J Manag Control
https://doi.org/10.1007/s00187-018-0257-1

ORIGINAL PAPER

Future research on management accounting and control in family firms: suggestions linked to architecture, governance, entrepreneurship and stewardship

Martin Quinn[1] · **Martin R. W. Hiebl**[2] · **Ken Moores**[3] · **Justin B. Craig**[4]

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Abstract While research on management accounting and control in family firms has increased considerably in recent years, the attributes of these numerically dominant firms in all economies that differentiate them from non-family firms have yet to feature in general management accounting and control research. Despite this recent increased interest there are still important unanswered questions concerning management accounting and control systems in family firms. In this paper, we present suggestions for future research on management accounting and control in family firms. We organize our suggestions with the help of the AGES framework, which indicates that family firms differ from non-family firms across four dimensions: architecture, governance, entrepreneurship, and stewardship.

✉ Martin R. W. Hiebl
martin.hiebl@uni-siegen.de

Martin Quinn
martin.quinn@dcu.ie

Ken Moores
kmoores@bond.edu.au

Justin B. Craig
justin.craig@kellogg.northwestern.edu

[1] Business School, Dublin City University, Glasnevin, Dublin 9, Ireland

[2] Chair of Management Accounting and Control, University of Siegen, Unteres Schloß 3, 57072 Siegen, Germany

[3] Australian Center for Family Business, Building 2, Bond Business School, Bond University, Gold Coast, QLD, Australia

[4] Kellogg School of Management, Jacobs Center, Northwestern University, 2001 Sheridan Rd, Evanston, IL 60208, USA

Published online: 27 January 2018

Keywords Management accounting · Management control · Family business · Family firms

1 Introduction

In the past few years, scholars of management accounting and control have shown increased interest in family firms (e.g., Giovannoni et al. 2011; Songini and Gnan 2015; Speckbacher and Wentges 2012). Most of this research is motivated by the notion that family firms display considerable differences in the way they implement and use management accounting and control systems. Meanwhile, there have been more than 20 published papers which highlight the specifics of management accounting and control in family firms (see Table 1; for reviews of this literature, see Helsen et al. 2017; Prencipe et al. 2014; Salvato and Moores 2010; Senftlechner and Hiebl 2015; Songini et al. 2013).

While the insights from this literature have helped us to gain a better understanding of how management accounting and control differs along varying degrees of family influence, the general management accounting and control literature has so far not considered family firms to a great extent. Instead it has rather focussed on a generic class of business that ignores family influence. This generic type of firm which dominates the management accounting and control literature shares many characteristics of *non*-family firms, amongst others: separation of ownership and control, stock market listing, and large firm size. In management accounting and control research based on contingency approaches, the most researched external variables include market competition, technology, environmental uncertainty and national culture, whereas the most researched internal variables include organizational size, structure and strategy (Chenhall 2003; Otley 2016). However, family influence so far does not feature in prominent reviews of this contingency-based management accounting and control literature such as Chenhall (2003) and Otley (2016).

We believe this neglect of family firms in the management accounting and control literature is regrettable since the above-mentioned growing literature clearly indicates that family firms are not only different in their use and design of management accounting and control systems but also significant in all economies. Empirical findings from this literature underpin the specifics of family firms regarding management accounting and control. In addition, widely-used economic theories have been evoked to further explain these differences. For instance, several articles summarized in Table 1 adopt a theoretic viewpoint rooted in agency theory (e.g., Dekker et al. 2013, 2015; García Pérez de Lema and Duréndez 2007; Hiebl et al. 2012, 2013; Songini and Gnan 2015; Speckbacher and Wentges 2012). In a basic form, this agency-related viewpoint argues that family firms have a reduced need for formal management accounting and control instruments. In such firms, one of the root causes of agency conflicts—the separation of ownership and control (e.g., Jensen and Meckling 1976)—occurs less often, which allows formal management accounting and control mechanisms to lower agency conflicts less useful in family firms compared to non-family firms. In addition to these empirical and theoretical arguments showing that family firms are a special case when it comes to management accounting and control, family firms are also highly important

from an economic point of view. As many statistics from individual countries show, family firms account for a majority of all firms worldwide, especially amongst smaller firms (for an overview, see IFERA 2003). In contrast, the more general management accounting and control literature has long been focussed on non-family firms, which account for a (small) minority of business worldwide (cf. Helsen et al. 2017). So while family firms dominate large parts of the economic landscape and research on management accounting and control in family firms has increased in the last several years, there are still important questions left to be answered. Answering such questions from an accounting viewpoint could contribute in putting family firms and family influence more to the forefront of management accounting and control research.

This editorial viewpoint aims to complement prior reviews of accounting in family firms by suggesting an overarching framework for future research on management accounting and control in family firms, that is, the AGES framework. Since these prior reviews on management accounting and control in family firms have only been published relatively recently (Helsen et al. 2017; Prencipe et al. 2014; Salvato and Moores 2010; Senftlechner and Hiebl 2015; Songini et al. 2013), it would be redundant to deliver another review article. For readers wanting to dig deeper into this literature we will nevertheless provide a list of key studies that tackle important issues of management accounting and control in family firms (see Table 1).[1] The AGES framework we adopt in this paper suggests that family firms differ from non-family firms in four important dimensions: Architecture, Governance, Entrepreneurship, and Stewardship (Craig and Moores 2015, 2017). Of course, what we consider as important future research topics is a subjective choice. From our multi-year experience in this field, we are confident that the suggestions we present here offer the potential for generating important insights for family business research, for management accounting and control research and for business practice.

In the next section, we give a brief overview on the AGES framework and highlight how the four dimensions of this framework affect the design and use of management accounting and control in family firms. In Sect. 3, we then present our AGES-linked suggestions for future research on management accounting and control in family firms. This is followed by a brief concluding section where we summarize the most important implications for future research and practice.

