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CASE STUDY

NPM Reforms in Napoleonic Countries: A Comparative Study of Management Accounting Innovations in Greek and Italian Municipalities

Rebecca L. Orelli, Emanuele Padovani, and Epameinondas Katsikas

Department of Management, University of Bologna, Bologna, Italy; Kent Business School, University of Kent, Canterbury, UK

ABSTRACT

This is a comparative study of the rationale and effects of management accounting innovations in Greek and Italian municipalities, as part of the NPM reform in the public sector. This article aims to understand the extent of adoption of accounting innovations in Greek and Italian municipalities, and the factors affecting the specific techniques in use. The study reports on a survey based on medium-sized and large Italian and Greek municipalities, targeted at public municipalities’ accountants, the users of accounting techniques. The study identifies the intended purposes of NPM reform and, particularly, management accounting innovations, analyzes a set of factors that affect the implementation of management accounting technologies, and discusses determinants and features of such innovation on a comparative perspective.

KEYWORDS

Greece; Italy; management accounting; new public management; reforms

Introduction

Over the last two decades, in many countries reforms to the public sector have been deployed. Such reforms have given accounting a central role (Hood, 2000, 2005), and many of them show a number of features often summarized under the concept of New Public Management (NPM) (Hood, 1991; Osborne & Gaebler, 1992) or New Public Financial Management (NPFM) to highlight the importance of the financial dimension (Olson, Guthrie, & Humphrey, 1998). An accounting dimension is regularly included in public sector reforms (Peters, 1997; Pollitt & Bouckaert, 2004), and that is the reason why a significant volume of research has been conducted in the field of public sector accounting, widely discussed and described for many countries (Carlin, 2005; Chia & Koh, 2007; Jackson & Lapsley, 2003; OECD, 1997; Pallot, 1999; Van Helden & Jansen, 2003).

In each of the countries where NPM was introduced, a different policy was followed to obtain an efficient and effective organization using private sector-style management instruments (Hood, 1991; Olson et al. 2001). Management accounting innovations were often a first phase of reforming governments, followed by the reform of governmental management, organization, and other segments of public administration. On the other hand, it is possible that management accounting reforms were introduced without a strict NPM perspective in mind (Lüder & Jones, 2003, p. 21); nevertheless, the management accounting reform is an important condition for the success of NPM reforms, as it can be seen as a key ingredient in managerial decision-making process (Pettersen, 2001, p. 526).

A considerable number of studies have explored the role of management accounting (see for all Ittner & Larcker, 2002; Malmi & Granlund, 2009) and its impact on public sector change (Lapsley, Brown, Jackson, Oldfield, & Pong, 2003) and modernization (Hood, Baldwin, & Scott, 1998; Peters & Pierre, 2001); however, most of them have been focused on pioneers of NPM-like reforms, neglecting the more laggard Napoleonic tradition countries, seen as “slow movers” toward NPM reforms (Peters, 2008). This study aims to fill the gap in the literature, analyzing the local governments of two countries, Italy and Greece, which Hesse and Sharpe (1991) recognize as being part of the same “Franco” group (as opposed to the “North,” “Middle European,” and the “Anglo” groups), as well as France, Spain, and Belgium. Particularly, the focus of the study is on municipal governments, which are considered as the closest level of government to the citizens and receive a growing attention in terms of comparative studies (Padovani & Scorsone, 2009). Local governments in Greece and Italy have started to adopt the accrual basis accounting system in parallel with the cash basis accounting system. This coexistence is very interesting as the cash basis system is compared to the accrual basis system that is in the process of institutionalization. As a
result and in alignment with Pina, Torres, and Yetano (2009) the anticipated facilitation of the publication of financial statements will coincide with the existing traditional budgetary systems.

With these premises, the article undertakes a comparative study of the rationale and effects of management accounting innovations in Greek and Italian municipalities. It identifies the intended purposes of management accounting innovation, as part of the NPM movement of reform, analyzes a set of factors affecting the implementation of management accounting technologies, and discusses determinants and features of such innovation on a comparative perspective. This is done considering the politico-administrative context, the design of the accounting reform package, and the building over time of management accounting capacities at the level of individual Italian and Greek municipalities.

