what should occur, in management accounting practice provided the impetus for a line of case study research often less constrained by conventional theory testing, stressing that management accounting (MA) research needed to investigate MCS by observing practice. Several lines of 'alternative' research applied theories drawn from areas other than conventional economic and management theories. These works tended to identify sociological or philosophical thinkers popular in sociology, in some instances providing a critical stance. Examples include the works of Latour (Briers and Chua, 2001; McNamara et al., 2004; Cuganesan and Lee, 2006; Chua and Mahama, 2007), Habermas (Chua, 1986b; Jacobs, 1995), and Bourdieu (Baxter and Chua, 2008). Other approaches examined how managers may respond to institutional pressures to adopt MCS (Abernethy and Chua, 1996). While a variety of insights have been provided from this line of research, it has been suggested that as a body of work, it has lacked theoretical and empirical consolidation. Often novelty has driven research efforts with little cross-validation of findings and ideas across studies (Hopper *et al.*, 2001, p. 282). It is possible that the degree of diversity in this stream of research has made it difficult to draw clear implications. A challenge exists for future researchers to take more effort to build upon and expand existing work rather than just aiming for novelty.

Experimental research has been less popular in Australia than in the United States; however, there has been a continuing line of Australian research in this area. These studies have tended to employ theories from psychology to explore issues relating to concepts such as personality (Brownell, 1981), feedback (Hirst and Luckett, 1992; Briers *et al.*, 1999) and cognitive style (Chenhall and Morris, 1991; Cheng *et al.*, 2003b), while non-experimental research has also picked up related themes such as motivation (Mia, 1988, 1989) and role ambiguity and role conflict (Chenhall and Brownell, 1988; Hall, 2008). It is possible that some researchers see experimental research in MA as 'artificial' claiming that those practicing management accounting face many more complications than, say, in the field of auditing where tasks may be more constrained. If this were true, it is unfortunate as experimental work's concern with internal validity provides a powerful way of testing specific, focused theories on how individuals respond to information from MCS. Certainly top-tier, US-based journals appear to welcome papers based on experimental research.

### 3.4. Method

An examination of Table 5 indicates that the three most popular research designs over the period 1980–2009 were, in order, surveys (93), case studies (56) and experiments (24). Interestingly, there were more literature reviews 8 published by Australian authors between 1980–2009 (32) than there were experimental papers. Some of these literature reviews have themselves been methodological in nature, containing important reflections regarding how to improve the quality of research in the area examined. The papers of McKinnon (1988) and Lillis and Mundy (2005) on field research fall into this category.

The popularity of surveys in Australian research is well known, and the survey method was commonly employed in behavioural budgeting research, explaining its popularity in the 1980s and 1990s, with survey research accounting for exactly half of all papers published between 1980 and 1999. By comparison, it was not until the 1990s that case study research gained popularity in Australia, with papers by researchers such as Anne Lillis (see for example, Lillis, 1992, 1999), Jane Baxter (see for example, Hirst and Baxter, 1993), Louise Kloot (Kloot, 1997) and Wai Fong Chua (see for example, Abernethy and Chua, 1996). However, Table 5

<sup>&</sup>lt;sup>8</sup> A number of these have been extremely influential and well cited in the literature (see, for example, Chua (1986a,b), Langfield-Smith (1997), Chenhall (2003)).

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Table 5 Method

Years	1980–1989	1990–1999	2000-2009	Total
Survey	20	35	38	93
Case/interviews	0	11	45	56
Experiment	3	10	11	24
Action research	0	1	0	1
Archival	1	1	3	5
Analytical discussion	2	4	3	9
Analytical: mathematical	0	1	0	1
Literature review	6	12	14	32
Multiple methods	0	3	7	10
Total	32	78	121	231

reveals that in the period 2000–2009, the number of Australian papers using case study methods actually outstripped surveys for the first time.