2 The AGES framework and management accounting and control in family firms

The AGES framework suggests that family firms differ from non-family firms across four dimensions: (1) *architecture* refers to the structures and systems put in place to implement strategy; (2) *governance* highlights family-firm particularities as to who decides whether and when; (3) *entrepreneurship* represents family-firm-specific strat-

[1] The selection of these key studies is based upon the authors' knowledge of the literature on management accounting and control in family firms and represents those studies which are most central to this literature in our view. Thus, this list of key studies is not the result of a systematic literature review or the like, but nevertheless is similar (but more up-to-date) when compared to the review samples of systematic literature reviews on the topic of interest (e.g., Helsen et al. 2017; Senftlechner and Hiebl 2015).

Table 1 Selected academic studies dealing with management accounting and control in family firms

Author(s)	Aspects of management accounting and/or control considered	Main results
Acquaah (2013)	Diagnostic and interactive control systems	To realize better financial performance, diagnostic and interactive management control systems need to be adapted to family firms' strategy
Amat et al. (1994)	Management accounting systems	Over the lifecycle of a family firm, informal controls change to more formalized controls. In the analysed case firm, this change in management accounting systems was driven both by internal and external factors
Becker et al. (2011)	Management accounting systems	The basic functions and instruments of management accounting differ only slightly between family and non-family firms. Family firms only use more strategically oriented management accounting practices less often than non-family firms
Craig and Moores (2005)	Balanced scorecard, strategic planning	Family firms can professionalize their management by adopting balanced scorecards and strategy maps. In turn, the balanced scorecard can link a family firms' strategic initiatives to the family businesses' core essence and the founder's values and vision for the firm
Craig and Moores (2010)	Balanced scorecard, strategic planning	The balanced scorecard represents a useful tool that can links and align the family with the business. The balanced scorecard may also assist in the communication among, and the education of, members of the controlling family
Daily and Dollinger (1993)	Various management control instruments	Family firms rely on formal management control instruments to a lesser degree than non-family firms
Dekker et al. (2013)	Various management control instruments	Management control systems are an important part in determining a family firms' degree of professionalization. The authors find that management control systems are especially important in two out of four types of family firms (i.e., in the "domestic configuration" type and the "administrative hybrid" type)
Dekker et al. (2015)	Various management control instruments	Management control systems are part of the wider professionalization process in family firms. The involvement of non-family actors in family firms' governance systems is positively associated with firm performance if the usage of management control systems can be regarded as average or low
Duréndez et al. (2016)	Various management accounting and control instruments	Family firms use less management accounting and control practices than non-family firms. However, family firm performance benefits from the usage of such practices

Table 1 continued

Author(s)	Aspects of management accounting and/or control considered	Main results
Efferin and Hartono (2015)	Management control systems	The societal culture that surrounds a family firm influences the organizational culture of the firm and the design of management control systems. Consequently, management control systems in family firms cannot solely be dictated by the controlling family, but should fit the broader organizational and societal culture
El Masri et al. (2017)	Management control systems	Family firms perceive management control systems as a method to foster economic rationality and reduce familial affectivity
García Pérez de Lema and Duréndez (2007)	Various management accounting and control instruments	Small and medium-sized family firms show lower reliance on management accounting and control systems than comparable non-family firms
Giovannoni et al. (2011)	Balanced scorecard, budgeting, planning	Management accounting practices can be used for transmitting knowledge from senior family generations to junior family generations and non-family managers
Hiebl and Mayrleitner (2017)	Professionalization of management accounting	Not only non-family managers, but also family managers are able to professionalize management accounting in family firms. For being able to drive such professionalization, family managers need both the *ability* and *willingness* to do so
Hiebl et al. (2012)	Management accounting departments	Family businesses establish fewer management accounting departments than do non-family firms. If family firms establish such departments, their heads less often hold university degrees than in non-family firms
Hiebl et al. (2013)	Various management accounting and control instruments	In the transition from a family business to a non-family business, firms rely more on management accounting and control systems. This finding primarily applies to smaller firms, but less for larger firms
Hiebl et al. (2015a)	Various management accounting and control instruments	Family influence is negatively associated with the usage of management accounting and control systems
Huerta et al. (2017)	Cost accounting	While family firm owners hold control over the introduction of management accounting practices in family firms, they can be significantly influenced by suggestions from other family and non-family actors. Such suggestions from family actors are less scrutinized by the owners than suggestions from non-family actors
Jakobsen (2017)	Performance management	Overreliance on traditional non-financial performance measures in farming can lead to a neglect of economic reality in family firms

Table 1 continued

Author(s)	Aspects of management accounting and/or control considered	Main results
Jorissen et al. (2005)	Budgeting, incentive systems	Family firms make less use of budgeting and incentive systems than do non-family firms
Kallmuenzer et al. (2017)	Management control systems	In family firms with relatively low innovativeness, management control systems increase financial performance. Also in family firms with a high degree of managerial autonomy, management control systems increase financial performance.
Leotta et al. (2017)	Various management accounting instruments	In cases of family business succession, the introduction of new management accounting practices can contribute to constructing the leadership profile of the junior generation
Mazzola et al. (2008)	Strategic planning	Including junior family generations in family firms' strategic planning processes enables the junior generations in gaining tacit business knowledge and skills and in building internal and external interpersonal work relationships
Moilanen (2008)	Formal and informal management control systems	The flexibility and informality of small family firms leaves significant room for individuals to maintain a loose coupling between informal control routines and formal reporting for considerable amounts of time
Moores and Mula (2000)	Management control systems	The salience of market, bureaucratic, and clan controls changes over the family business lifecycle
Songini and Gnan (2015)	Management control systems	Family involvement in the board of directors is negatively related to the establishment of management control systems, while the involvement of family members in management is positively related to the establishment of such systems. A higher importance of control systems leads to better financial performance
Songini et al. (2015)	Strategic planning, management control systems	Family members in managerial positions are associated with a higher diffusion of management control systems
Speckbacher and Wentges (2012)	Performance management systems	Family involvement in management teams is negatively related to the usage of performance measurement systems. This relationship is stronger for small firms and weaker for large firms
Stergiou et al. (2013)	Change in management accounting systems	Studies of change in management accounting systems in family firms need to consider both structure and agency. Non-family accounting experts such as CFOs may use their accounting knowledge to preserve their power in the family firm
Upton et al. (2001)	Operational planning, strategic planning	The majority of fast growth family firms prepares formal strategic and operational business plans. These plans enable effective control over the business