The article is structured in six sections. In the next one, the existing literature on innovation and management accounting innovations is reviewed and the research hypotheses are being specified. The third section provides a background of the NPM reforms path in Greece and Italy, with particular reference to municipalities. The fourth section describes the research methods, while results are presented and discussed in the fifth section. The final section draws some conclusions and discusses further implications for policymakers and researchers.

**Innovation and management accounting innovations in the public sector**

An innovation can be described as the successful introduction of ideas that can be considered new into a given social system (among others, Bradford & Kent, 1977). According to this definition, old ideas allied to new settings or even old ideas being introduced into the same setting at a later point in time may be seen as innovations. Rogers (1995) argues that the different characteristics of innovations help explain their different rate of adoption. Furthermore, according to Rogers (1995), an innovation may be defined as a new idea or practice by an individual, organizational, or any other adopter. The innovation process involves the development and implementation of new ideas and as such it has been described by Van De Ven (1986) in the same manner with the addition that it occurs between individuals in an institutional context. The fact that it occurs in an institutional context implies that individuals engage into transactions, which in fact promote communication. In the current research, the process of innovation refers to the adoption of management accounting techniques. Furthermore, in the current research we will follow the definition of the innovation process as provided by Hornsgren, Foster and Datar (2000, pp. 2–3), who define innovating as: “Measures and reports financial and nonfinancial information that helps managers make decisions to fulfill the goals of an organization. It focuses on internal reporting.” By integrating the definitions provided above we can derive to a new modified and comprehensive definition of management accounting innovations as being a new idea that is adopted by an organization and assists in the design of financial information systems and in decision making. Innovations can be distinguished by numerous characteristics such as administrative and technical, radical and incremental. Dunk (1989), Foster and Ward (1994), and Shields (1995) have argued that management accounting innovations are to a great extent assumed to be radical and administrative ones. Many management accounting innovations incorporate new elements of technical and/or administrative nature and consequently their implementation leads to numerous related innovations (Van De Ven, 1986, 1993) and also to the purchase of particular software and the establishment of new functions (technical and administrative).

According to Pollitt (2002a, p. 280 and 2002b, p. 278), the adoption of NPM innovations can be distinguished in four different stages: disclosure, in the sense of conceptual agenda for NPM; decisions, to be taken by public sector organizations; practices, the ways in which technical NPM innovations are used by public sector organizations, including contextual and organizational factors that may influence the use of new techniques in practice; and impacts of changes in public administrations, such as resource savings, process improving, efficiency gains, improvements in terms of quality, and effectiveness. It has also been argued by Pollitt (2000) that it is due to discourse that Western countries have shown evidence of NPM convergence without providing an equal amount of evidence with regard to impacts and practices that derive from it. Furthermore, he suggests that the relevant literature is inclined more toward the stages of disclosure and decision making rather than the stages of practices and impacts.

To fill this gap, we focus our attention on the practice stage and, particularly, on the features for the implementation of management accounting innovations. Within the public sector, management accounting innovations have to be considered with regard to their connections with financial accounting choices. In fact, under the latter point of view, the adoption of accruals accounting in public entities is often...
considered one of the most important innovations in NPM disclosure (Hood, 1995; Guthrie, 1998; Olson et al., 1998).

Management accounting change has been constantly debated in the recent two decades when attempting to strengthen the accountability and the efficient use of resources in organizations of the public sector. According to Burns and Scapens (2000), the key theme in this debate has been management accounting change and more specifically the examination of whether management accounting has or has not or should be subject to change. Consequently, the practice of management accounting change has attracted an increasing number of empirical researches, which has covered various countries and business sectors together with the application of numerous research methods and perspectives (Burns & Vaivio, 2001). The number of studies that are dedicated to the accounting reforms that take place in the public sector is constantly growing (Arnboldt & Lapsley, 2009; Burns & Scapens, 2000; Clarke & Lapsley, 2004; Hoque & Moll, 2001; Lüder & Jones, 2003; Monsen, 2002; Pettersen, 2001) and they explore management accounting in terms of its role and impact on the reforms of the public sector. There are numerous factors that have encouraged the modernization of management accounting, but additional evidence is still required about how management accounting has been modified and applied in new systems of accounting in the public sector. This lack of additional evidence has given rise to criticism on NPM from academics who state that “there is little evidence that the application of reform strategies based on New Public Management actually leads to the desired results” (Christensen & Laegreid, 1999, p. 1).

