



# Reaping the benefits of two worlds

Cash and accrual  
accounting

## An explanatory study of the cash and the accrual accounting information roles in local governments

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### Abstract

**Purpose** – The purpose of this paper is to explore the coexistence of cash accounting and accrual accounting systems through an investigation of the roles they fulfill in Greek municipalities.

**Design/methodology/approach** – The survey results are based on the answers of the financial department principals of 106 municipalities to a structured questionnaire. The roles of accounting investigated are informed by Ansari and Euske's model.

**Findings** – It appears that cash accounting information prevails in the major function of decision making, with accrual accounting information playing a secondary role. Larger municipalities seem to use accounting data more extensively than smaller ones for negotiations, both in accrual and cash terms.

**Originality/value** – The study sheds light on the actual use of accrual accounting information in a public sector setting, where customarily decisions were based on cash accounting considerations.

**Keywords** Greece, Public sector, Local government, Accounting, Accrual accounting, Cash accounting, Roles of accounting

**Paper type** Research paper

### 1. Introduction

Public sector has been traditionally using cash (budgetary) accounting information for decision making. However, the last 30 years there is a worldwide trend toward the adoption of accrual accounting techniques in the public sector, as in the private sector. Even though the strict adoption of accruals in public sector entities may not be easy due to measurement problems, lack of theoretical support and increased subjectivity (Chan, 2003) the expected benefits are overwhelmingly more significant in comparison to the drawbacks. These benefits correspond to an improved depiction of the financial condition of public sector organizations (Chan, 2003; Guthrie, 1998), enhanced fiscal transparency and accountability (Gillibrand and Hilton, 1998; Perrin, 1998; Ryan, 1998), improved performance (Christiaens and de Wielemaker, 2003; Likierman, 2000),

### JEL Classification: M41

The authors would like to thank the participants of the 5th International Conference on Accounting, Auditing & Management in Public Sector Reforms in Amsterdam, the participants of the EGPA Conference in Malta and the participants of the 8th HFAA Conference in Thessaloniki for comments on earlier versions of the paper.



better quality decision making in relation to the allocation of available resources (Gillibrand and Hilton, 1998; Goldman and Brashares, 1991; Hoque and Moll, 2001; Pallot, 1997; Ryan, 1998), more accurate performance measurement (Goldman and Brashares, 1991; Hodges and Mellett, 2003) and services' cost calculation (Guthrie, 1998; Pallot, 2001). Therefore, an increasing number of governments have initiated such accounting reforms (Guthrie, 1998). As Lapsley *et al.* (2009) comment, the adoption of accrual accounting is regarded nowadays as self-evident.

In this spirit, the Greek central government initiated a reform of local government accounting systems. This reform process aimed at the evolution of the municipal traditional single-entry budgetary accounting systems to double-entry accounting systems that combined cash and accrual information. Within this dual system cash accounting and accrual accounting would operate simultaneously but independently from each other. The coexistence of accrual and cash accounting poses an important question: what is the role of accruals in a context where cash accounting still operates in the same traditional manner? This situation becomes even more interesting due to the lack of any accrual-based performance measurement or performance assessment system imposed by municipalities' supervising authorities.

The scope of the study is to examine the role that accrual and cash accounting information play in a public sector environment where accruals may have been introduced but have not been embedded in a performance assessment system. The analysis is conducted according to the theoretical conceptualization of Ansari and Euske (1987).

Our empirical work lies in the stream of literature that examines the adoption of accrual accounting systems in a setting where cash accounting is still existent (Jones and Pendlebury, 1991; Christiaens, 1999; Christiaens, 2000; Christiaens and Van Peteghem, 2007). It offers an opportunity to observe the use of accrual accounting information in a context where the institutionalized cash accounting system is expected to continue to operate in the same traditional manner. Greek local governments share similarities in terms of administration structure with their counterparts in EU continental countries. As the local governments in these countries are in the process of adopting accrual accounting systems for the publication of general purpose financial statements which overlap with their traditional budgetary systems (Pina *et al.*, 2009), our conclusions are expected to have implications that go well beyond the frontiers of Greece.

The paper is structured as follows: the next section comprises the literature review regarding the roles accounting information may serve in the public sector. A brief presentation of the characteristics of Greek municipalities is found in Section 3. The fourth section describes the hypotheses tested while fifth section describes the research mythology. The sixth section is devoted to the statistical results while the seventh section discusses the conclusions of the study.

## 2. Literature review

The use of accounting information in the organizational context endeavors to facilitate decision making as well as to exert greater behavioral control over the organization's members (Zimmerman, 2008). In this view, accounting serves as a tool to minimize complexity and uncertainty in decision making. According to Hoque and Hopper (1994), despite what is widely accepted, managers use a variety of social/informal control mechanisms to cope with complexity and uncertainty, whereas formal controls (such as accounting systems) are maintained to comply with formal requirements of external stakeholders.

The realization that accounting and rationality in decision making do not necessarily go hand-in-hand becomes even more important in the process of determining the roles of accounting information in the public sector realm. Institutionalized norms and procedures that play a dominant role in public sector organizations maintain a strong grip on the patterns of organizational action. Hoque and Hopper (1994) argue that formal accounting controls will play a minor role in organizations if they fail to reflect the tradition, culture, economic and political factors that managers confront. Thus, in such contexts, a public sector reform aiming at the introduction of accruals probably produces accounting systems that do not contribute to the organizational processes. It is therefore likely that these systems will be loosely coupled with the organizations' core processes in a way that maintains the prescribed appearances without compromising its actual operations (Carruthers, 1995).