egy and leadership; and, (4) *stewardship* focusses on the underlying individual- and business-level reasons why family businesses differ from their non-family counterparts. The four AGES dimensions provide a framework for analysing the key specifics of family firms. We will now briefly explain how each of these four dimensions affects or represents differences between family and non-family firms' organization of management accounting and control. Note, however, that the AGES framework is not meant to provide a definition of what constitutes a family firm. There are many family business definitions available in the literature, although none has yet found general acceptance (Craig and Moores 2015; O'Boyle et al. 2012; Steiger et al. 2015).

2.1 Architecture

As coined by Craig and Moores (2015, p. 130), architecture "captures the structures and the systems in place to deliver the company's strategy". Structures are often described as giving people formally defined roles, responsibilities and lines of reporting. Systems can be understood as supporting and controlling people as they carry out these structurally defined roles and responsibilities (Johnson et al. 2017). From these definitions, it seems clear that management accounting and control systems are important parts of architecture since management accounting and control systems are regularly put in place to ensure that "the behaviour of employees (or some other relevant party, such as a collaborating organisation) is consistent with the organisation's objectives and strategy" (Malmi and Brown 2008, p. 295).

Family firms are often described as differing from non-family firms in terms of their architecture. For instance, family firms often have less complex and less formal structures (e.g., Stewart and Hitt 2012; Zhang and Ma 2009). Many managers in family firms are therefore given more power and discretion in decision-making, which may lead to family firms' higher flexibility as compared to non-family firms (Craig and Moores 2015, 2017). Similarly, systems in family firms are generally understood to be less formalized than in non-family firms. This also applies to management accounting and control systems. For instance, several survey-based articles conclude that family firms, on average, show lower application levels of formal management accounting and control practices such as strategic planning, performance management systems and operational planning than non-family firms do (Daily and Dollinger 1993; Hiebl et al. 2013, 2015a; Speckbacher and Wentges 2012). Some of these survey results find that these differences between family and non-family firms are more pronounced among small firms and less so among large firms (Hiebl et al. 2013; Speckbacher and Wentges 2012). It thus seems that when growing larger and older, family firms increasingly rely on more formal management accounting and control systems—which is also found in longitudinal, case-based research on family firms (Amat et al. 1994; Giovannoni et al. 2011; Moores and Mula 2000; Moores and Yuen 2001). It could therefore be argued that when growing in size, family firms become more similar to non-family firms in terms of formal management accounting and control instruments.

Family firms not only differ from non-family firms in the magnitude and timing of such elements of architecture. In family firms, management accounting and control systems may—if introduced in the first place—also serve different—and sometimes

additional purposes. For instance, Mazzola et al. (2008) found that strategic planning in family firms may serve as a "training ground" for junior family generations in learning the business and its stakeholders. According to their findings, including junior family generations in family firms' strategic planning processes enables the junior generations in gaining tacit business knowledge and skills and in building internal and external interpersonal work relationships.

2.2 Governance

In the AGES framework, governance refers to the "processes that are needed to provide oversight of the direction, control and accountability functions of the firm" (Craig and Moores 2015, p. 137). That is, the governance dimension deals with who decides whether and when. All firms can be considered as having governance, albeit sometimes informal—as is the case in many family firms (Craig and Moores 2015). Even if organized more informally, governance is often rather complex in family firms. In such firms, not only business considerations play a role, but also family interests and those of other owners. This is why family firms are often described as systems comprising of three subsystems: the family system, the business system, and the ownership system (Gersick et al. 1997).

Many managerial positions in family firms are held by members of the controlling family, which can result in a lower need for formal control and monitoring (Daily and Dollinger 1992). It is often assumed that trust between family members can replace formal mechanisms. However, not all family firms are fully family-owned and -managed. In fact, research shows that non-family managers and directors can bring in important external knowledge and experience to family firms (Bammens et al. 2011; Bettinelli 2011; Hiebl 2014; Klein and Bell 2007; Siebels and zu Knyphausen-Aufseß 2012; Tabor et al. 2017).

In particular, when boards and management teams are equipped with both family and non-family members, the governance structure can have important implications for the design of management accounting and control systems in family firms. Moreover, management accounting and control systems can play a decisive role in family business governance. For instance, the composition of family firms' boards and management teams seems to have an impact on the usage and design of management accounting and control systems (e.g., Songini and Gnan 2015; Songini et al. 2013). At the same time, management accounting and control systems can support the family in monitoring non-family managers (Hiebl et al. 2012). Besides monitoring, incentive systems are often described as a mechanism to align business interests with family interests (Chrisman et al. 2004). While formal monetary incentive systems are considered to be at the very core of management accounting and control research (e.g., Shields 2015), empirical findings on their application in family firms seem scarce. An exception is the study by Memili et al. (2013), showing that family firms—especially those owned and managed by family—are less likely to use monetary incentives for non-family managers compared to non-family firms.

2.3 Entrepreneurship

The entrepreneurship dimension of the AGES framework refers to family firms' core strategy and the necessity to act entrepreneurially in order to survive in the market. This necessity manifests differently in family and non-family firms and is contingent on family-firm characteristics (Craig and Moores 2015). Given their objective of retaining the firms in the hands of the family, many family firms show a long-term orientation in their entrepreneurial behaviour. That is, family firms often have long-tenured CEOs (Miller et al. 2008), they prefer longer investment horizons (James 1999), and they are more patient with their invested capital than in non-family firms (Sirmon and Hitt 2003). Such long-term orientation may, however, also have a downside. For instance, long-term orientation may result in family firms' exaggerated risk aversion and difficulties in delivering innovation to succeed in the market—a problem that may materialize particularly in family firms that have moved beyond the founder generation (Hiebl 2013, 2015).