The gains to be derived from the application of the accrual systems of accounting in public sector organizations have also been subjected to criticism (Barton, 1999; Guthrie, 1998; Hoque & Moll, 2001; Hyyönen & Järvinen, 2006; Lapsley, 1998, 1999; Mellet, 1997; Monsen, 2002; Olson, Guthrie, & Humphrey, 1998). In addition, the benefits deriving from the implementation of accrual basis accounting as compared to cash basis accounting have been investigated by Mellet (1997) and Barton (1999). Hyyönen & Järvinen (2006) have argued that the culture developed during the era of cash basis accounting is not completely abandoned when the accrual basis system is implemented. In many countries, reforms of financial accounting nature dictated the adoption and implementation of the accrual basis system at the expense of the cash basis one (Christiaens & Rommel, 2008; Christiaens & Van Peteghem, 2007; Christiaens, 2001; Hoque & Moll, 2001; Richardson & Cullen, 2000; Venieris & Cohen, 2004).

Being a very important management accounting innovation, accrual basis accounting has been viewed as a key innovation in the process of pursuing various NPM principles (Lapsley, 1998; Likierman, 2000; Lye, Perera, & Rahman, 2005). It has been evidenced in many studies that accrual accounting elements have actually been adopted by a considerable number of countries and that they are also considering and willing to implement additional ones mainly in the short-term future (Jones, 2000; Lüder, 2000; Paulsson, 2006).

The accrual information system usually provides useful accounting information for these tools and techniques (Venieris & Cohen, 2004). It helps improve the quality and consistency of the information provided to decision makers, and holds managers accountable for the cost of resources and match with the results obtained (Anthony, 2000). According to Pollitt and Bouckaert (2004, p. 71), financial accounting innovations follow these steps: in the beginning there is a traditional cash-based accounting system, then a shift to a double-entry bookkeeping, sometimes with elements of cost analysis, then modified cash or modified accrual-basis, and finally the full accruals accounting (with a focus on providing performance-related information).

The adoption of management accounting innovations implies behavioral change in response to reforms (Lapsley & Pallot, 2000), and reflects the flexibility of the entity and its members to apply administrative tools. Consequently, the success of the adoption can be seen as a perception of a reduced uncertainty and of the achievement of the desired outcome of a managerial reform (Chia & Koh, 2007). Studies report a positive association between user involvement in the design of accounting information systems and the success of innovation (Kaplan, 1988; Birnberg & Snodgrass, 1988). Consequently, a high level of organizational innovation is expected to be associated with both a high degree of adoption and success of management accounting techniques. Within the public sector, various management accounting innovations can be identified and adopted to optimize both decision making and resource management. Jackson and Lapsley (2003) looked at management accounting innovations in the Scottish public sector, including costing, budgeting, and performance measurement tools, and illustrated that the majority of the innovations are taking place in the area of performance measurement. Their study illustrated that over half of local authorities were not using any of the budgeting techniques and the area of costing showed the least action in terms of the implementation of new technologies. Furthermore, Lapsley and Wright (2004) investigated the process through which these ideas and management accounting innovations travel and become
successful, starting from the previous findings from Jackson and Lapsley (2003). They demonstrated that the techniques in use in Scottish local authorities are activated mainly by legislation and in response to external demands. The current research aims to extend these results via focusing on the processes behind diffusion. Thus, hypothesis 1 shown below summarizes the implications of this discussion.

Hypothesis 1: The more advanced the accounting systems employed, the higher the adoption of management accounting tools.

Management accounting innovations require the implementation of new technologies. Miller and Rose (1990) highlighted that programs of government do not work by themselves, but require “technologies” if they are to be made operable. Technologies are devices for intervening (Hacking, 1983), and they include notation, computation, and calculation, procedures of examination and assessment, etc. In the public sector, Information and Communication Technology (ICT) application has the aim of reducing costs and improving the communication between different services (OECD, 2001). There is increasing evidence in the literature of benefits obtained from ICT application in the adoption of accrual accounting systems and management accounting techniques (see for all Garson, 2005).