In addition to emphasizing the most commonly employed research designs, Table 5 highlights some major differences in methods between Australian management accounting research and US management accounting research. In particular, the number of experimental papers and archival papers published by Australian authors is relatively low. Peter Brownell (Brownell, 1981), Mark Hirst and Peter Luckett (see for example, Luckett and Hirst, 1989; Hirst and Luckett, 1992) were influential Australian management accounting researchers who used experiments, and more recently, Peter Booth, Axel Schulz and Mandy Cheng have continued in this vein (see for example, Cheng et al., 2003a,b; Booth and Schulz, 2004). Notwithstanding the important contribution of these individuals. the number of Australian researchers regularly employing experimental techniques in their research is relatively low. The number of archival papers is extremely low (five papers out of 231), with no Australian-based management accounting researcher being identified as a leading international proponent of this method over the period 1980-2009. Given that leading US-based journals (TAR, JAR, JAE) appear to have exhibited a preference for archival and experimental research over survey-based (with some exceptions, see Abernethy et al. (2004)) and case-based research over recent years, a reliance on survey and casebased methods would appear to limit the ability of Australian management accounting researchers to publish in leading US journals. Similarly, there is almost a complete absence of analytical research undertaken by Australian MA researchers.

## 3.5. Data analysis

The classification of papers by primary data analytic technique appears in Table 6.

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Table 6			
Primary	data	anal	ysis

Years	1980-1989	1990–1999	2000-2009	Total
Case-based/action research	0	12	45	57
Descriptive statistics	1	1	0	2
t-tests/z-tests	1	1	4	6
Correlations	0	1	1	2
Factor analysis	0	0	1	1
Regression	15	32	23	70
ANOVA/MANOVA	4	9	11	24
PLS/SEM/Path analysis	3	1	16	20
Cluster analysis	0	1	1	2
Other	0	3	2	5
Nil	8	17	17	42
Total	32	78	121	231

Table 6 indicates that for quantitative research papers, the three most popular data analysis techniques were regression, with 70 papers, ANOVA/MANOVA, which were mainly employed in experimental research (24 papers), and path modelling techniques (comprising path analysis, structural equation modelling (SEM) and partial least squares (PLS) modelling) with 20 papers.

Of the papers using regression, many of these were survey papers using moderated regression analysis. From a theory-building perspective, many of these papers were influential, as they represented a shift from modelling selection approaches to contingency fit (Drazin and Van de Ven, 1985), which characterized early contingency-based management accounting research, to modelling interaction approaches to fit. Birnberg and Shields (2009, p. 123) credit Brownell's (1981) paper, along with Merchant (1981), as being '... the first of many studies to investigate how a variety of individual-, interpersonal-, organizational-, and societal-level variables moderate the effect of management accounting practices.' While the use of moderated regression analysis in budgeting research was heavily criticized by Hartmann and Moers (1999), what does need to be remembered is that the use of moderated regression analysis was innovative for its time. Arguably, Australian management accounting researchers have been early adopters of innovative multivariate techniques that have enabled knowledge to advance in our discipline. Chenhall and Morris (1986) was one of the first studies to employ path analysis, which in turn served as a forerunner to the more sophisticated path modelling techniques employed today, with Australian researchers again being relatively early adopters of both SEM (see for example, Abernethy and Lillis, 2001; Chong and Chong, 2002; Baines and Langfield-Smith,

<sup>&</sup>lt;sup>9</sup> Dunk (2003) provided a response to these criticisms and Hartmann and Moers (2003) a further rejoinder.

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2003) and PLS modelling (see for example, Chenhall, 2004, 2005; Mahama, 2006; Hall, 2008). Table 6 indicates a substantial increase in the number of papers using these techniques between 2000 and 2009. Additionally, while the use of cluster analysis in the overall sample is very small (just two papers – Chenhall and Langfield-Smith (1998c) and Moores and Yuen (2001)), these papers are noteworthy from a modelling and theory building standpoint as they represent the first efforts to model a systems approach to contingency fit using techniques other than the Euclidean distance approach used in Selto *et al.* (1995) and subsequent studies.