In general contingency-based management accounting and control research, strategy is depicted as an important factor explaining variance in the design of management accounting and control systems (Chenhall 2003; Otley 2016). Recent research indicates that strategy is also significantly associated with management control system design in family firms (Acquaah 2013). However, there is also evidence that growing family firms may be reluctant to introducing more formal management control systems such as strategic planning due to the fear of losing their entrepreneurial spirit (Mintzberg and Waters 1982; Nordqvist and Melin 2008, 2010). The above presented findings showing that especially among smaller firms, family firms are less prone to use formal management accounting and control instruments, can be interpreted as indicating that small, but growing family firms are more reluctant to using such controls as compared to their non-family counterparts. Thus, the relationship between family business entrepreneurship and the design of management accounting and control systems may not necessarily be complementary. The design of such systems may very much depend on the form of entrepreneurship in family firms (cf. Kallmuenzer et al. (2017)).

2.4 Stewardship

Finally, the stewardship dimension refers to the question why many family firms differ from non-family firms. The AGES framework suggests that the answer to this question lies in stewardship behaviour (Craig and Moores 2015, 2017). In general, stewardship theory suggests that not all agents are extrinsically motivated and act in their own interest, but some agents are intrinsically motivated and serve in others' interest. These latter agents are considered to be stewards (Davis et al. 1997; Hernandez 2012). Since family members are often serving the family business rather than their own interests, stewardship theory has become one of the most frequently applied theories in family business research (Madison et al. 2016; Neubaum et al. 2017; Siebels and zu Knyphausen-Aufseß 2012).

A family business culture characterized by stewardship can contribute towards explaining particularities often associated with family firms—such as trust, altruism, non-financial relational contacts, and a warm atmosphere for employees (Corbetta and Salvato 2004; Miller et al. 2008). At the same time, stewardship in family firms can also explain the design of management accounting and control systems in such firms. For instance, it is argued that in an environment characterized by stewardship, there is lower need for formal monitoring and control. Since monitoring and control are two functions of management accounting and control systems, family firms showing a stewardship culture should rely less on formal management accounting and control systems (e.g., Hiebl et al. 2013).

3 AGES-linked suggestions for future research on management accounting and control in family firms

3.1 Architecture

While information systems and technology architecture—more specifically those systems and technologies that affect management accounting—have been the subject of many studies in leading accounting journals, there appears to be potential for studies that take into account the peculiarities of family business. To give a general example, there were many studies in the late 1990s and early 2000s that explored the critical success factors of enterprise resource planning system implementations—see for example, Holland and Light (1999), Parr and Shanks (2000) or Umble et al. (2003). One common thread of such studies is that the support of top management is needed to bring about systems change successfully—something that still holds today. From this, some obvious questions come to mind thinking from a family business perspective—is family support a critical success factor in accounting systems change in family firms; is change to accounting information systems architecture easier or more difficult in family firms? Such questions have been addressed in extant research on small businesses (see for example, Blili and Raymond 1993; Harrison et al. 1997; Raymond 1985). However, such research has mainly focussed on the smallness of the analysed businesses, but has not yet examined the effects of family firm specifics as suggested by the AGES framework. As prior research has also shown that small family firms are often more reluctant to adopt novel information technology than small non-family firms (Bruque and Moyano 2007), we believe more consideration of family firms in the research on accounting information systems is warranted. Such research could pay closer attention to the specifics of family firms when adopting such systems (or not) and the barriers to be overcome to successful implementation in a family-business context.

In addition to such research, there is, we believe, an even more interesting and contemporary field of research on accounting information systems and technology architecture to be undertaken in family firms. Professional accounting magazines have been writing about the effect of cloud computing on business and the practice of accounting for many years now. However, even in mainstream accounting journals little has been written on how cloud technologies affect management accounting.

One reason for this may again be the over-presence of research on large non-family firms in such literature, whereas the technology may even have a greater impact on small family firms. For example, referring to small and medium enterprises (SME), Strauss et al. (2014) noted that cloud technology can reduce costs, allows access to technology hardware being previously the realm of large firms, and is flexible in terms of software services used and information provided to end-users (see also Kristandl et al. 2015). Of course, the cloud has been enabled to a large extent by the hand-held devices such as smartphones and tablets, alongside increasing service provision—including the provision of accounting and other decision support software. The effects of such developments have yet to be explored in a small family business context. Quinn (2017) for example notes how cloud technology can bring accounting software to the smallest of organisations—a sole trader. Also, previous research has suggested that professionalization (which includes management accounting) is under-researched in family business (Debicki et al. 2009; Hiebl and Mayrleitner 2017; Stewart and Hitt 2012). Taking these two items together, it would seem there is scope for research on how the use of cloud technology in family firms affects concepts such as professionalization and other notions in family business. For example, the increased use of accounting software and systems in the cloud has been shown by Cleary and Quinn (2016) to be related to improved performance in SMEs. Their study was survey-based, and more in-depth qualitative studies of family firms using cloud technology in accounting would be useful. More importantly, as cloud technology has the ability to open up management accounting tools to many more family firms, particularly smaller ones, this increases the pool of potentially interesting family firms to be studied from a management accounting perspective.

3.2 Governance

As alluded to above, evolving systems and technology architecture through developments such as cloud-based technology may significantly contribute to the professionalization and governance of family firms. This is especially true for family firms experiencing growth (e.g., Moores and Mula 2000; Moores and Yuen 2001). Besides information technology, other governance-linked factors may also contribute to the increased focus on management accounting and control systems. For instance, studies which investigate professionalization and governance often include reference to professional non-family actors such as Chief Financial Officers (CFOs), controllers or accountants as drivers of this process (e.g., Amat et al. 1994; Giovannoni et al. 2011; Hiebl 2014, 2017; Huerta et al. 2017; Stergiou et al. 2013). While we know that such external experts are often the primary choice for family firms seeking professionalization of their governance broadly and more specifically of their management accounting and control systems, we have limited evidence on *how* such experts actually facilitate the professionalization of family firms. Research that pursues questions to understand the professionalization process of both the business and the family would be interesting for both research and practice.

