

CHAPTER THREE

MANAGEMENT ACCOUNTING
SYSTEMS IN SMEs:
A MEANS TO ADAPT
TO THE FINANCIAL CRISIS?

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Abstract

In the present study we examine the impact of the recent financial crisis on the management accounting systems of Small and Medium-sized Enterprises (SMEs) in Greece. More specifically, we assess whether and to what extent Greek SMEs have adjusted their management accounting systems as a reaction to the intense pressures deriving from the extensive financial crisis. For this purpose, we explore the application of budgeting and costing systems as well as that of various management accounting practices and techniques during two periods: in 2009, the year of the financial crisis outbreak, and in 2013, a period in which Greek economy is deeply in the financial vortex. The study is informed by the answers of 161 SMEs falling into the manufacturing, retail and service-providing sectors on a structured questionnaire. Results indicate that the various facets of the

financial crisis resulted in SMEs adjusting their management accounting systems. Therefore, an increase in the number of SMEs starting to apply budgeting and costing systems within the examined period is evident. Additionally, the use of budgeting and costing for various managerial purposes, as well as the use of several modern management accounting and performance measurement techniques has been intensified, albeit moderately. Therefore, despite the crisis most of the SMEs have not embraced more sophisticated management accounting methods.

Introduction

The role of Small and Medium-sized Enterprises (SMEs) in modern economies is crucial as they constitute the vast majority of firms' population. Nevertheless, SMEs are considered to be more vulnerable to the intense pressures caused by a financial crisis and they often struggle to survive. As a result, an increased number of SMEs is forced to bankruptcy (OECD, 2009).

The recent financial crisis has been a major challenge for all types of organizations revealing a plethora of problems and inadequacies in terms of culture, structure, planning as well as accounting practices (Hopwood, 2009; van der Stede, 2011). The implications of the financial crisis on management accounting have been characterized as "undeniable" (van der Stede, 2011; p. 606) while an impetus for readjustments on management accounting practices has been recognized as necessary (Hopwood, 2009). Therefore, many questions arise regarding the impact of a financial crisis on SMEs as well as the defense mechanisms, if any, that SMEs develop against it. The challenges, especially in terms of management accounting practices, are significant bearing in mind that the appropriate use of management accounting information can serve as a vital attribute for the survival and even the success of a small or medium-sized enterprise (Mitchell and Reid, 2000).

In the present study we try to assess whether Greek SMEs have adjusted their management accounting practices and techniques as a reaction to the financial crisis. More specifically, we explore the management accounting techniques used by a sample of Greek SMEs in 2009, the year that the financial crisis started becoming evident in the country, and whether there has been a change in these management accounting systems by 2013, a period in which Greek economy is deeply in the financial vortex. Greece

constitutes an interesting setting to study this research agenda as the country as a whole and the organizations operating in it have faced and are still facing extremely intense pressures due to the extensive financial crisis (Matsaganis and Leventi, 2013). To put it in numbers, it is estimated that the crisis led to the closing of 90,000 SMEs in Greece between 2008 and 2011 (SBA Fact sheet, 2012). This is very important since Greece is a country where the vast majority of enterprises are small and medium-sized (Eurostat, 2008). Moreover, SMEs are considered to be more significant in Greece compared to any other E.U. country (SBA Fact sheet, 2012).

The study adds to international literature by examining the implications on management accounting systems that may emanate from a financial crisis. According to Hopwood (2009) and Van der Stede (2011) this area of research is understudied and requires further analysis. Most of the limited studies on the topic concentrate on the 1997 financial crisis in Asia and provide mixed and inconclusive results (Varum and Rocha, 2013). Moreover, the Asian crisis of 1997 differs from the global one of 2008 in several fundamental aspects, the most important being the fact that the latter originated in advanced economies (E.U.) and not in developing ones (Park *et al.*, 2013). The two financial crises also present differences in terms of exchange rate regimes, breadth and persistence of the crisis, role of private and public sectors, and level of preparedness (Truman, 2013). Even though further research with international orientation is required before reaching generalizable conclusions, our study could be considered as an expansion of the research agenda to countries with a different -from the Asian- cultural profile. In this realm, our study offers an analysis within the European context and especially the Southern European one¹. Additionally, the study contributes to literature by exploring the management accounting practices and techniques that are applied by SMEs, another field where research is not extensive (e.g. Drury and Tayles, 1993; Marriot and Marriot, 2000; Wijewardena and De Zoysa, 2001).

