Management Accounting Research 22 (2011) 160–180

Contents lists available at ScienceDirect

Management Accounting Research

journal homepage: www.elsevier.com/locate/mar

Integration of financial and management accounting systems: The mediating influence of a consistent financial language on controllership effectiveness

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ARTICLE INFO

Keywords:
Controllership effectiveness
Integrated accounting system
Financial language
Structural equation modelling

ABSTRACT

Two fundamental options exist for management accounting system (MAS) design: Either financial records can be used as a database for management accounting (integrated accounting system design), or the MAS can be based upon a separate system, i.e., a third set of books beside financial and tax accounting records. Since the 1990s, many German-speaking firms have changed from the second to the first option, which has instigated a highly controversial debate.

Our paper contributes to this debate by empirically analyzing (1) whether the integration of financial and management accounting has a positive impact on controllership effectiveness, and (2) what causal inferences relate both variables. We use structural equation modelling for a sample of 149 dyads surveyed from German top 1500 firms. We identify no significant effect of the technical aspects of MAS integration, but a fully mediating influence of a consistent financial language on controllership effectiveness. Our results thus imply that consistency with financial reporting is an important property of MAS design from management's point of view.

> "It has always struck me as odd that there is such a large distinction made between management accounting and financial accounting in academia. [. . .] Yet at the conceptual level there is a tremendous amount of overlap between the two."
>
> (Lambert, 2007, p. 265)

1. Introduction

Even though the strategic as well as operational impact of managerial action is directed at non-financial goals, like productivity level, sales volume, market share or stakeholders' potential for consumption, most firms use accounting information for decision-making and control purposes. Literature on management control systems provides several arguments for this prevalence (Merchant and Van der Stede, 2007; Malina and Selto, 2004). For example, accounting data are congruent with the organizational goal of profit maximization and can be tailored to managerial decision-making and control problems on each hierarchy level. The accounting model of a firm's transactions is to a large extent causally related to the business's economic success, so that accounting information supports result controls. The predominant use of accounting information as a control mechanism is reflected in management's bonus contracts, which usually include at least one accounting-based measure, e.g., residual income or ratio measures (Murphy, 1999; Ittner et al., 1997).

To provide accounting information for decision-making and control purposes, two fundamental options exist.

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doi:10.1016/j.mar.2011.03.003

- On the one hand, the financial accounting records can be used as the main database for management accounting techniques (e.g., product costing or budgeting), reporting and performance measurement. We refer to such a design of the management accounting system (MAS), which is typically observed in Anglo-American firms, as 'integrated'. Two major advantages can be found with an integrated accounting system design. First, management accounting information is provided at low incremental cost. Second, internal and financial performance measures are easily reconciled on all hierarchy levels, providing management as well as investors with 'one version of the truth'. This point is of special importance in capital market-oriented firms in which clear links between investors' targets and management accounting information are needed. Nevertheless, the financial accounting data may not in all cases be suitable for management control purposes, as the underlying accounting regulation is not designed for internal decision-making and/or decision-influencing purposes in the first instance (e.g., Kaplan, 1984).
- On the other hand, the MAS can be based upon a so-called separate third set of books beside the financial and tax accounting records. Such a 'separate' or 'dual' design (Jones and Luther, 2005) has traditionally been used in continental European and especially in German-speaking countries. An integral feature of a separate MAS design is the use of non-GAAP-based accruals for internal planning, budgeting and performance measurement. Such accruals may be imputed costs (e.g., depreciation or cost of material based on replacement values, lump-sum risk provisioning, or opportunity costs for owners' assets, capital and/or labour input). A major argument supporting a separate accounting system design is the high degree of case-by-case flexibility in measuring resource consumption and output with respect to decision-making and control problems at hand – a philosophy that can be described as 'different costs for different purposes'. Jones and Luther (2005) claim that the benefits of being able to freely design financial controls under a separate accounting system design might even outweigh the disadvantage of not being able to reconcile internal and external performance measures at top-management or business-segment level. Additionally, the use of cost-based operational controls allows for tight management control structures as the local cost data are aggregated and monitored by top management. In integrated accounting systems, however, local controls are based on non-financial information, with middle management 'shielding' local managers from corporate financial goals (Euske et al., 1993).

Since the 1990s, an increasing number of German firms have changed their accounting systems from a separate to an integrated design for decision-making and control purposes (Ewert and Wagenhofer, 2007; Wagenhofer, 2006; Jones and Luther, 2005). Today, professional practice uses pure types of integrated or separated accounting systems as well as hybrid forms ('partial integration'; Angelkort et al., 2009). In the latter case, the integration of financial and management accounting information is restricted, e.g., to the top hierarchy levels or to selected parts of the financial records' database.

The first German company that openly challenged the tradition of using separate accounting systems was the top 30 technology firm *Siemens* in 1992/1993 (Ziegler, 1994). Referring to the need for a consistent accounting language for internal as well as external communication purposes, *Siemens* based its top-management control procedures on the financial accounting database. Ziegler's (1994) seminal paper has thus started a highly controversial debate in the mainly analytical and/or normative streams of German management accounting literature on whether this change has any effects on management decision-making and control, and if so, whether this change is for the better (e.g., Schweitzer and Ziolkowski, 1999; Schildbach and Wagner, 1995).

Our paper aims at adding some insights regarding the debate on separate versus integrated MAS design from an empirical perspective, namely by analyzing the impact of an increased level of integration of accounting systems on controllership effectiveness. Until now, empirical research on this subject – mainly published in German language – has focused either on describing changes in management accounting practice due to the spread of integrated MAS design in German-speaking countries (e.g., Müller, 2006; Wagenhofer and Engelbrechtsmüller, 2006; Horváth and Arnaout, 1997) or on discussing the role that IFRS play as a contextual factor (e.g., Jones and Luther, 2005; Weißenberger et al., 2004). Our paper expands this existing body of research by addressing the following research questions:

1. Does an increased level of MAS integration have a positive impact on controllership effectiveness?
2. If so, does the underlying causal inference relate both variables directly, i.e., in a technical fashion, or are they related indirectly via properties of accounting as a financial language for business communication?

Our research design is distinctive for several reasons. First, in our study we explicitly link MAS design to controllership effectiveness, which has not been attempted before. Second, we use a dyadic research design surveying both controllers and representatives of general management. This allows us to include management's perspective into our analysis in a valid fashion. Third, we do not restrict our analysis to technical features of the MAS design, but include management's evaluation of the accounting information provided as a financial language, which relates to the construct of conceptual information use (Menon and Varadarajan, 1992; Beyer and Trice, 1982; Burchell et al., 1980). With respect to the latter point, our research follows the suggestions of Hopwood (1974), who points out that

> "... accounting is about human behaviour, and its social and behavioural aspects are just as much an indispensable part of the whole as the more traditional technical aspects." (p. 14)