3.3 Entrepreneurship

Research that links the AGES dimensions of entrepreneurial strategy and entrepreneurial leadership with management accounting and control would be beneficial (cf. Kallmuenzer et al. 2017). Such research could focus on outcomes, which is fundamental to all strategy research. Outcomes research in the nascent literature on management accounting and control in family firms typically has concentrated on the impact of management and accounting systems on financial performance. As summarized by Helsen et al. (2017), these studies have yielded mixed results—that is, some studies show that family firms with certain management accounting and control practices perform better than other sorts of firms (e.g., Acquaah 2013; Duréndez et al. 2016; Kallmuenzer et al. 2017; Songini and Gnan 2015), while other studies show negative or non-significant effects for firm performance (e.g., Dekker et al. 2015). Further studies have not concentrated on financial outcomes, but on outcomes for the family such as increased knowledge sharing within the family and the business (e.g., Giovannoni et al. 2011; Mazzola et al. 2008). While the dual financial and non-financial motives of family firms are well recognized, the strong focus on financial outcomes of management accounting and control systems in family firms suggests that existing research has somewhat overlooked family business peculiarities (cf. Helsen et al. 2017). Thus, multiple rich research opportunities exist which integrates both financial and family-related non-financial outcomes of management accounting and control systems in family firms. Such research could not only enable family firm practice to better foresee the aftermath of a more intense usage of management accounting and control systems, but could also provide them with reasons as to why more intense usage could “pay off” for them.

3.4 Stewardship

The field of accounting and business history also offers many opportunities for future research on management accounting and control from a family business stewardship perspective. For example, the work of Quinn and colleagues (see for example, Quinn 2014; Quinn and Jackson 2014; Hiebl et al. 2015b) has focused on the management accounting practices of the brewing sector from a historical perspective. As noted by Gourvish and Wilson (1994), many breweries were incorporated in the latter part of the nineteenth century—a trend not unique to the brewing sector. Many such breweries were family-run businesses prior to incorporation and the families retained majority shareholdings in the business for many years. Quinn and Kristandl (2017) for example, note the ongoing interest of the Whitbread family in the company of the same name after incorporation in 1890. Similarly, the Guinness family remained heavily involved in the running of the brewery of the same name in Dublin for almost a century after incorporation in 1886. However, none of the studies mentioned consider the fact that the firms were, either in essence or fact, a family firm, and thus do not consider the growing body of literature and theoretical discussion on family firms. The brewing sector is of course just one business sector and there are many other family firms with

historical accounting records in other sectors which remain open to analysis from a family business stewardship perspective (cf. Colli 2011).

In more recent years, the accounting and business history literature, while utilising mainstream theories to tease out findings, has also adopted a more historical approach to understanding theoretical concepts (see for example, Rowlinson and Hassard 2013). This approach suggests our present-day theories and concepts can be illuminated by historical studies, something which seems particularly relevant as we develop concepts and theories specific to the family business realm. While at present there is no journal which specifically focuses on the accounting and/or business history of family business, it is a potentially quite open area. For example, a recent review of all articles in the three leading English-language accounting history journals—*Accounting History, Accounting History Review* and *The Accounting Historian's Journal*—revealed just three articles containing the word "family" in the title. This review by Spraakaman and Quinn (2017) examined a total of 443 articles from 2006 to 2015, and while the review may not reveal all articles on family business from article titles, it is an indication of a lack of research on accounting history from a family business perspective.

Research questions that explore stewardship of family firms could focus on what role have multi-generational families had in the operations and development of the accounting function. It would be interesting to review accounting records over an extended historical timeframe to gain insights into the family business sub-systems interplay, as suggested by Gersick et al.'s (1997) three-circle model. As indicated above, such research could not only be of historical interest, but could also inform current family business practice. Many contemporary family firms share the goal of a long-term sustainable development (e.g., Le Breton-Miller and Miller 2006; Lumpkin et al. 2010). Future research focussing on how some family firms have managed to survive over extended periods of time and how accounting and control instruments have helped in this endeavour could yield valuable insights for family business management.

4 Conclusions

Mainstream management accounting and control systems research has typically focused upon a generic class of business to distil findings about factors affecting the design and operation of such systems. Over time more and more variables have been examined within contingency frameworks. The most commonly examined **external variables** include technology, market competition or hostility, environmental uncertainty, and national culture (Chenhall 2003; Otley 2016). The major **internal variables** are organizational size, structure, strategy, compensation systems, information systems, psychological variables (e.g., tolerance for ambiguity), employees' participation in the control systems, market position, product life-cycle stage, and systems change (Chenhall 2003; Otley 2016). The most widely examined dependent variables are performance, performance measures, budgeting behaviour, management control system design and its use, effectiveness, job satisfaction, change in practices, and product innovation. Performance, effectiveness and design of systems are the major dependent variables used with financial performance being the most commonly used outcome

variable (Otley 2016). However, there is evidence to suggest that family firms differ systematically from non-family firms across a range of these variables thereby suggesting that the design and operation of their management accounting and control systems should and will be different.

In this paper, we have identified and coalesced these differences as architecture, governance, entrepreneurship, and stewardship and suggested where management accounting and control systems design and operation might be affected. This categorization of variables captures many of the external and internal independent variables likely to affect the control system dependent variables. Furthermore, the categorization lends itself to an orderly program of research starting with the projects identified above that will contribute to not only family business research but more generally to management accounting and control research.

Acknowledgements We gratefully acknowledge helpful comments from two anonymous reviewers, which have greatly helped us in sharpening our arguments.

References

Acquaah, M. (2013). Management control systems, business strategy and performance: A comparative analysis of family and non-family businesses in a transition economy in sub-Saharan Africa. *Journal of Family Business Strategy*, *4*(2), 131–146.