The paper is organized as follows. In the following section the international literature relevant to the issue is presented. In Section 3 we develop our hypotheses and Section 4 contains the methodology applied. Finally,

¹ Due to various structural and cultural differences evident between European member states, a generalization of the outcome to all E.U. countries could not be applicable. This fact is further highlighted by the different level of intensiveness of the crisis's impact to different E.U. states. In general, Greece is considered to belong to the South-East European cultural cluster (Koopman *et al.*, 1999) sharing commonalities with countries such as Italy, Spain and Portugal.

Section 5 provides the results, while Section 6 concludes with a discussion on the findings and future research potentials.

Literature review

In the international literature SMEs have been characterized as a “vital” and “key” force for an economy’s well-being (Mitchell *et al.*, 1998; Mitchell and Reid, 2000; Nandan, 2010) and as a major driver of economic growth and adjustments (OECD, 2013). They are also viewed as being more flexible, innovative, agile enough to quickly react to changing markets, less bureaucratic, entrepreneurial, and “in-touch” with reality, compared to larger firms (Peel and Bridge, 1998). However, reasons such as the limited knowledge of the owners-managers on how to tackle the managing problems (Kirby and King, 1997), the dependency on limited number of customers and the production of standard products (Nandan, 2010) make this business sector prone to failure and lead many SMEs to struggle for survival. According to Hopper *et al.* (1999) SMEs receive intense pressures to reduce their costs, and at the same time to retain high quality. Ballantine *et al.* (1998) observed that SMEs have a failure rate of 11%, which is six times higher compared to large firms.

Regarding the choice of management accounting practices several researchers argue that the organization size plays a role (e.g. Otley, 1995; Haldma and Lääts, 2002; Abdel-Kader and Luther, 2008). As SMEs are less complicated compared to larger firms it is more likely that they apply simpler management accounting systems (Mitchell and Reid, 2000). The survey of Drury and Tayles (1993) in 260 UK SMEs observed the existence of under-developed accounting systems while Merchant (1981) showed that larger firms use more formal sophisticated budgeting processes, compared to smaller firms which rely less on formal budgeting. Moreover, in larger firms budgeting seems to have a stronger relation with increased performance. According to Joshi *et al.* (2003) the size of an organization affects the nature of the adopted budgeting systems and furthermore organizations’ performance. Size constitutes a determining factor for the adoption of innovative management accounting practices such as activity-based management practices (Baird *et al.*, 2004) and the balanced scorecard (Speckbacher *et al.*, 2003).

Apart from size, the nature of the environment into which a firm operates, also plays a very important role in the choice of management accounting systems (Chenhall, 2003). In general it has been observed that firms facing intensive environmental attributes such as high uncertainty, increased

competition, turbulence and hostility, react by developing or adopting more sophisticated management accounting systems and by increasing their innovation skills (Chong and Chong, 1997; Abdel-Kader and Luther, 2008). The aforementioned environmental characteristics provide an overview of the conditions firms face during periods of financial crises. Nevertheless, the way small and medium-sized firms react –in terms of management accounting systems– in periods of financial crises has not been adequately studied. The majority of the limited studies on the topic concentrate on the 1997 financial crisis in Asia and most importantly they do not conclude to unanimous results (Varum and Rocha, 2013). For example, some of these Asia-based studies (e.g. Tan and See, 2004; Narjoko and Hill, 2007) provided evidence that smaller firms were more flexible and could more easily adjust to a financial crisis, while others, on the contrary, concluded that smaller firms were more vulnerable (e.g. Domaç and Ferri, 1999; Marino *et al.*, 2008). Moreover, as already discussed the Asian and European crises are not homogeneous (Park et al., 2013; Truman, 2013).

SMEs in Greece² constitute the 99.8% of Greek enterprises and account for about 85.2% of private sector employment and 70.2% of the added value created by businesses in Greece (SBA Fact sheet, 2013). Greek SMEs have been considerably affected by the global economic slowdown, and many of them were forced to get out of business. The financial crisis plunged the Greek GDP growth rate to -3.1% in 2009, -4.9% in 2010 and -7.1% in 2011. As a consequence the unemployment increased drastically to 9.5% in 2009, 12.5% in 2010 and 17.7% in 2011 as a percentage of the total workforce³.

