CHANGES IN THE SCOPE OF MANAGEMENT ACCOUNTING SYSTEMS IN THE DYNAMIC ECONOMIC CONTEXT

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Abstract

While much has been written in recent decades about management accounting change in advanced economies, little is known how management accounting systems (MAS) may be designed and used in the dynamic environment. The aim of the paper is to provide evidences about the changes in the scope of MASs in the dynamic economic context on the example of Estonian companies. The empirical results of the paper were gathered through questionnaire survey carried out among the largest Estonian companies. The study highlights several interesting features of MAS scope and its changes during 2004-2007 based on the 65 company responses. Findings revealed that, the increasing use of externally and internally oriented non-financial performance measurement approaches characterise the shift towards more broad scope MASs in the companies studied. The shifts towards broader MAS scope place further demands on an company's managers' knowledge in dealing with the ever more complex information systems in organisations.
Keywords: management accounting, management accounting systems' scope, dynamic economic environment, Estonian companies.
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Introduction

The influence from a dynamic economic environment changes on the companies' sustainability and competitiveness can have substantial influence on the changes of the companies' management. The dynamic economic context associates with increasing environmental uncertainty and heterogeneity, which has implications for the nature of companies' management accounting practices. Management accounting, being a part of the management process, has to meet the demands of managers for needed information and the effective MAS would respond on these demands by offering the adequate and necessary information. MASs' scope has a considerable role in helping managers to make better decisions by specifying information about the organisational performance and its main impacts. According to Mia and Chenhall (1994), in the organisations facing complex situations and high environmental dynamism, the broad scope information is crucial for managers decision making. The primary sources of environmental uncertainty associate with market dynamism and competition intensity (Simons, 2000). Traditional views on management accounting information (cost and financial based approaches) tend to underestimate the complexity of organisational performance and offer little support for the management of companies operating in the dynamic business environment (Wickramasinghe & Alawattage, 2007). Thus, the current study interest relates with the MASs' scope and its changes due to the pressures from the dynamic economic environment.

One of the shortcomings of previous management accounting research has been the ability to elucidate the nature of management accounting change in different contexts. Although, the management accounting change issues have been widely investigated mainly in the advanced economies with rather stable economic context (Libby & Waterhouse, 1996; Granlund & Lukka, 1998; Williams & Seaman, 2001; Baines & Langfield-Smith, 2003; Tillema, 2005 etc.). There are few studies dedicated to the MA change in the Central and Eastern European countries with transition and developing economy background (Sobanska & Wnuk, 1999; Vamosi, 2000; Szychta, 2002; Haldma & Lääts, 2002; Cadez & Guilding, 2008; Valanciene & Gimzauskiene, 2009). These studies describe only some fragments of management accounting practices in these countries, where the changes to the economic environment during the last two decades have been remarkable. Our interest relates with Estonia, as one example of these countries. The experience of Estonian companies can be considered from one side as a result of that rather liberal economic policy, where the main external influence comes from the market and from other side as fast legal developments and harmonisation with the European regulations, due to joining the European Union in 2004.

In economic terms Estonia has experienced positive GDP growth in 1997 of +11.7% and in 2006 of +10.6%, while in 1999 Estonia had a negative growth rate of -0.3% and in 2009 of -13.9% (Main economic indicators …, 2011). These fluctuations, which are noticeably higher than in other advanced market

economies in Europe, are considered signs of high dynamics in the economic environment suitable for studding management accounting change namely in a dynamic setting.

An important part of management accounting developments associates with the scope of the companies' MASs and its widening. The difficulties caused by environmental dynamism may be lightened by provision of broad scope information (Chenhall & Morris, 1986). However, the research evidence on the management accounting change and its scope in dynamic economic environment is limited. Therefore, the aim of the paper is to provide evidences about the changes in the scope of MASs in the dynamic economic context on the example of Estonian companies. This paper attempts to contribute to the literature in describing the MAS scope changes in the specific context, namely in the dynamic economic context.