The evidence provided by the various academic studies on the influence of IT on management accounting innovations is mixed. Shields (1995) found that there is no association between IT and the implementation of a specific technique of management accounting (namely activity-based costing), while Anderson and Young (1999) found that the existing IT system’s quality relates in a negative manner to the evaluation of the success of that technique by the management. Krumwiede (1998) reported on the positive association between an existing IT system and the decision made by an organization to adopt activity-based costing at more advanced stages. Surveys performed in the private sector have shown that IT problems (i.e. reliability of data, proper timing, and cost effectiveness) constitute the main obstacle to the implementation success of innovations relative to performance measurement. In a survey, Perrin (1996) found that the implementation of another technique of management accounting, namely balanced scorecard, from the user perspective is affected at a rate of 44% by the lack of developed IT systems. Similar types of results are reported in other small-scale field studies performed in the public sector in the United States (General Accounting Office, 1997a). Thus, it is suggested by the studies described above that the problems of IT systems in public sector organizations are coupled with issues relative to accuracy and quality of the data that is collected by other organizations (i.e. governmental organizations).

Numerous factors (e.g. the ability of IT systems to provide the data required and the extent to which organizations can define and develop appropriate measures, and organizational issues) have been identified by existing studies on management accounting innovation, change in information systems as well as public sector reform, and are anticipated to influence the implementation of performance measurement techniques (Shields & Young, 1989). The review of the literature on IT implementation (Kwon & Zmud, 1987) shows that some of the key factors that influence the implementation are technological issues concerning the compatibility between the existing and the new IT systems, upon which management accounting techniques are based. Based on this literature, researchers in the area of accounting argue that the success of management accounting innovations is directly associated with and constitutes a function of the capabilities of the IT system employed. In a study by Krumwiede (1998), it is suggested that organizations with IT systems of higher quality are able to facilitate the implementation of new systems of measurement. On the other hand, a negative relation may result in the case managers being reluctant to invest resources for the implementation of a new system claiming their satisfaction with the current system. (Kravchuk and Schank, 1996). As a consequence, the issues analyzed in the above discussion prompt our second hypothesis:

Hypothesis 2: The stronger the ICT support, the higher the adoption of management accounting tools.

Consequently, a high level of ICT technologies is expected to be associated with the successful implementation of accounting reforms, in terms of both management accounting techniques and the accounting system employed.

NPM reforms in Greek and Italian local governments

Other than belonging to the “Franco” group, Italy and Greece are among those countries that, broadly speaking, follow what may be called the Napoleonic or fused hierarchy system of central–local relation (as well as Belgium, Portugal, Luxembourg, and Spain) (Hesse & Sharpe, 1991). The Napoleonic administrative tradition has been characterized as having an initial suspicion
toward managerial reforms because of its strong legal-code orientation and its traditional state bureaucracies (among others, see Dunleavy & Hood, 1994; Guthrie, Humphrey, Jones, & Olson, 2005; Peters, 1997, 2008; Pollitt & Bouckaert, 2004).

The modern bureaucracies of Greece and Italy have developed along the lines of the Napoleonic tradition, but they have also differed from this tradition (Gunther, Diamandouros, & Sotiropoulos, 2006, p. 197; Ongaro & Valotti, 2008; Spanou, 2008). The larger Italian public sector had become important for the economy much earlier than the corresponding sector of Greece. Moreover, in the early 1970s Italy initiated its administrative decentralization, with the creation of 20 regional authorities. This process of decentralization clearly distinguishes Italy from the timid attempt of the Greek state to decentralize. The decentralization process has been accompanied by local concerns from the provinces and regions that they are being delegated new tasks from the center without adequate resources to carry them out (Pollitt & Bouckaert, 2004, p. 68). Even if Italy is in many respects a very advanced West European economy and polity, nonetheless its state bureaucracy remains Napoleonic, as well as Greece (Gunther et al., 2006, p. 229).

Italian and Greek governments have been aligned with the NPM’s calls for change in the public sector (Guthrie, 1998; Hoque & Moll, 2001). Studies show that cases of best practices implementation of accounting reforms do exist both in Italy and in Greece (Anessi-Pessina, Nasi, & Steccolini, 2008; Caccia & Steccolini, 2005; Cohen, 2008; Venieris & Cohen, 2004). Most of those studies concerning Napoleonic tradition countries show contrasting situations from best practices at an international level, usually through voluntary initiatives, to non-reform implementers.