Amat, J., Carmona, S., & Roberts, H. (1994). Context and change in management accounting systems: A Spanish case study. *Management Accounting Research*, *5*(2), 107–122.

Bammens, Y., Voordeckers, W., & Gils, A. V. (2011). Boards of directors in family businesses: A literature review and research agenda. *International Journal of Management Reviews*, *13*(2), 134–152.

Becker, W., Ulrich, P., & Staffel, M. (2011). Management accounting and controlling in German SMEs–Do company size and family influence matter? *International Journal of Entrepreneurial Venturing*, *3*(3), 281–300.

Bettinelli, C. (2011). Boards of directors in family firms: An exploratory study of structure and group process. *Family Business Review*, *24*(2), 151–169.

Blili, S., & Raymond, L. (1993). Information technology: Threats and opportunities for small and medium-sized enterprises. *International Journal of Information Management*, *13*(6), 439–448.

Bruque, S., & Moyano, J. (2007). Organisational determinants of information technology adoption and implementation in SMEs: The case of family and cooperative firms. *Technovation*, *27*(5), 241–253.

Chenhall, R. H. (2003). Management control systems design within its organizational context: Findings from contingency-based research and directions for the future. *Accounting, Organizations and Society*, *28*(2–3), 127–168.

Chrisman, J. J., Chua, J. H., & Litz, R. A. (2004). Comparing the agency costs of family and non-family firms: Conceptual issues and exploratory evidence. *Entrepreneurship Theory and Practice*, *28*(4), 335–354.

Cleary, P., & Quinn, M. (2016). Intellectual capital and business performance. *Journal of Intellectual Capital*, *17*(2), 255–278.

Colli, A. (2011). Business history in family business studies: From neglect to cooperation? *Journal of Family Business Management*, *1*(1), 14–25.

Corbetta, G., & Salvato, C. A. (2004). The board of directors in family firms: One size fits all? *Family Business Review*, *17*(2), 119–134.

Craig, J., & Moores, K. (2005). Balanced scorecards to drive the strategic planning of family firms. *Family Business Review*, *18*(2), 105–122.

Craig, J., & Moores, K. (2010). Strategically aligning family and business systems using the Balanced Scorecard. *Journal of Family Business Strategy*, *1*(2), 78–87.

Craig, J. B., & Moores, K. (2015). The A-GES framework: Understanding the family business difference. In S. L. Newbert (Ed.), *Small business in a global economy: Creating and managing successful organizations* (pp. 123–154). Santa Barbara: Praeger.

Craig, J. B., & Moores, K. (2017). *Leading a family business: Best practices for long term stewardship*. Santa Barbara: Praegar Publishing.

Daily, C. M., & Dollinger, M. J. (1992). An empirical examination of ownership structure in family and professionally managed firms. *Family Business Review*, *5*(2), 117–136.

Daily, C. M., & Dollinger, M. J. (1993). Alternative methodologies for identifying family-versus nonfamily-managed businesses. *Journal of Small Business Management*, *31*(2), 79–90.

Davis, J. H., Schoorman, F. D., & Donaldson, L. (1997). Toward a stewardship theory of management. *Academy of Management Review*, *22*(1), 20–47.

Debicki, B. J., Matherne, C. F., Kellermanns, F. W., & Chrisman, J. J. (2009). Family business research in the new millennium: An overview of the who, the where, the what, and the why. *Family Business Review*, *22*(2), 151–166.

Dekker, J., Lybaert, N., Steijvers, T., & Depaire, B. (2015). The effect of family business professionalization as a multidimensional construct on firm performance. *Journal of Small Business Management*, *53*(2), 516–538.

Dekker, J. C., Lybaert, N., Steijvers, T., Depaire, B., & Mercken, R. (2013). Family firm types based on the professionalization construct: Exploratory research. *Family Business Review*, *26*(1), 81–99.

Duréndez, A., Ruíz-Palomo, D., García-Pérez-de-Lema, D., & Diéguez-Soto, J. (2016). Management control systems and performance in small and medium family firms. *European Journal of Family Business*, *6*(1), 10–20.

Efferin, S., & Hartono, M. S. (2015). Management control and leadership styles in family business. *Journal of Accounting & Organizational Change*, *11*(1), 130–159.

El Masri, T. E., Tekathen, M., Magnan, M., & Boulianne, E. (2017). Calibrating management control technologies and the dual identity of family firms. *Qualitative Research in Accounting & Management*, *14*(2), 157–188.

Pérez, García, de Lema, D., & Duréndez, A. (2007). Managerial behaviour of small and medium-sized family businesses: An empirical study. *International Journal of Entrepreneurial Behavior & Research*, *13*(3), 151–172.

Gersick, K. E., Davis, J. A., McCollom Hampton, M., & Lansberg, I. (1997). *Generation to generation: Life cycles of the family business*. Boston: Harvard Business Press.

Giovannoni, E., Maraghini, M. P., & Riccaboni, A. (2011). Transmitting knowledge across generations: The role of management accounting practices. *Family Business Review*, *24*(2), 126–150.

Gourvish, T. R., & Wilson, R. G. (1994). *The British brewing industry 1830–1980*. Cambridge: Cambridge University Press.

Harrison, D. A., Mykytyn, P. P., & Riemenschneider, C. K. (1997). Executive decisions about adoption of information technology in small business: Theory and empirical tests. *Information Systems Research*, *8*(2), 171–195.

Helsen, Z., Lybaert, N., Steijvers, T., Orens, R., & Dekker, J. (2017). Management control systems in family firms: A review of the literature and directions for the future. *Journal of Economic Surveys*, *31*(2), 410–435.

Hernandez, M. (2012). Toward an understanding of the psychology of stewardship. *Academy of Management Review*, *37*(2), 172–193.

Hiebl, M. R. W. (2013). Risk aversion in family firms: What do we really know? *The Journal of Risk Finance*, *14*(1), 49–70.