The remainder of this paper is structured as follows. The next section reviews management accounting change and MAS scope literature. The subsequent section describes the research method and survey sample. Afterwards the main empirical findings about MAS scope changes in Estonian companies are summarised. Discussion and concluding remarks are outlined in the final section.

Theoretical concept of MAS scope

By the definition MASs are formal, information-based routines and procedures with which to maintain or alter patterns in organisational activities (Simons, 2000). MASs include information based on processes and procedures that managers require in their activities: in planning, organising, decision-making and controlling. All these activities have short- or long-run effects on organisational performance. Thus, as stressed by Ferreira and Otley (2009) MASs are generally complex and intertwined systems.

The nature of MAS can be examined applying different design or information aspects. It can be described as by changes appearing within the system or by changes taking place in the use of information delivered by the system. The application of different costing methods, calculation techniques or the implementation of new performance measures or new control systems represent the examples of the first category. Second category concentrates on the utilization of the information for different purposes and managerial activities. The focus of the current study is on MAS design, namely on its scope dimension and its changes. The scope of MAS has been a centre interest of previous management accounting studies (Gordon & Narayanan, 1984; Chenhall & Morris, 1986; Bouwens & Abernethy, 2000; Naranjo-Gil & Hartmann, 2007). We intend to offer additional research evidences about the MAS scope in the specific context, namely in the conditions of dynamic economic environment.

In this paper the nature of MAS has been explained by the scope dimension. According to Chenhall and Morris (1986) the scope of MAS refers to the dimensions of focus, quantification and time horizon. Considering the focus of MAS, than the narrow scope system provides information about the events within the organisation and broad scope system offers information related to the external environment. Dynamic economic environment affects managers' information needs and the development of MAS focus on modern financial and nonfinancial approaches is essential. Regarding the quantification the narrow scope system reflects the traditional financial based information while the broad scope system includes complementary to the traditional financial data the nonfinancial data and modern cost or financial calculations (ABC, EVA, DCF). Time horizon reflects the association with time scale, where narrow scope MAS provides traditionally historical data and broad scope system conveys information with future orientation and offers estimates about the probability of future events occurring. The future orientation and probability estimation issues become increasingly relevant in the conditions of high economic dynamism.

Similar approach has been applied by Bouwens and Abernethy (2000), where they examined the relations between MAS and strategy. MAS is viewed as a continuum with narrow scope at one end and broad scope at the other. Narrow scope information has been linked with traditional accounting systems in that these systems typically are limited to providing information that is internally focused, financial, and historically-based information. Broad-scope information, on the other hand, is information that is also externally focused, non-financial, and future-orientated. In addition, we consider the modification of future orientation sub-dimension into two categories: the short-run and long-run information, where time horizon up to twelve month represents the short-run and over one year the long-run perspective.

We assume that broad scope MAS information will be especially valued in the dynamic economic environment (Mia & Chenhall, 1994). Broad scope MAS allows managers understand the relations between companies' objectives, internal processes and activities, and organisational outcomes. These linkages can help to develop differentiation strategies, as they can deliver feedback on the complex interdependencies between internal operations, market and customer orientation, and company's strategy. Traditional

financially oriented MA practices, including cost accounting and financial-based performance assessment, do not provide feedback on strategy planning efforts (Wickramasinghe & Alawattage, 2007). In the circumstances of economic recession the importance of budgeting and performance measurement issues have been grown substantially (Van der Stede, 2011). In addition, it has been revealed that the broad use of non-financial performance measures has a positive effect on company's performance (Van der Stede *et al.*, 2006).

Research method

The data used in the current study are based on questionnaire survey, which was carried out in year 2007 by the Department of Accounting at University of Tartu. The questionnaire was administered to 140 companies selected from the Business Daily list of largest Estonian companies. These companies were either strategic business units (divisions of larger corporations) or companies in their own right. To develop an accurate mailing list, each company was telephoned and the names and addresses of business units were identified, as well as the name of the most suitable person within each business unit to complete the survey. These were typically financial directors or chief executives. Due to the low response by the first deadline, the companies were contacted again by phone and asked to participate in the survey during additional two weeks period. After these steps we finally succeeded to collect answers from 65 companies (response rate by 46%). The responding companies represented different branches of activity (food and drinks production, wood industry, wholesale, financial services, and others). The demographic features of the companies including industry and size are summarized in Table 1.