Contrasting the last 20 years of reforms in Italian and Greek municipalities, three similar phases can be identified. The first phase concerns the introduction of NPM principles and management accounting techniques and took the last decade of 20th century; the second was characterized by a reinforcement of the NPM principles, even though ICT tools, and took almost the first decade of the new century (until 2008); and the third, which begun in 2009, has as its main issue the performance management assessment.

In the following Table 1, we summarize public sector reforms in Greece and Italy, showing similarities in the extent to which Napoleonic tradition has influenced determinants and features of municipalities autonomy and the design of the management accounting techniques.

Methodology

This is a comparative study focusing on Italian and Greek municipalities. The study was conducted in 2011 and 2012 using a questionnaire survey targeted at public municipality accountants, who represent the users of management accounting technologies.

The study design was modeled after the survey of Jackson and Lapsley (2003), who included nine management accounting techniques in the survey instrument, namely functional analysis, key performance indicators, balanced scorecard, zero-based budgeting, resource management, activity-based management, target costing, activity-based costing, and strategic cost management. Specifically, the questionnaire was divided into two sections that were respectively aimed at investigating the actual configuration of management accounting techniques used by municipalities and analyzing the conditions in which management accounting technologies are adopted in terms of accounting systems and ICT tools of the municipalities. In order to avoid misunderstandings concerning the nine accounting techniques questioned, an explanation of each of them was given to respondents.

Prior studies suggested that size is an important factor in the design of certain characteristics of management accounting systems in organizations. Size reflects organizational complexity in terms of magnitude and scope of information, which must be handled by the organization in its ongoing activity. The greater an organization is, the more it handles and provides information, which leads to the adoption of more sophisticated management control tools (Anessi-Pessina et al., 2008; Child & Mansfield, 1972; Van Dooren, 2005). In both countries analyzed, we decided to select all the medium and large municipalities, with more than 40,000 inhabitants, according to the 2001 Census (National Statistical Service of Italy, 2006; General Secretariat of the National Statistical Service of Greece, 2003). Metropolitan municipalities had been excluded from the survey, for their differences in terms of services offered to citizens, which make them not comparable. In the end, a number of municipalities representing the 20% of population in each country were included in the survey, n. 168 Italian municipalities and n. 46 Greek ones. An effective response rate of 82.7% for Italy and 84.8% for Greece was achieved.

In order to test our hypothesis, we considered the nine management accounting techniques as dependent variables, and the ICT advancements and accounting systems as the explanatory ones. More specifically, we developed an index for management accounting tools, as a single dependent variable, and then used ICT advancement and accounting systems as independent variables. This type of
Table 1. Reforms in Italian and Greek Municipalities.

<table>
<thead>
<tr>
<th>Italy</th>
<th>Greece</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>FIRST PHASE—NPM PRINCIPLES (1990–1999)</strong></td>
<td></td>
</tr>
<tr>
<td>Introduction of NPM principles, with emphasis on management accounting tools and performance measurement, and statement of compulsory financial accounting model</td>
<td>1990</td>
</tr>
<tr>
<td>NPM principles introduction. Division of responsibilities between politicians and managers, managers’ responsibility for results, autonomy, accountability, management control system, performance measurement and management, outsourcing, and competition (Law no. 142/90).</td>
<td>1990</td>
</tr>
<tr>
<td>Managerial accounting tools to support NPM principles and management control systems introduction. Restatement of municipalities’ financial position in terms of financial accounting, and compulsory adoption of cash accounting with accrual report at year end (Decree no. 77/95).</td>
<td>1995</td>
</tr>
<tr>
<td>Management control systems are emphasized (Decree no. 286/99)</td>
<td>1999</td>
</tr>
<tr>
<td>Unification of prior initiative/laws, introduction of ICT tools, settlement of accounting principles</td>
<td>2000</td>
</tr>
<tr>
<td>Unified body of laws and decree on general management and accounting of local governments (Decree no. 267/00, Local Governments Act)</td>
<td>2000</td>
</tr>
<tr>
<td>A governmental strategic approach to innovation and implementation of e-government starts</td>
<td>2001</td>
</tr>
<tr>
<td><strong>THIRD PHASE—PERFORMANCE MANAGEMENT ASSESSMENT (2009–ongoing)</strong></td>
<td></td>
</tr>
<tr>
<td>Establishment of performance measurement methodology and third-party assessment</td>
<td>2009</td>
</tr>
<tr>
<td>Performance management, assessment of individual and organizational performance, benchmarking through a specific national authority (Law no. 15/09 and Decree no. 150/09, “Brunetta Reform”)</td>
<td>2009</td>
</tr>
<tr>
<td><strong>Performance measurement, evaluation and assessment of the municipalities, and the methodology for its implementation (Municipal and Communal Law no. 3463/2009)</strong></td>
<td></td>
</tr>
</tbody>
</table>