### 4. Overview

We believe that our review highlights the outstanding contribution that Australian management accounting researchers have made to the management accounting literature over the last 30 years. Despite our relatively small size and geographic separation, Australian management accounting researchers have made a considerable impact on knowledge in the discipline and have demonstrated a consistent ability to publish in leading, high-impact journals. Our review also reveals the changing face of Australian MA research over the last 30 years. If one had sought to construct a profile of an 'average' Australian MA research paper in, say, 1990, the profile may have been as follows: survey-based research, most likely relating to behavioural issues in the budgeting process (e.g. budgetary participation/slack), drawing on psychological theories, using moderated regression analysis to test an interaction model. In 2010, the research topics, theories and methods considered by Australian researchers are much more diverse. Part of this increase in diversity is no doubt due to the emergence of new journals in the late 1980s (including MAR and AAAJ), which have increased the number of publication outlets for MA research drawing on sociological and critical perspectives. Despite this increase in diversity of research, some significant gaps remain in terms of the number of Australian researchers undertaking research in particular areas, particularly in relation to archival research, and to a lesser extent, experimental research. This could be seen as problematic, given that a number of the US-based journals ranked as A\* in the Australian Research Council (ARC) ranking list (TAR, JAR, JAE) appear to have exhibited a strong preference for archival research.

## 5. The way forward?

This paper, to this point, has been devoted to reviewing prior Australian research in management accounting. In this section, we turn our attention to the

<sup>&</sup>lt;sup>10</sup> Smith and Langfield-Smith (2004) provide a review of the use of SEM in management accounting research.

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future, and in doing so, we identify topics and issues that we believe may be of relevance for Australian MA research moving forward.

Topics such as ABC and ABM (activity-based management) that excited management accountants in the 1990s have become less fashionable in academic research. Yet we still know little about how firms design ABC/M systems and how they are used. Questions remain as to how they have become part of costing systems or how they are used to achieve cost control; more generally, have they become part of strategic management? Relating costing to specific sectors remains of interest. For example, how have ABC systems developed in the healthcare and not-for-profit sectors as organizations in these sectors have experimented with these systems to grapple with cost scrutiny and enforced cost efficiencies? How are these systems, and others, implicated in quality initiatives such as Six Sigma? Has the notion of lean accounting been embraced by organizations and has that had an impact on ABC design and use? How do ABC/M-type systems combine or interact with other managerial initiatives to influence outcomes, including performance?

Theories are needed to help understand the role of variables that mediate the association between MA initiatives and performance. There are often strong theories that can be employed to gain understanding of how a particular MA practice may influence factors such as learning, commitment, psychological empowerment, and in so doing, can potentially enhance efforts to develop initiatives relating to quality improvement, and innovation. How these variables may impact on performance can become difficult as often there is a wide array of other influential factors, some endogenous, some exogenous. Clarifying how MA influences the more immediate outcomes can be a first step in examining broader issues of the role of MA in improving organizational performance.

The role of MA in issues concerning corporate governance would seem particularly pertinent, post the Global Financial Crisis (GFC). US scholars have made a significant contribution to knowledge in this area pre the GFC, particularly in relation to issues surrounding compensation and the use of incentives (see for example, Core and Guay, 1999; Core et al., 1999). Such research has typically relied on the analysis of archival data. The dearth of studies using archival research by Australian MA researchers highlighted in this review might appear to preclude contributions by Australian MA researchers to this literature, at least in the short term. One potential way to overcome this would be cross-disciplinary research with financial accounting colleagues. A couple of highly successful collaborations between Australian financial accounting and MA researchers in recent times (albeit not specifically in the area of governance) have been that of Naiker et al. (2008) and Pinnuck and Lillis (2007), both of which led to A\*-ranked publications.

Performance measurement has occupied the attention of MA researchers for some time. Early work was concerned with measurement as it related to reward and incentive schemes, typically following agency theory perspectives. Issues of importance to measurement are the benefits and potential tensions that occur by

combining financial and non-financial measures. Attempts to understand strategic performance measures by way of balanced scorecards have motivated a stream of research. However, much remains to be discovered about how these systems are designed and applied. Insights into other disciplines that have been concerned with performance management for some time, such as human resource management and production management, would seem important here. On a related note, Australian researchers have advanced knowledge of the association between strategy and performance measurement systems, and indeed strategy and MCS more generally (see for example, Langfield-Smith, 1997; Perera et al., 1997; Baines and Langfield-Smith, 2003; Kober et al., 2007). However, comparatively little attention has been devoted to the issue of enacting strategy in a multinational/global context and the implications for MCS that could arise from this. Further, as 'global' organizations redefine strategies and structures in response to changes in the global environment, it becomes important for researchers to consider issues relating to the use of MCS to integrate operations across the organization. Topics related to the use of 'horizontal' accounting within organizations would appear relevant (Chenhall, 2008).