Table 1. Demographic data

Industry classification	Number of companies
Food and drinks industry	9
Wood industry	7
Other manufacturing	26
Wholesale	10
Financial services	6
Other services	14
Total	**65**
Total revenue	**Number of companies**
Up to 10million EUR	3
10 to 50 million EUR	40
More than 50 million EUR	18
Total	**65**

Regarding the market environment our analysis revealed, that during studied years for the companies environment has been substantially changed. In 2004, when Estonia joined the EU, 78% of the responding companies defined their market development stage as growing one. After three years, in 2007 only for 23% of these companies the growth stage has changed to a more stable maturity stage and for 55% saw their market growing. We can summarize that during three years the companies did largely move from growth stage towards maturity stage. However, the considerable part of the surveyed companies are still operating in a market development context, which requires more attention on their competitiveness and developments of management decision supporting systems. Also the raised production quality standards entail adoption of a more sophisticated and broader scope MAS (Haldma & Lääts, 2002).

The questionnaire list included items referring to MAS scope. The scope dimensions were classified into the following dimensions: focus, quantification and time horizon. Each of these were divided into the sub-dimensions including specified methods and principles of MAS. The respondents were asked to indicate their usage of the listed scope sub-dimensions on a seven-point Likert scale ranging from 1 (not used at all) to 7 (very intensive usage) at the year 2007 and three years ago in 2004. By focusing on the mean values we analysed the changes in the use of the listed MAS methods and principles between studied years. The questionnaire findings are accompanied with more recent field study results on management accounting information usage in management processes during economic recession period, based on the investigation conducted by Vadi et al (2011), which involved 198 Estonian companies and on the investigation (see Varblane et al., 2011) carried out in 100 Estonian machinery companies. In-depth analysis in both studies has been conducted via interviews with CEOs and CFOs.

Empirical findings

In the current study the MAS scope was analysed by its focus, quantification and time horizon. Table 2 summarises the applied methods and principles in 2007 and 2004 categorised by these three MAS scope dimensions.

Table 2. Means of the applied methods and principles in 2007 and 2004
categorised by MAS scope dimensions

MAS Scope sub-dimension	Applied method/principle	2007	2004
Focus (internal-external)			
Internal	Cost budgeting	6,22	5,65
Internal	Variable and fixed costs separation	5,98	5,58
Internal/External	Key performance indicators	5,82	5,06
Internal	Direct costing	5,71	5,14
Internal	Contribution margin analyse of products/services	5,20	4,32
Internal	Contribution margin analyse of business units	4,20	3,48
External	Contribution margin analyse of customer groups	4,06	3,17
Internal	Full costing	3,03	2,43
Internal/External	Balanced scorecard (BSC)	2,89	2,20
Quantification (traditional financial - modern financial, non-financial)			
Traditional financial	Revenue	6,60	6,48
Traditional financial	Net income	6,34	6,20
Traditional financial	Cost efficiency	5,80	5,18
Traditional financial	Earning before interest and taxes (EBIT)	5,77	5,34
Nonfinancial	Customer satisfaction	5,54	5,02
Nonfinancial	On-time delivery	5,17	4,74
Nonfinancial	Quality management (ISO; EFQM)	4,94	4,28
Nonfinancial	Employee satisfaction	4,86	4,09
Traditional financial	Return on investments (ROI)	4,82	4,23
Modern financial	Activity based costing (ABC)	4,80	4,02
Nonfinancial	Market share	4,77	4,57
Nonfinancial	Sustainable growth	4,72	4,18
Modern financial	Customer profitability	4,63	3,83
Nonfinancial	Innovation	4,57	3,89
Nonfinancial	Response capability on customer changed needs	4,55	4,12
Nonfinancial	Response speed on market threats	4,48	3,92
Nonfinancial	Response speed to competitors actions	4,14	3,66
Modern financial	Marketing efficiency	3,86	3,37
Modern financial	Discounted cash flow calculation (DCF)	3,46	2,88
Modern financial	Economic value added calculation (EVA)	3,14	2,71
Traditional financial/Nonfinancial	Balanced scorecard	2,89	2,20
Time-horizon (historical-future oriented: short-run-long-run; probability)			
Historical	Monthly reporting	6,69	6,49
Future oriented	Forecasting till the end of term period	5,55	5,08
Long- run orientation	Strategic planning	5,52	4,82
Long-run orientation	Mid-term business planning	5,31	4,74
Short-run orientation	Traditional static budgeting	4,08	4,08
Short-run orientation	Flexible budgeting	4,08	3,55
Probability	Early warning system	2,54	2,23