The Greek management accounting culture

Although SMEs constitute the majority of Greek enterprises, their management accounting systems are rather under-researched as most of the management accounting studies in Greece concentrate on larger companies. As for the use of management accounting information in Greece it seems that in recent years there has been an improvement. The early study of Ballas and Venieris (1996) provided evidence that Greek firms use accounting mainly for fiscal consideration purposes and not for

² In these percentages the European Commission's SBA for Europe includes, apart from small and medium sized firms, the micro enterprises as well.

³ Data taken from the World Bank world development indicators
<http://databank.worldbank.org/data/home.aspx> (assessed on 31/1/2014)

managerial purposes. However, the findings in more recent surveys (Cohen *et al.*, 2005; Pavlatos and Paggios, 2008; Venieris and Cohen, 2008; Angelakis *et al.*, 2010; Cohen and Karatzimas, 2013) show an increase in the use of modern accounting practices and techniques (e.g. Activity Based Costing, Benchmarking, Customer and Competitor analysis, etc.) as well as in the use of budgeting for managerial purposes (Cohen and Karatzimas, 2011). Nevertheless, the preference to traditional management accounting practices is still highlighted (Angelakis *et al.*, 2010; Cohen and Karatzimas, 2013). In some of these studies, the firm size has been found to be a determinant factor in adopting modern management accounting practices. More specifically, there is evidence that smaller firms prefer the application of simpler management accounting systems.

Hypotheses development

Budgeting system

Budgeting constitutes a multifaceted tool in management hands (Hansen and Van der Stede, 2004). Apart from its obvious use for planning and control purposes (Hilton *et al.*, 2000), there is also a variety of other functions where budgeting could be useful. For instance, the budgeting procedure could be further exploited for internal communication, personnel motivation, as well as for performance evaluation purposes (Fischer *et al.*, 2002; Hansen and Van der Stede, 2004).

As budgeting is strongly correlated to firms' strategy (Abernethy and Brownell, 1999) its importance substantially increases in periods of economic recession (Lääts and Haldma, 2012). In such periods, the planning, control and evaluation aspects of the budgeting mechanism constitute major pillars that ensure firms' survival. That is why all attempts to improve traditional budgeting mainly focus on the strengthening of its connection to strategic and operational planning (Hansen *et al.*, 2003). Commitment and reliance to strategic planning and its tools could result in firms' taking advantage of emerging opportunities (Wilson and Eilertsen, 2010). Evidence on the use of budgeting during periods of economic recession shows that firms choose to adopt flexible budgeting in the short term (Lääts and Haldma, 2012). Based on the above discussion and since studies in relation to the Greek business environment (Cohen and Karatzimas, 2011) show a recent increase in the use of

budgeting for several managerial purposes, the following hypothesis is tested:

Hypothesis 1: SMEs in Greece react to the financial crisis by adopting more sophisticated budgeting systems

Costing system

The globalization of the markets which results in massive economies of scale in production, the diversification of the manufacturing technology and the increased demand for product diversity have amplified the need for more sophisticated costing systems, such as activity-based costing, target costing and value chain costing (Cohen and Kaimenaki, 2011; Kaplan, 1994; Taipaleenmaki and Ikaheimo, 2013). These recently developed systems improve the quality of information and enhance decision making. Moreover, higher levels of cost system sophistication are positively associated with the importance of cost information (Al-Omiri and Drury, 2007).

During an economic crisis, small enterprises have difficulties in dealing with its impacts, such as intense competition, unstable trading environment and cash flow problems (Yesseleva, 2012). According to literature (Libby and Waterhouse, 1996; Simons, 1990) firms facing very competitive market environments use more sophisticated management accounting systems. Increased competition leads to severe market conditions with under-cut prices and low profit margins (Al-Omiri and Drury 2007), increased customization of products and concentrated product diversity. Consequently, organizations are in need of more accurate cost information. They need to correctly calculate the costs of the increased variety of customized products and services in order to avoid improper decisions due to over-costing or under-costing. Based on the above discussion the following hypothesis is tested:

Hypothesis 2: SMEs in Greece react to the financial crisis by adopting more sophisticated costing systems.