Opportunities exist for work in sectors other than manufacturing. As noted in this paper, healthcare has provided a context to gain theoretical insights into MA applications, and Australian researchers have been at the forefront of this research. Similarly work in, for example, NGOs, government agencies, financial institutions, and educational institutions would seem to provide settings to enhance understanding of the application for MA.

There is often a call to show the practical implications of MA research. While this is relevant and it seems inevitable that most MA research will (ultimately) have practical implications, it would seem important not to compromise the development of theories of importance to MA research by requiring immediate practical implications. There are many journals for drawing and interpreting practical implications from research in journals that target practitioners more directly. For example, the *Australian Accounting Review* and the *Journal of Cost Management* have important roles to play in terms of providing fora for the dissemination of practice-related management accounting research to practitioners.

As well as the attraction of studying 'new and novel' practices such as ABC/M and the balanced scorecard, MA researchers need to recognize that traditional practices are still popular in many organizations. We still have much to learn about the application of practices such as operational and capital budgeting. Important research opportunities will likely be found in examining how (or whether) these practices have evolved to suit contemporary settings, and how these traditional practices combine with 'modern' practices and operate in the presence of emerging technologies. A potentially interesting research issue to contemplate could be to consider whether traditional and modern techniques act in complementary ways or act separately, as well as to consider possible areas of overlap/redundancy or conflict between the techniques, and the potential implications for performance.

A further research area that we believe has the potential to be fruitful in the future is to consider in more detail the role of information systems (IS) in organizations and whether the role of IS has an impact on the design and use of different MA techniques. While this stream of research has received attention overseas, particularly in relation to the influence of enterprise resource planning systems on MCS (see for example, Granlund and Malmi, 2002; Chapman, 2005; Chapman and Kihn, 2009), Australian research has in the main not paid significant attention to the interplay between IS and MCS (exceptions include Dunk (2004, 2007)). This would appear to be an area in which Australian researchers are well placed to contribute, given the emergence and growth in recent years of accounting information systems/business information systems (AIS/BIS) as a subdiscipline within accounting departments (for example, the University of Melbourne and Monash University) and business schools (for example, the University of Queensland and University of Sydney). The opportunity exists for MA and AIS/BIS researchers to collaborate in a meaningful way to advance this stream of research.

Management accounting has played a key role in performance measurement. However, other disciplines such as marketing, operations and human resources management have also explored the topic of performance measurement/management. Given this overlap and the potential to pool knowledge and resources, it is perhaps curious that there has not been greater cross-fertilization of ideas and research agendas across disciplines. Merchant *et al.* (2003) noted the apparent limited awareness that many accounting researchers appear to have of advances in other disciplines. Also, Mensah *et al.* (2004) found that there was a decreasing incidence of citation of management accounting in other disciplines. This may contribute to hindering progress by fragmenting the literature, slowing down communication and inducing incomplete or incorrect conclusions. It would seem that there is a need to study control issues with others engaged in these issues, or at least clarify differences due to assumptions.

Finally, we believe that increased attention to methodological issues have the potential to carry research forward in our discipline. With respect to quantitative research, in some situations research could be improved through greater attention to data collection. For example, survey research should employ best practice data collection techniques (i.e. the use of Dillman's (2000) methods). Greater attention should be paid to defining constructs and clarifying what type of measurement models are being employed, be they formative or reflective (see Bisbe et al., 2007 for further discussion on this issue). The emergence of techniques such as SEM and PLS, which explicitly account for measurement error, does not excuse 'noisy' measurement. Additionally, management accounting researchers appear slower than our colleagues in other areas of accounting to adequately respond to issues such as endogeneity problems (see Chenhall and Moers, 2007).

Another area in which Australian quantitative MA researchers have excelled in the past, and have the potential to do so again in the future, is in the application of new statistical methods. As noted previously, Australian MA researchers

have been early adopters of a number of statistical techniques, particularly moderated regression analysis, cluster analysis and PLS modelling. We believe that potential exists in such techniques as multi-level SEM, latent class modelling and recursive partitioning to enable the advancement of theory in MA.