Hiebl, M. R. W. (2014). A finance professional who understands the family: Family firms' specific requirements for non-family chief financial officers. *Review of Managerial Science*, *8*(4), 465–494.

Hiebl, M. R. W. (2015). Family involvement and organizational ambidexterity in later-generation family businesses: A framework for further investigation. *Management Decision*, *53*(5), 1061–1082.

Hiebl, M. R. W. (2017). Finance managers in family firms: An upper-echelons view. *Journal of Family Business Management*, *7*(2), 207–220.

Hiebl, M. R. W., Duller, C., Feldbauer-Durstmüller, B., & Ulrich, P. (2015). Family influence and management accounting usage-findings from Germany and Austria. *Schmalenbach Business Review*, *67*(3), 368–404.

Hiebl, M. R. W., Feldbauer-Durstmüller, B., & Duller, C. (2013). The changing role of management accounting in the transition from a family business to a non-family business. *Journal of Accounting & Organizational Change*, *9*(2), 119–154.

Hiebl, M. R. W., Feldbauer-Durstmüller, B., Duller, C., & Neubauer, H. (2012). Institutionalisation of management accounting in family businesses–Empirical evidence from austria and Germany. *Journal of Enterprising Culture*, *20*(4), 405–436.

Hiebl, M. R. W., & Mayrleitner, B. (2017, forthcoming). Professionalization of management accounting in family firms: The impact of family members. *Review of Managerial Science*, https://doi.org/10.1007/s11846-017-0274-8.

Hiebl, M. R. W., Quinn, M., & Franco, C. M. (2015). An analysis of the role of a Chief Accountant at Guinness c. 1920–1940. *Accounting History Review*, *25*(2), 145–165.

Holland, C., & Light, B. (1999). A critical success factors model for ERP implementation. *IEEE Software*, *16*(3), 30–36.

Huerta, E., Petrides, Y., & O'Shaughnessy, D. (2017). Introduction of accounting practices in small family businesses. *Qualitative Research in Accounting & Management*, *14*(2), 111–136.

IFERA. (2003). Family businesses dominate. *Family Business Review*, *16*(4), 235–240.

Jakobsen, M. (2017). Consequences of intensive use of non-financial performance measures in Danish family farm holdings. *Qualitative Research in Accounting & Management*, *14*(2), 137–156.

James, H. S. (1999). What can the family contribute to business? *Examining contractual relationships. Family Business Review*, *12*(1), 61–71.

Jensen, M. C., & Meckling, W. H. (1976). Theory of the firm: Managerial behavior, agency costs and ownership structure. *Journal of Financial Economics*, *3*(4), 305–360.

Johnson, G., Whittington, R., Scholes, K., Angwin, D., & Regnér, P. (2017). *Exploring strategy: Text and cases* (11th ed.). Harlow: Pearson Education.

Jorissen, A., Laveren, E., Martens, R., & Reheul, A. (2005). Real versus sample-based differences in comparative family business research. *Family Business Review*, *18*(3), 229–246.

Kallmuenzer, A., Strobl, A., & Peters, M. (2017). Tweaking the entrepreneurial orientation -performance relationship in family firms: the effect of control mechanisms and family-related goals. *Review of Managerial Science*, https://doi.org/10.1007/s11846-017-0231-6.

Klein, S., & Bell, F. A. (2007). Non-family executives in family businesses: A literature review. *Electronic Journal of Family Business Studies*, *1*(1), 19–37.

Kristandl, G., Quinn, M., & Strauß, E. (2015). Controlling und cloud computing–Wie die Cloud den Informationsfluss in KMU ändert. *Zeitschrift für KMU und Entrepreneurship*, *63*(3–4), 281–304.

Le Breton-Miller, I., & Miller, D. (2006). Why do some family businesses out-compete? Governance, long-term orientations, and sustainable capability. *Entrepreneurship Theory and Practice*, *30*(6), 731–746.

Leotta, A., Rizza, C., & Ruggeri, D. (2017). Management accounting and leadership construction in family firms. *Qualitative Research in Accounting & Management*, *14*(2), 189–207.

Lumpkin, G. T., Brigham, K. H., & Moss, T. W. (2010). Long-term orientation: Implications for the entrepreneurial orientation and performance of family businesses. *Entrepreneurship and Regional Development*, *22*(3–4), 241–264.

Madison, K., Holt, D. T., Kellermanns, F. W., & Ranft, A. L. (2016). Viewing family firm behavior and governance through the lens of agency and stewardship theories. *Family Business Review*, *29*(1), 65–93.

Malmi, T., & Brown, D. A. (2008). Management control systems as a package–Opportunities, challenges and research directions. *Management Accounting Research*, *19*(4), 287–300.

Mazzola, P., Marchisio, G., & Astrachan, J. (2008). Strategic planning in family business: A powerful developmental tool for the next generation. *Family Business Review*, *21*(3), 239–258.

Memili, E., Misra, K., Chang, E. P., & Chrisman, J. J. (2013). The propensity to use incentive compensation for non-family managers in SME family firms. *Journal of Family Business Management*, *3*(1), 62–80.

Miller, D., Breton-Miller, I. L., & Scholnick, B. (2008). Stewardship vs. stagnation: An empirical comparison of small family and non-family businesses. *Journal of Management Studies*, *45*(1), 51–78.

Mintzberg, H., & Waters, J. A. (1982). Tracking strategy in an entrepreneurial firm. *Academy of Management Journal*, *25*(3), 465–499.

Moilanen, S. (2008). The role of accounting in the management control system: A case study of a family-led firm. *Qualitative Research in Accounting & Management*, *5*(3), 165–183.

Moores, K., & Mula, J. (2000). The salience of market, bureaucratic, and clan controls in the management of family firm transitions: Some tentative Australian evidence. *Family Business Review*, *13*(2), 91–106.

Moores, K., & Yuen, S. (2001). Management accounting systems and organizational configuration: A life-cycle perspective. *Accounting, Organizations and Society*, *26*(4–5), 351–389.