Management accounting techniques

The recent trend in the management accounting practices results in firms enriching their traditional concept of internal and financial information with external and non-financial information (Chenhall, 2007). This combination gives rise to techniques such as the balanced scorecard, non-financial performance measures, benchmarking, competitor and customer

analysis (Chenhall and Langfield-Smith, 1998). The new management accounting practices and techniques appear to focus on firms' future performance and to provide a link among operations, strategies and objectives (Hyvönen, 2005; Taipaleenmaki and Ikaheimo, 2013). Several studies (Abdel-Maksoud *et al.*, 2005; Hyvönen, 2005; Langfield-Smith, 2008) have indicated that for firms operating under increased global competition, rapidly changing technology and new demands on managerial approaches, the use of traditional management accounting practices and techniques is not suitable; on the contrary, the use of modern ones better suits them. As a result, firms facing the outcome of a financial crisis should focus on developing a strategic orientation. For instance, in periods of uncertainty firms adopt a more costumer-focused orientation (Cadez and Guilding, 2008). Based on the literature and since management accounting practices and techniques constitute a significant tool that could be used for the survival and even sustainability of SMEs (Mitchell and Reid, 2000), we examine the following research hypothesis:

Hypothesis 3: SMEs in Greece react to the financial crisis by adopting more sophisticated management accounting techniques

Research design

In the present study we focus on SMEs that operate in the Greek business environment. In order to define SMEs we use the definition developed by the European Commission (E.C.) in 2003⁴.

For the purpose of our study a questionnaire has been developed including four sections that correspond to two different time periods: The first period refers to the time of the financial crisis outbreak (i.e. year 2009), while the other to a time period deep into the financial crisis when all its effects are evident (i.e. year 2013). The two first sections of the questionnaire examine the characteristics and the uses of budgeting and costing systems, respectively. The third refers to the use of several management accounting practices and performance measurement techniques. The fourth section examines the potential impact of a set of

⁴ The E.U. through the Commission Recommendation of May 2003, has proposed the number of employees and either turnover or balance sheet total as the main factors defining the firm categories. More specifically, the workforce of Small enterprises is less than 50 employees and their annual turnover or annual balance sheet total is up to 10 million Euros. As for Medium-sized enterprises, they employ fewer than 250 persons and they have an annual turnover of less than 50 million or an annual balance sheet total that does not exceed 43 million Euros.

factors on the application of management accounting systems by SMEs. Therefore, the questionnaire is structured in such a way that it permits the examination of any change made in the budgeting and costing systems as a result of the recent financial crisis. The selection of the examined practices and techniques included in the questionnaire is based on the Greek business environment characteristics as presented in previous studies on management accounting in Greece (e.g. Angelakis *et al.*, 2010; Cohen and Karatzimas, 2013).

The questionnaire⁵ was disseminated via e-mail to 3,000 SMEs in Greece, found in ICAP dataset. ICAP database covers time series financial data for 32,000 Greek companies. The questionnaire was addressed to either the president or the CEO of the firm. 161 completed questionnaires were received, which corresponds to a 5.4% response rate. More specifically, 102 (63%) out of the 161 firms were identified as Small and 59 (37%) as Medium-sized. The sample companies can be further divided to 41 firms belonging to the wider manufacturing sector, 41 to the service-providing sector and 79 to the retail sector. Regarding the firms' legal form, 142 (91%) of the 161 enterprises were identified as Public Limited Companies (P.L.C.), 12 (7.5%) firms as Limited Liability Companies (L.L.C.) and 2 (1.2%) firms as General Partnerships (G.P.). A T-test comparing early and late respondents indicated the non-existence of any statistically significant differences. Key financial characteristics of the 161 firms for the years 2009-2011 are provided in Table 1.

	Sales Revenues	Total Assets	Equity	Income before taxes	Gross Margin (%)
Mean	9,414	22,700	2,450	-2,177	27.7
Median	3,843	4,867	1,478	43	24.72
St. deviation	13,700	120,000	93,100	31,400	17.4

Amounts in 1,000 €; N=162; Period 2009-2011

Table 1: Descriptive statistics

To have a better understanding of the financial characteristics of the sample firms, Diagrams 1 and 2 provide a comparative view of the three

⁵ The questionnaire is in Greek and is available at:

<https://docs.google.com/forms/d/1EWg5ZD5fOWPuQWEsGWC3rE9VyOD7QRO9XhmF6CwLI5s/viewform>.

sectors in terms of median sales revenue (Diagram 1) and median total assets (Diagram 2) for the years 2009, 2010 and 2011.