Research has been conducted previously by many authors (e.g. Abernethy & Lillis, 2001; Cavalluzzo & Ittner, 2004; Moynihan & Pandey, 2010; Van Dooren, 2005; Verbeeten, 2008). This way of data analysis enables one to test the hypotheses previously identified. The nine management accounting techniques correlation is measured by the Cronbach (1951) alpha coefficient, which was 0.87 for Greece and 0.88 for Italy. This provides support for summing the nine items relating to the performance measurement.

Lastly, the research is based on a cross-country comparison within the Italian and Greek public sectors; therefore any generalizing of the conclusions beyond this context should be undertaken with care. Nevertheless, it provides an analysis of the accounting practices and the reform process enabling their adoption, which represents a contribution to understand management accounting changes in municipalities.

Results and discussion

Starting from the degree of adoption of management accounting techniques, Table 2 provides a summary of the adoption rate for each technique in both Greek and Italian municipalities surveyed.

The adoption value shows that most of the techniques are taking place in the area of performance measurement in both countries. Notably, within this area, the adoption of key performance indicators is in use by 82.0% of Italian municipalities and by 56.4% of the Greek ones. Among the other performance measurement techniques, Italy and Greece present a common
trend, with a quite high use of functional analysis in the performance measurement area, of zero-based budgeting in the budgeting techniques area, and of target costing and strategic cost management in the costing techniques area.

The high level of key performance indicators seems to have the same roots well depicted in the study of Lapsley and Wright (2004). Behind the very high level of adoption of KPIs there might be the concept of performance regime. It refers to the idea that within any public sector there are such actors, including government departments, line ministries, legislatures, audit, inspection, and regulatory bodies, judicial bodies, professional institutes, and users, who may have the power to share the type and impose the use of performance measures within the entire or certain functional areas of local government (Talbot, 2008). In the Italian case, this is consistent with previous research that has documented more than 80% of municipal governments use key performance indicators, but the vast majority is in response to a requirement by law, since only 3% provide further non-mandatory performance measurements (Pavan, Reginato, Conversano, & Fadda, 2009).

Within the budgeting techniques area, the first largest grouping occurs with zero-based budgeting in both the countries surveyed, and, then, in activity-based management. While the similar results concerning zero-based budgeting can be explained, as well as key performance indicators, with the concept of financial regime, results concerning activity-based management seem to highlight an inherent difference between Italy and Greece in terms of financial autonomy. It can be argued that Greek municipalities have developed activity-based management more frequently because the level of complexity related to the width of the resources that can be actually managed is far less than in the case of Italian municipalities. In other words, having fewer resources to manage means having the real possibility to adopt activity-based management.

Lastly, in the area of costing techniques, while activity-based costing is a method that has a rather scarce use across Italian and Greek municipalities, target costing and strategic cost management present a high showing. Previous research demonstrated a rather scarce use of activity-based costing in Italian municipalities (Orelli & Visani, 2004), due to the inappropriate choices in terms of accounting system and ICT tools. At present, the situation seems to be unchanged, with a low use of this technique. Similarly, in Greece prior research has provided supporting evidence regarding the partial application of activity-based costing and activity-based management in the public sector, municipalities, and prefectures (Vazakidis, Karagiannis, & Tsialta, 2010). In both countries, it is reported a consistent use of target costing and strategic cost management. Maybe for both countries there is a fashion effect, which pushes toward the adoption of costing techniques, at least for selected areas of municipality. The fashion effect is made possible because activity-based costing and activity-based management are considered two of the most interesting techniques of management accounting by authors nowadays (see for all Panozzo, 2000).