Concerning the mostly applied methods/principles in the three specified scope categories respectively the results show few changes in the rankings of most highly used methods/principles between the years.

In both studied years the companies MAS scope can be characterised by high internal focus, traditional financial view, and by the combination of historical and future oriented information. More specifically, the focus of MAS in the surveyed companies conveys clearly the high interest on the internal dimensions, such as cost budgeting, variable and fixed costs separation, direct costing and contribution margin analyse. However, the shifts towards higher use of external dimension is noticeable on the higher use of key performance indicators (mean: 5,08 in 2004 and 5,82 in 2007) and contribution margin analyse of customer groups (mean: 3,17 and 4,08 respectively), which go align with the expected findings that the broad scope MAS would be valuable in the dynamic settings. The findings indicate the change towards the higher application of balanced scorecard approach (mean: 2,2 in 2004 and 2,89 in 2007), but it was still less intensively used than the other surveyed focus principles. During the last year, in the period of economic recession the usage of balanced scorecard seems to be intensified. The analysis of Estonian companies (Vadi et al , 2011) revealed that 42% of the investigated companies introduced consciously used BSC, in particular in bigger companies. At same time, less than 10% of Estonian machinery companies used BSC (Varblane et al., 2011). The respondents argued, that the main reason of this evidence is the fact that the companies of the industry have a quite simple business model.

Concerning the MAS quantification dimension the findings reveal the increasing high reliance on the traditional financial principles. Regard the quantification dimension companies tend to use less nonfinancial information than financial information. Studied Estonian companies tend to put also more emphasis on the traditional financial information (e.g. revenue, net income, cost efficiency and EBIT) than the modern financial approaches (e.g. customer profitability, DCF, EVA calculation) regardless the year. However, the findings outline also the positive trends like the increasing use of modern approaches ABC (mean: 4,02 in 2004 and 4,8 in 2007) and various nonfinancial approaches (e.g. customer satisfaction, employee satisfaction, sustainable growth). But the both studies from the last years (Vadi et al , 2011; Varblane et al., 2011) revealed that the focus has been shifted more and more on non-financial indicators. The general management study of Estonian companies (Vadi *et al*, 2011) revealed that market based external dates have been influenced equally with financial based dates the strategic planning processes in Estonian companies during recession period. In short term planning the financial dates played more important role.

With respect to MAS time horizon category the companies reported the common prevalence of historical dimension – monthly reporting (mean: 6,49 in 2004 and 6,69 in 2007) followed by the general future orientation view – forecasting till the end of term period (mean: 5,08 in 2004 and 5,55 in 2007). The findings indicate the increasing long-run orientation by higher application of strategic planning (mean: 4,82 in 2004 and 5,52 in 2007). Interestingly, the early warning system was indicated as the less intensively used approach, offering contrary to the expected the low emphasis on probability estimates for the companies operating in the dynamic economic environment. The studies from the economic recession period (see Vadi et al , 2011 and Varblane et al., 2011) revealed that the relevance of budgeting issues has been grown substantially in the circumstances economic decline. But there is an evidence, that companies stress more on short-term budgeting issues than on strategic approach. The companies argued that in more dynamic economic context there is more need on flexibility in budgeting issues. Therefore also the relevance of response capability on customer changed needs has been substantially increased (Varblane et al., 2011). In these circumstances also the planning period has been shortened, while the main share of budgets compiled for the period up to one-year has been increased. Only financial plans and development plans were mainly compiled for a period up to three years. Also the study (Vadi et al , 2011) revealed, that the relevance of budgeting issues were estimated higher than performance reporting ones.