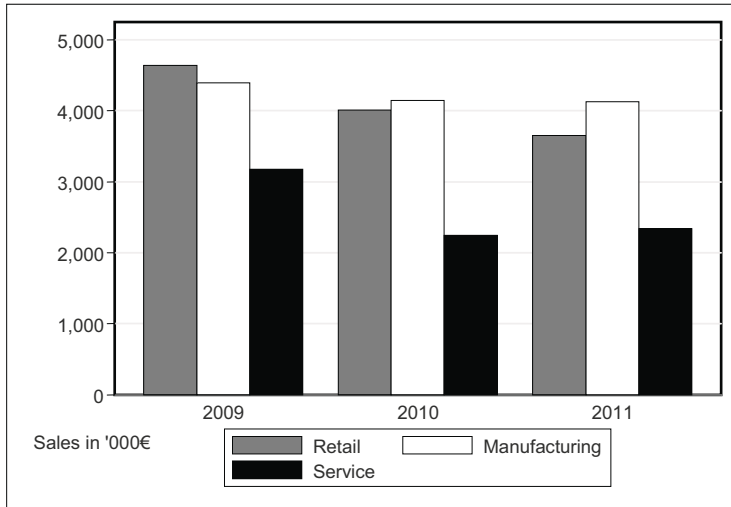


Diagram 1: Median of Sales for each sector

As revealed in the diagrams, the retail sector shows a constantly decreasing trend in sales revenue and total assets throughout the three-year period. On the other hand, the figures of the manufacturing and service-providing sectors have remained rather stable after the first year's decreasing trend.

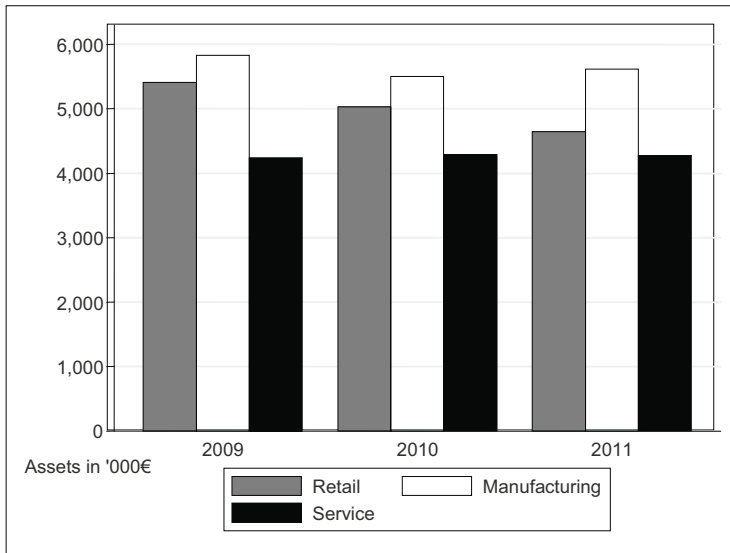


Diagram 2: Median of Total Assets for each sector

Results

In the following paragraphs a brief presentation of the results is given. At first the results regarding the budgeting system, the costing system and the application of other management accounting practices and techniques are provided. This analysis permits the development of a high level management accounting profile of the sample companies at the two periods. Finally, a more thorough look into the characteristics of the change-deniers (i.e firms that did not proceed to adopting a budgeting system) is attempted.

Budgeting in SMEs

From the responses (Table 2) a significant increase in the number of firms that apply a budgeting system during the examined period is evident. The percentage of companies applying a budgeting system increased from 73.9% of the sample companies in 2009 to 84.5% in 2013. Moreover, no company ceased the operation of its budgeting system during the crisis. Nevertheless, there is still a 15.5% of the sample that does not apply a budgeting system despite the crisis.

	Budget is developed 2013		
Budget is developed 2009	Yes	No	Total
Yes	119	0	119
No	17	25	42
Total	136	25	161

Table 2: Budget development

When it comes to the characteristics of the budgeting system, it turns out that the degree of detail in the budget has also slightly increased. In 2013 almost 67% of the sample firms prepared a budget which is characterized as being detailed; the corresponding percentage in 2009 was 62%. Regarding the time period the budget refers to, no significant change is observed between the two periods. In both cases the majority of the firms choose to prepare an annual budget. However, there is a slight change in the way budget amounts are calculated. The responses reveal an increase in the number of firms choosing to apply a combination of two methods: “Calculating the amounts from a zero basis” and “Calculating the amounts as a percentage of the change in the previous budget’s amounts”.