Having examined the degree of adoption of management accounting techniques, we now consider the effect of some explanatory variables of the situation. The first one is the influence of the accounting systems sophistication on the levels of adoption of management accounting techniques; the second one is the ICT support. As described in section 3, the hypotheses are as follows:

Hypothesis 1: The more advanced the accounting systems employed, the higher the adoption rate of management accounting tools.

Hypothesis 2: The stronger the ICT support, the higher the adoption of management accounting tools.

As explained in the methodology section, to test our hypothesis we merged the nine management accounting techniques in a singular index labeled Management Accounting Index and we use that index as a single dependent variable, and then use ICT advancement and accounting systems as independent variables.

Table 3 provides the descriptive statistics and the correlation matrix for Italian and Greek municipalities. For each country, Table 3 shows the three variables: (1)
management Accounting Index, (2) Accounting Sophistication, and (3) ICT Adequacy. For each variable it is reported Mean and Standard Deviation as well as the Pearson Correlation among variables with their significance value (* for \( p < 0.05 \) two-tailed, ** for \( p < 0.01 \) two-tailed).

Table 3 highlights that the independent variables, namely accounting sophistication and ICT adequacy, have a significant impact on the Management Accounting Index. In other words, management accounting techniques are strictly related to the presence of a sophisticated accounting system and an adequate ICT environment. Such kind of evidences confirms both our hypotheses.

Considering the first hypothesis, the more advanced the accounting systems employed, the higher the adoption rate of management accounting tools, we can assert that management accounting techniques stress the importance of an effective and adequate implementation of an accrual accounting system, because they require access to adequate information provided by the accounting system. In both Italian and Greek municipalities, the main reason for adopting new accounting practices is legislation or regulation and that is in line with the Napoleonic-tradition style (Kickert, 2011; Kuhlmann, 2010). From a technical point of view, the Italian legislation requires mandatory accrual-based reporting and not mandatory accruals accounting, while in Greece municipalities have to comply with a compulsory parallel accounting system. Consequently, Italian municipalities should be a fertile field for their adoption. According to Anessi-Pessina et al. (2008), about half of Italian medium and large municipalities have introduced accruals accounting to integrate traditional budgetary accounting. A compromise would be for budgetary and accruals accounting to coexist. Greece has followed this path, introducing a compulsory parallel system. Some authors have argued that budgetary and accrual accounting can be usefully integrated (Monsen, 2002), but for other authors such coexistence seems to be problematic (Anthony, 2000; Guthrie, 1998; Paulsson, 2006).

We can conclude that the NPM agenda, giving preference to a particular kind of accounting for municipalities, prepares the background for the adoption of management accounting techniques.

Considering the second hypothesis, the stronger the ICT support, the higher the adoption of management accounting tools, we can assert that management accounting techniques need effective and adequate ICT environment to develop.

The ICT development is normally not connected directly to the management accounting techniques implementation. On the contrary, usually ICT tools are introduced to support the accounting system requested by law. But, once in place, ICT fosters the introduction of management accounting techniques. In Greece the introduction of a compulsory new accounting framework required ICT systems to resolve or, at least, facilitate the new setting. In Italy, municipalities, which switched from the

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**Table 3. Descriptive Statistics and Correlation Matrix for Italian and Greek Municipalities.**