Neubaum, D. O., Thomas, C. H., Dibrell, C., & Craig, J. B. (2017). Stewardship climate scale: An assessment of reliability and validity. *Family Business Review*, *30*(1), 37–60.

Nordqvist, M., & Melin, L. (2008). Strategic planning champions: Social craftspersons, artful interpreters and known strangers. *Long Range Planning*, *41*(3), 326–344.

Nordqvist, M., & Melin, L. (2010). The promise of the strategy as practice perspective for family business strategy research. *Journal of Family Business Strategy*, *1*(1), 15–25.

O'Boyle, E. H., Pollack, J. M., & Rutherford, M. W. (2012). Exploring the relation between family involvement and firms' financial performance: A meta-analysis of main and moderator effects. *Journal of Business Venturing*, *27*(1), 1–18.

Otley, D. (2016). The contingency theory of management accounting and control: 1980–2014. *Management Accounting Research*, *31*, 45–62.

Parr, A., & Shanks, G. (2000). A model for ERP project implementation. *Journal of Information Technology*, *15*(4), 289–303.

Prencipe, A., Bar-Yosef, S., & Dekker, H. C. (2014). Accounting research in family firms: Theoretical and empirical challenges. *European Accounting Review*, *23*(3), 361–385.

Quinn, M. (2014). Stability and change in management accounting over time–A century or so of evidence from Guinness. *Management Accounting Research*, *25*(1), 76–92.

Quinn, M. (2017). Are routines "really" an organisational concept? Maybe not for management accounting!. *Revista de Ciências Empresariais e Jurídicas*, *28*, 29–46.

Quinn, M., & Jackson, W. J. (2014). Accounting for war risk costs: Management accounting change at Guinness during the First World War. *Accounting History Review*, *24*(2–3), 191–209.

Quinn, M., & Kristandl, G. (2017, forthcoming). Internal accounting practices at Whitbread & Company, c. 1890–1925. *Accounting History*, https://doi.org/10.1177/1032373217734384.

Raymond, L. (1985). Organizational characteristics and MIS success in the context of small business. *MIS Quarterly*, *9*(1), 37–52.

Rowlinson, M., & Hassard, J. S. (2013). Historical neo-institutionalism or neo-institutionalist history? Historical research in management and organisation studies. *Management and Organisational History*, *8*(2), 111–126.

Salvato, C., & Moores, K. (2010). Research on accounting in family firms: Past accomplishments and future challenges. *Family Business Review*, *23*(3), 193–215.

Senftlechner, D., & Hiebl, M. R. W. (2015). Management accounting and management control in family businesses: Past accomplishments and future opportunities. *Journal of Accounting & Organizational Change*, *11*(4), 573–606.

Shields, M. D. (2015). Established management accounting knowledge. *Journal of Management Accounting Research*, *27*(1), 123–132.

Siebels, J., & zu Knyphausen-Aufseß, D., (2012). A review of theory in family business research: The implications for corporate governance. *International Journal of Management Reviews*, *14*(3), 280–304.

Sirmon, D. G., & Hitt, M. A. (2003). Managing resources: Linking unique resources, management, and wealth creation in family firms. *Entrepreneurship Theory and Practice*, *27*(4), 339–358.

Songini, L., & Gnan, L. (2015). Family involvement and agency cost control mechanisms in family small and medium-sized enterprises. *Journal of Small Business Management*, *53*(3), 748–779.

Songini, L., Gnan, L., & Malmi, T. (2013). The role and impact of accounting in family business. *Journal of Family Business Strategy*, *4*(2), 71–83.

Songini, L., Morelli, C., Gnan, L., & Vola, P. (2015). The why and how of managerialization of family businesses: Evidences from Italy. *Piccola Impresa/Small Business*, *28*(1), 86–118.

Speckbacher, G., & Wentges, P. (2012). The impact of family control on the use of performance measures in strategic target setting and incentive compensation: A research note. *Management Accounting Research*, *23*(1), 34–46.

Spraakaman, G., & Quinn, M. (2017). Accounting history research topics—An analysis of leading journals 2006–2015. In *European Accounting Association Annual Conference, Valencia, Spain*, May 10–12.

Steiger, T., Duller, C., & Hiebl, M. R. W. (2015). No consensus in sight: An analysis of ten years of family business definitions in empirical research studies. *Journal of Enterprising Culture*, *23*(1), 25–62.

Stergiou, K., Ashraf, J., & Uddin, S. (2013). The role of structure and agency in management accounting control change of a family owned firm: A Greek case study. *Critical Perspectives on Accounting*, *24*(1), 62–73.

Stewart, A., & Hitt, M. A. (2012). Why can't a family business be more like a nonfamily business? *Family Business Review*, *25*(1), 58–86.

Strauss, E., Kristandl, G., & Quinn, M. (2014). The effects of cloud technology on management accounting and decision making. In *CIMA Research Executive Summary Series* (Vol. 10, No. 6), http://www.cimaglobal.com/Documents/Thought_leadership_docs/Management%20and%20financial%20accounting/effects-of-cloud-technology-on-management-accounting.pdf. Accessed July 12, 2017.

Tabor, W., Chrisman, J. J., Madison, K., & Vardaman, J. M. (2017, forthcoming). Nonfamily members in family firms: A review and future research agenda. *Family Business Review*, https://doi.org/10.1177/0894486517734683.

Umble, E., Haft, R., & Umble, M. (2003). Enterprise resource planning: Implementation procedures and critical success factors. *European Journal of Operational Research*, *146*(2), 241–257.

Upton, N., Teal, E. J., & Felan, J. T. (2001). Strategic and business planning practices of fast growth family firms. *Journal of Small Business Management*, *39*(1), 60–72.

Zhang, J., & Ma, H. (2009). Adoption of professional management in Chinese family business: A multilevel analysis of impetuses and impediments. *Asia Pacific Journal of Management*, *26*(1), 119–139.