As budgeting is widely used for various managerial purposes and it is strongly related to a firm’s strategic objectives (Yuen, 2004; Hansen and Van der Stede, 2004) respondents were asked to rate the extent to which their firms use budgeting for planning, strategy implementation, communication with banks and performance evaluation. The results (Table 3) reveal a slight increase in the use of budgeting for the aforementioned purposes during the crisis period. Even though all four variables received a rating above the average by the respondents, the most important use refers to the “Evaluation of firms’ performance”, followed by the use of budgeting for “Planning”.

	2013	2009	Difference	T-test (p-value)
Firm’s performance evaluation	4.23	3.85	0.38	0.000
Planning	3.93	3.62	0.31	0.000
Implementation of firm’s strategy	3.85	3.51	0.34	0.000
Communication with banks	3.70	3.31	0.39	0.000

1-5 Likert scale, where 1: Not at all, 5: Very much

Table 3: Use of budgeting for managerial purposes

The increase in the use of budgeting for managerial purposes between the two periods is found to be statistically significant. The conduction of a Paired-sample T-test between the mean values of related variables reveals significant differences in the mean values of all variables between the two periods at the 1% statistical significance level. This finding is an indication of a change in the philosophy of the firms which in turn leads them to increase the use of budgeting for managerial purposes.

On the whole, a significant number of firms started applying a budgeting system during the period under examination. Furthermore, a change, although of moderate magnitude, in the use of budgeting for several managerial purposes can be observed. Therefore, the first hypothesis is supported by the empirical findings.

Costing in SMEs

Regarding the application of a costing system, the results show that firms not applying a costing system have decreased in number during the crisis period. While in 2009 almost 15% of the sample firms did not use a costing system, by 2013 this percentage has decreased to 3% (Table 4). Therefore, a move towards firms monitoring their costs more effectively can be observed from the data.

	2013		
2009	Yes	No	Total
Yes	137	0	137
No	19	5	24
Total	156	5	161

Table 4: Does the firm apply a costing system?

The respondents were further asked to rate the extent to which their firms use costing information for managerial purposes such as planning, pricing, cost control and employee performance evaluation. The results (Table 5) indicate that in both periods the costing system is mainly used for “Pricing” and “Cost control” purposes and to a lesser extent for “Planning” and “Evaluation of employees’ performance”.

	2013	2009	Difference	T-test (p-value)
Pricing	4.12	3.93	0.19	0.000
Cost control	4.10	3.88	0.22	0.000
Planning	3.61	3.43	0.18	0.001
Employees performance evaluation	3.13	2.93	0.20	0.000

1-5 Likert scale, where 1: Not at all, 5: Very much

Table 5: Use of the cost system for managerial purposes

A Paired-sample T-test aiming to examine differences between the mean values regarding the use of costing information in the two periods revealed statistically significant differences for all cases at the 1% significance level. Therefore, there is corroborative evidence that SMEs used costing information more intensively for managerial purposes in 2013 compared to 2009.

The increase in the number of firms choosing to apply a costing system during the examined period along with the slight increase in the use of costing information for various managerial purposes, provide empirical evidence that support the second hypothesis.

Management accounting techniques in SMEs

As a next step, the firms' representatives were asked to rate the extent to which their firm had been applying certain management accounting techniques during the two periods (Table 6). More specifically, the examined techniques referred to the application of "Competitor analysis", "Customer analysis" and "Benchmarking". The responses reveal a slight increase in the application of all three techniques. The most commonly applied technique for both periods turned out to be "Customer analysis" (mean value = 3.73 for 2013 and 3.24 for 2009). What should be further noted is that the use of "Benchmarking" although increased since 2009, is still applied only to a limited extent.

	2013	2009	Difference	T-test (p-value)
Customer analysis	3.73	3.24	0.49	0.000
Competitor analysis	3.40	3.07	0.33	0.000
Benchmarking	2.86	2.52	0.34	0.000

1-5 Likert scale, where 1: Not at all, 5: Very much

Table 6: Use of management accounting techniques

A Paired-sample T-test revealed that the increases in the intensity of use of the management accounting techniques between the two periods were statistically significant at the 1% significance level. It can be therefore concluded that SMEs intensified the application of these techniques during the crisis period.