<table>
<thead>
<tr>
<th></th>
<th>Mean (Std. Dev.)</th>
<th>Pearson Correlation (significance level)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(1)</td>
<td>(2)</td>
</tr>
<tr>
<td><strong>Greece</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Descriptive Statistics and Correlation Matrix</td>
<td></td>
<td></td>
</tr>
<tr>
<td>( n = 39 )</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(1) Management Accounting Index</td>
<td>2.69 (2.64)</td>
<td>1</td>
</tr>
<tr>
<td>(2) Accounting Sophistication</td>
<td>3.18 (0.68)</td>
<td>0.63** (0.01)</td>
</tr>
<tr>
<td>(3) ICT Adequacy</td>
<td>4.03 (0.74)</td>
<td>0.76** (0.01)</td>
</tr>
<tr>
<td><strong>p</strong> ( &lt; 0.01 ) level (two-tailed).</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Italy</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Descriptive Statistics and Correlation Matrix</td>
<td></td>
<td></td>
</tr>
<tr>
<td>( n = 139 )</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(1) Management Accounting Index</td>
<td>3.55 (2.88)</td>
<td>1</td>
</tr>
<tr>
<td>(2) Accounting Sophistication</td>
<td>2.12 (0.93)</td>
<td>0.80** (0.01)</td>
</tr>
<tr>
<td>(3) ICT Adequacy</td>
<td>2.96 (0.94)</td>
<td>0.21* (0.012)</td>
</tr>
<tr>
<td><strong>p</strong> ( &lt; 0.01 ) level (two-tailed); * ( p &lt; 0.05 ) level (two-tailed).</td>
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</tbody>
</table>
budgetary to the integrated accounting system, had to satisfy the same need.

Moreover, it is important to clarify that, given a certain accounting system, the ICT tools can be more or less supportive with the management accounting techniques. The adequacy of ICT tools for the implementation of management accounting techniques in Italy is higher when the accounting system adopted is integrated, while in Greece it is connected to the implementation of a parallel accounting system. Consequently, Italian respondents think that the best ICT configuration for the implementation of management accounting techniques is the one that develops in correspondence to the integrated accounting system. In Greece, even if, at the moment, the adoption of ICT tools seems to be more adequate in the case of parallel accounting, respondents think that for the implementation of management accounting techniques, an integrated system would be more appropriate. The accounting reform for the Municipalities in Greece via the prism of the NPM initiative is very interesting. Among other reasons for the limited application of ICT, there have been the “limited functionality against the user requirements of commercial software, inefficient integration with the actual business processes, the attitude of the staff in the accounting departments and of the public servants of the municipalities as well as the actions and omissions of external parties such as legislative bodies and supervising authorities” (Cohen, Kaimenaki, & Zorgios, 2007, p. 17).

**Concluding remarks**

The article was aimed at exploring the extent to which the Napoleonic tradition influences determinants and features local government autonomy and design of the management accounting package. Greek and Italian local governments have been submitted to the NPM’s calls for change in the public sector; there were no studies showing the effect of Napoleonic countries’ choices, both in terms of management accounting reforms.

Starting from a different compulsory accounting system, our findings show that both Italian and Greek municipalities widely engaged with management accounting techniques, even though to a different extent. Moreover results showed that ICT tools are considered a central factor that may affect the development of accounting reform and the use of management accounting techniques, in both Italian and Greek municipalities.

Considering the legislative setting, which constitutes the first or sole basis for placing a reform in Napoleonic tradition countries, in Italian municipalities the use of management accounting techniques have not been introduced by any specific rule, except for a codified key performance indicators set that is required to be provided within the annual reporting system. In Greece management accounting tools have been introduced with the provision of key performance indicators for performance assessment purposes and costs control.

Judging the overall results seems that the most important reason for accounting innovation in Greek and Italian municipalities is an accounting reform given by law. Nonetheless, such kind of reform can have unintended consequences. An example is given by the accounting system, because in Europe there is a tendency of placing budgetary and accruals accounting side by side (Lüder & Jones, 2003). Anessi-Pessina and Steccolini (2007) have assessed the effects of such coexistence in Italian local governments, arguing that the coexistence delays the implementation of the new system. This can be the reason why Italian and Greek municipalities have adopted new integrated or parallel accounting systems, which represent more fertile fields for the implementation of management accounting techniques, but they are not largely implementers. Moreover, public entities are well known for reinterpreting managerial innovation in a bureaucratic fashion (Panozzo, 2000). If this is the case, management accounting techniques are not worth much effort, as happens with the most part of the techniques considered in the present study.

From the viewpoint of policymakers, the findings of this article suggest that the majority of management accounting techniques are implemented in condition of integrated or parallel accounting systems and with appropriate ICT tools. Consequently, central governments should consider the importance of management accounting techniques when they put in place a new element of NPM or NPFM reform. Management accounting techniques are the tools of internal government for any public sector entity. Without them the municipalities have no possibility of governing their strategies and achievements.

**References**


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