With respect to qualitative research, as noted earlier in this paper, one criticism that could be levelled at some case-based research papers in our review is that of a weak theoretical framework, or in extreme cases, one that is difficult to identify. Increasingly, journals that regularly publish high-quality case research (e.g. AOS, MAR) require researchers to identify clearly their contributions to theory as well as to practice. Another observation with respect to case work is in relation to the communication of results. Research by MA case researchers has drawn on, and been informed by, a rich vein of prior research in disciplines such as sociology, anthropology and politics. However, in our view, a problem with some of this accounting research has been the difficulty in integrating the findings within more 'mainstream' research agendas. We are reminded of the views of Merchant (2007, p. 904), who, in describing such research as interdisciplinary accounting research (IAR), wrote:

IAR writings tend to be heavily laden with technical jargon that mainstream accounting researchers are not familiar with. In the literatures I read on a regular basis, I rarely if ever encounter words such as ontology, epistemology, positivism, postmodernism, constructionism (or deconstructionism), ethnomethodology, dialogical endeavour, re-contextualization, polycentrism, nomothetic, reflexivity, idiographic theory, or even interpretive research. Using these words probably allows IAR insiders to communicate effectively and efficiently with each other, and it certainly makes them appear learned. But it doesn't do much to communicate to me, and, presumably, to other outsiders to this literature.

Merchant's (2007) claims are provocative, perhaps deliberately so, and should be understood, as Merchant acknowledges, as coming from a researcher outside of the area. However, what Merchant's comments do, in our view point, is highlight a perceived disconnect between 'mainstream' MA research and some, but by no means all, 'alternative' MA research. Of course, we agree with Merchant's (2007) view that research would be enhanced if 'critical' or 'alternative' MA research agendas and more 'mainstream' MA research agendas were more closely integrated over time.

#### 6. Conclusion

While it is difficult to judge the relative contribution of different countries, it seems clear from our review that Australian researchers have made significant contributions to management accounting research between 1980–2009, in identifying research topics, and employing contemporary theories and research methods drawn from a variety of perspectives. Approaches have been employed that have drawn on organizational and behavioural theories as well as more socio-

logical and critical perspectives. Researchers have collected data using surveys and, in limited cases, archival approaches and have employed laboratory experiments and case studies. This has provided Australian research with an eclectic orientation drawing on the traditions of work both in the United States and in Europe.

In general, Australians are said to have a tradition of being travellers. Australian management accounting researchers are particularly keen travellers, spending periods of outside study programs (sabbaticals) at universities around the world and attending international conferences. This has helped in tapping into contemporary overseas research, as well as promoting 'home-grown' ideas and agendas. It is unlikely that the growth in MA research in Australia in the 1980s and 1990s could have been achieved without the influence of scholars returning to Australia after periods of doctoral study and other research training overseas. Current evidence of the benefits of developing overseas connections is the growth in collaborative research between Australians and academics in the United States, United Kingdom and Europe, as well as continuing links with New Zealand.

Challenges remain in keeping abreast of key topics of relevance. Maintaining contact with the world that employs management accounting will be important to ensure that management accounting maintains its grounding in things that matter. Interactions between researchers and the accounting profession can provide opportunities and contacts to monitor developments in practice. It will be important to be attuned to what is happening in disciplines that can help inform management accounting. Here, we can expect researchers to follow and share their interests in contemporary developments in economics, organizational and behavioural studies as well as sociology and anthropology. Much can be gained by management accounting researchers working in collaboration with colleagues in those disciplines addressing similar research problems, such as IS, operations management and human resource management. We also see potential for management accounting researchers to collaborate with financial accounting colleagues, particularly in relation to MA issues surrounding governance and compensation issues.

Finally, it is worth noting that recent initiatives of the Australian Government to tie research funding to performance-based criteria will likely increase the pressure for management accountants to undertake research that will produce outcomes in 'top tier' journals. This will increase pressure on researchers to find important research topics and to employ best practice research methods, whatever these might be. This probably is not a bad thing, as it will help maintain the contribution that management accounting has made to the broader accounting literature over the last 30 years, both within Australia and internationally.

## **Supporting Information**

Additional Supporting Information may be found in the online version of this article:

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# **Appendix.** List of papers reviewed.

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