Furthermore, the responses reveal that the measurement of performance is mainly made through the analysis of “Profits” and “Financial ratios” and less through the use of “Non-financial ratios” and the “Balanced Scorecard” (Table 7). Thus, a preference to more traditional performance measurement techniques compared to modern ones is observed. This comes in line with evidence from relevant studies (Hyvönen, 2005; Lääts and Haldma, 2012) which show that firms still choose to base their performance assessment on traditional financial indicators such as profits and financial ratios.

	2013	2009	Difference	T-test (p-value)
Profits	3.96	3.88	0.08	<i>0.231</i>
Financial ratios	3.52	3.15	0.37	0.000
Deviation from budget	3.29	2.86	0.43	0.000
Non financial ratios	2.91	2.57	0.34	0.000
Balanced Scorecard	2.12	1.91	0.21	0.001

1-5 Likert scale, where 1: Not at all, 5: Very much

Table 7: Performance measurement

The conduction of a Paired-sample T-test revealed that firms significantly increased the use of all methods to assess performance (differences are statistically significant at 1%) but for the case of “Profits”. “Profits” are used with the same intensity in both periods.

It can be thus concluded that SMEs prefer to use traditional techniques rather than more innovative ones that are only scarcely applied. Therefore, the third hypothesis is not supported by the empirical evidence.

SMEs profile before and during the crisis

Based on the results already discussed the profile of the Greek SMEs during the two examined periods could be drafted. At the outbreak of the crisis the majority of Greek SMEs apply a budgeting system (74% of the sample) and they prepare an annual budget that they consider to be detailed. For its development they use budgeted figures deriving from a combination of a zero basis process and an incremental methodology. Moreover, budgeting is mainly used for the evaluation of firm's performance. Additionally, they have a costing system in place. The firms' pricing is mostly based on a combination of costs and competitors' pricing policy. Costing is further used for control and planning. Customer analysis is executed rather regularly, while performance measurement is mostly based on profits. Moreover, many SMEs avoid adopting more sophisticated and modern practices and techniques such as benchmarking, the balanced scorecard or non-financial ratios for performance measurement. Finally, they apply budgeting and costing for managerial purposes only at a moderate level.

Four years after the crisis outbreak, the number of Greek SMEs that apply both a budgeting and a costing system has significantly increased. Budgeting is still developed on an annual basis, it provides the same, rather satisfactory, perceived level of detail and it is produced following the same dual method. However, a significant increase in the use of budgeting for managerial purposes other than just performance evaluation (i.e. planning and implementing strategy, and communicating with banks) is witnessed. The use of costing for planning is also increased. The firms embark on both customer and competitor analysis, while the assessment of performance is mainly conducted with the use of financial ratios and profit information. Nevertheless, traditional techniques are still preferred to modern ones.

Reasons leading to change

The reasons that led to the aforementioned changes in the management accounting systems of the Greek SMEs require further examination. The last section of the questionnaire asked the respondents to rate the

significance of the impact, if any, of four factors on the change in their management accounting systems during the examined period. These factors were the following: (a) measures taken by the firm in order to face the financial crisis (“Firm measures against crisis”), (b) the increased difficulties in receiving financial support from banks (“Bank finance reduction”), (c) the reduction of customers purchasing power (“Purchasing power reduction”) and (d) the increase in competition with larger firms (“Competition increase”). The results (Table 8) reveal that, according to the respondents’ perceptions, the factors which mainly affected their firms and led them to change their management accounting systems were the decrease in consumers’ purchasing power, the measures taken by the firms to face the financial crisis and the increased difficulties in receiving financial support from banks. The increase in the competition with larger firms was rated as a factor with less importance. By conducting a T-test to examine the statistical difference from the average value of 3 regarding the influence of these factors on management accounting systems’ change, it was found that only in the cases of “Firm measures against crisis” and “Purchasing power reduction” the values were statistically different from the average. Thus, these two factors constituted important driving forces behind the changes in the management accounting systems of Greek SMEs.