Discussion and conclusions

Current study highlights a number of changes in the usage intensity of examined MAS scope dimensions. The increasing attention on the external and nonfinancial approaches have positive effects in broadening the view about organisational performance and facilitating the company's adaption to the environment dynamism. Nevertheless, based on the empirical findings the MASs scope in studied companies are characterised largely by the traditional and financial based approaches (revenue, net income, EBIT, ROI). Our results are in line with the findings from previous studies, which confirm the primary importance of financial performance measures in general (Ittner *et al.*, 2003; Szychta, 2002; Haldma & Lääts, 2002). Thus, the Estonian companies follow international performance measurement patterns, where financial

performance measurement tools dominate non-financial ones and the adoption of integrated multidimensional performance measurement tools increases (Baines & Langfield-Smith, 2003). However, these traditional approaches tend to underestimate the complexity of organisational performance offering little support for the strategic management of companies operating in the dynamic business environment (Wickramasinghe & Alawattage, 2007). At the same time, the low attention on the value management methods (EVA calculation, DCF calculation, and early warning systems) in companies might indicate possible problems with the rationality concerns with their resources allocation. Without value-based performance information, managers tend to ignore the opportunities offered by these modern value management tools. These opportunities would help them to identify the causes of these changes in their organisations' external and internal environments on the company's future performance.

In addition, study revealed that one of the deficiencies in the companies studied related to the MAS focus was the higher usage of internal data (e.g. contribution margin analyse of products/services) and low usage of market related data (e.g. contribution margin analyse of customer group). This indicates the narrow scope of MAS complicating the visualisation of the possible impacts of management decisions on performance and the enhancement of economic rationality within the companies. Little attention on the external dimensions creates difficulties to react quickly on market changes or to respond to competitors actions for the companies operating in the dynamic economic environments. Therefore, managers should be more concerned about the just how appropriate their MAS is to their organisation, and how well it mirrors and integrates the broad spectrum of organisational performance aspects. As the studies from more dynamic economic context during the last years revealed, the relevance of response capability on customer needs has been substantially increased in the companies and as a consequence, the relevance of flexibility in budgeting issues has followed this shift.

The findings show that during the studied period the companies have stressed the application of different aspects reflecting the MASs' change towards broader scope, which is suitable to the dynamic context of the studied Estonian organisations. Initially the companies emphasised mainly the reliance on the internally oriented and financial information. Afterwards, MAS scope changes relate besides the conventional approaches also the contemporary developments, indicating the movement towards stronger implementation of broad-scope management accounting information, where besides the internally oriented and financial based historical information is accompanied by the external and non-financial aspects, and future oriented strategic focus. However, the paper offers evidences that the most intensively used scope categories include historical dimension in relation to the internal and traditional financial dimensions. At the same time our findings support Van der Stede (2011) idea, that in the dynamic economic context the importance of budgeting has been grown substantially while the relevance of budgeting issues were estimated by Estonian companies higher than performance reporting issues.

The current paper has a number of limitations that must be considered. The main deficiency arises from the selected research method, namely survey, which does not permit to reveal more details of the MAS scope change process. The limited number of questionnaire responses may cause a generalisation bias and the surveyed years do not offer more recent developments in these companies. Therefore, it would be useful to repeat the conducted survey not only in Estonia, but also in the other dynamic economies. The comparison across the years and countries could expand the knowledge of changes in MAS scope in a dynamic economic context.

This study can have implications for managers everyday work, when they need to select between various performance measurement and management instruments appropriate for their organisation. The increasing complexity of MAS scope towards deeper external focus, higher usage of nonfinancial parameters and strategic time horizon, reflecting the variety of performance dimensions, seem to be inevitable for the successful decision-making for the organisations operating in dynamic economic environment.

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