Reasons for changes		Purchasing power reduction	Firm measures against crisis	Bank finance reduction	Competition increase
1	N	30	25	34	32
	%	18.6	15.5	21.1	19.9
2	N	12	15	26	28
	%	7.5	9.3	16.1	17.4
3	N	34	43	22	40
	%	21.1	26.7	13.7	24.8
4	N	47	41	33	38
	%	29.2	25.5	20.5	23.6
5	N	38	37	46	23
	%	23.6	23.0	28.6	14.3
Mean value		3.32	3.31	3.19	2.95
St. deviation		1.403	1.343	1.527	1.336

1-5 Likert scale, where 1: Not at all, 5: Very much

Table 8: Factors leading to change

Change-deniers

It is interesting to take a closer look to the profile of the 25 firms (15.5% of the sample) which persist in not adopting a budgeting system even in a time period deep into the financial crisis. Out of these 25 firms only two do not have a costing system as well, while their vast majority (20 of the 25) corresponds to Public Limited Companies. These change-deniers do not differ from the rest of the sample regarding the use of costing for managerial purposes and the use of management accounting and performance measurement techniques. However, change-deniers perceive the four factors that could potentially lead a firm to change its management accounting systems as less significant compared to change-adopters.

Differences due to the actual size and sector

The findings already discussed do not seem to be influenced by the firm size or the sector the firm belongs to. By conducting a T-test on the mean values of all variables for small and medium-sized firms no statistically significant differences were found. In the same realm, the conduction of One-way ANOVA analysis did not reveal any statistically significant differences among manufacturing, retail and service providing sectors.

Conclusions

In this study we aimed at examining the impact of the severe financial crisis that is evident in Greece since 2009 on the management accounting practices and techniques applied by SMEs. Based on the relevant literature, it is hypothesized that SMEs would respond to the crisis by improving their existing management accounting systems, through the adoption of more sophisticated budgeting and costing systems, as well as by using innovative management accounting techniques and performance measurement practices.

The responses of 161 SMEs on a structured questionnaire help us draw the profile of the Greek SMEs at two periods: at the outbreak of the crisis (i.e. year 2009) and at a point deep into the crisis (i.e. year 2013). The overall conclusion is that there has been an increase in the number of firms starting to apply budgeting and costing systems. Moreover, an increase is evidenced regarding the use of budgeting for managerial purposes such as firms' performance evaluation, planning, strategy implementation and

communication with banks. In the same realm, the use of costing is expanded to pricing, control, planning and employee performance evaluation purposes. Furthermore, the application of management accounting techniques such as Competitor and Customer analysis and Benchmarking are becoming more widespread thanks to the crisis environment. The same holds true for the use of financial and non-financial ratios, budget deviations and balanced scorecard for performance assessment. However, in most of the SMEs the increase in the intensiveness of use of these tools is only moderate. This finding provides an indication that, despite the crisis, the majority of SMEs do not apply, at least to a significant extent, more sophisticated methods. The cost of adopting sophisticated management accounting practices may be prohibitive for Greek SMEs to embark on such solutions during a period of recession. Larger firms could more successfully “commit resources” for the development and implementation of such practices (Carenzo and Turolla, 2010).

According to the respondents’ perceptions, most of the changes in management accounting systems are decided either as a direct measure to respond to the crisis or as a means to face the reduction in the purchasing power of customers and the restrictions to banks’ financing. Therefore, the various facets of the financial crisis resulted in the adjustment of the management accounting systems of SMEs. Interestingly, the least important factor affecting firms in their decision to improve their management accounting systems is the intensification of the competition with larger firms.

The conclusions of the study are subject to a number of limitations. Firstly, the restricted sample size constitutes a limitation. The results of the study are based on 161 responses. Despite the fact that all sectors are represented in the sample (41 firms belong to the manufacturing sector, 41 to the service-providing sector and 79 to the retail sector) the number of companies participating in the study is relatively low and the results should be interpreted having this in mind. Furthermore, since the questionnaire of the study was administrated in the year 2013 the sample is composed of surviving SMEs. Future field-based research with structured interviews, incorporating insights from both surviving and non-surviving firms will contribute to better understanding of the management accounting practices and techniques as a reaction to the financial crisis.

This study aimed at shedding some light on how SMEs adjust their management accounting systems and adapt the use of management accounting information when they operate in the context of a financial crisis. As Greece is not the only country affected by the global financial crisis, it would be an interesting avenue for future research to study whether the Greek findings are also applicable to SMEs in other European countries, especially southern European ones, operating under similar financial and market conditions. Moreover, the identification of how firm-specific or management-specific factors may influence the adoption of management accounting practices and techniques would enrich our understanding on the way SMEs decide on the management accounting systems they actually use.

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