Ansari and Euske (1987) introduced an integrated conceptualization of the roles accounting serves in an organization in their research study on US army depots and they identified three distinct roles of accounting information. More specifically, accounting, according to Ansari and Euske (1987), can serve:

- (1) A technical-rational role – that is, whether accounting information is used to measure efficiency and to enhance decision-making.
- (2) A socio-political role – that is, whether accounting information is used in order to rationalize the organization's actions to its members and gain negotiating advantages as an “ammunition machine” (Burchell *et al.*, 1980).
- (3) An institutional role – that is, whether accounting information legitimizes the organization to its external stakeholders.

The technical-rational role constitutes the traditional mainstream approach to the use of accounting data by managers in organizations; it provides the means to improve the basis of managerial decision making, measure efficiency of operations and reduce uncertainty faced by managers. This type of information may be directed toward the needs of external stakeholders as well. As organizations have to be efficient to survive and efficiency is judged by external stakeholders, the internal measurement of efficiency is congruent with external needs. The socio-political and the institutional roles of accounting represent the “natural” uses of information which emphasize “[...] the way in which people in organizations are influenced by and in turn attempt to influence information systems” (Ansari and Euske, 1987, p. 552). Within these natural models, managers are viewed as “responsible agents that interact symbolically and thus create their social reality and give meaning to their ongoing stream of experience” (Boland and Pondy, 1983, p. 223). The socio-political role indicates the extent to which accounting is used by managers to rationalize and justify their actions to members and influence the attitudes and beliefs of participants to gain negotiating advantages. Finally the institutional role of accounting indicates the extent to which accounting is used by managers as a rationalizing and legitimizing tool to support the decisions made by the organization and to maintain the organization's profile with external constituencies. This particular role draws heavily on new institutional sociology and the theory of loose coupling, according to which peer pressure and the need to maintain activities without damaging appearances influences the actions of an organization (DiMaggio and Powell, 1983; Carruthers, 1995).

### 3. Greek municipalities

Greek municipalities are characterized by heterogeneity in terms of population, geographical size and support from central government through state subsidies

(Cohen, 2008). During recent years they have started to become involved not only in the traditional local government functions such as the local registry, cleaning and recreation services, development and maintenance of local infrastructure but also in the provision of primary and secondary education services, transportation services, health services, etc. Municipalities rely considerably on state subsidies. They also generate revenues from tax and fees the majority of which they have been given a relative flexibility in levying by the state. Greek municipalities are subject to strict public sector administration and financial legislation.

Since 2000, municipalities with more than 5,000 citizens or revenues more than approximately 1.5 million euros were obliged to adopt a complex dual system where accrual and cash accounting would coexist albeit retaining their autonomy (Presidential Decree 315/99, 1999). More specifically, eligible municipalities were to continue to develop a cash budget and monitor its execution on a cash basis and at the same time register their transactions in a parallel system by applying the accrual accounting paradigm and issuing businesslike end-of-the-year statements (i.e. balance sheet and income statement). The declared goal of the central government when it decided to apply the new system was to reduce public expenditure, to increase the efficiency and effectiveness of public administration and also to assess the degree of efficient use of the resources allocated to local governments. Moreover, the new system would ensure the quality of submitted accounting data for decision making such as loan negotiations or subsidies granting (National Budget Report, 1997, pp. 71-72). However, the implementation of the new system involved a considerable delay which was the unavoidable outcome of several shortcomings that were eventually overcome (see Cohen *et al.*, 2007 for more details). The corresponding accrual accounting principles embedded in the accrual system are almost exclusively based on Greek Accounting Standards used for all private sector companies not listed in the Athens stock exchange (i.e. they abide by the Fourth EU directive). Thus, to the contrary of what has been evidenced in some continental European local governments (Pina *et al.*, 2009), Greek municipalities implement full accruals and not some kind of modified accrual system.

The Municipal and Communal Code that governs municipalities' and communities' operations (Law 3463, 2006) stipulated that the assessment of municipalities' financial performance would be based (from 2006 onwards) on both cash and accrual accounting information. However, the specific measures that would serve this aim not only they were not defined in the law but also the supervising authorities had not decided on them by the end of 2010. Thus, a formal accrual-based performance measurement system is not existent.

In terms of management structure, Greek municipalities are entirely governed by elected officials, which are either supported or affiliated with political parties. Management is performed by the Mayor and members of the majority party while decision making requires a majority of the votes in the municipal council. Municipal elections take place every four years. The number of seats in the municipal council is determined on the basis of the municipality population. As larger municipalities have more seats, the political power is scattered among numerous political parties that succeed in electing representatives to the municipal council and as a result the political climate is usually more competitive than in smaller municipalities.

#### 4. Research questions – development of hypotheses

The accounting change in the setting of Greek municipalities has resulted in a situation where the institutionalized cash accounting system embedded in the organizational

processes continues to operate almost in the same manner as it used to. In parallel, the accrual accounting system that has been introduced to provide a vast array of benefits was expected to succeed in its mission albeit the absence of any formal accrual performance measurement system being in place. Thus, the accounting change (i.e. the introduction of accrual accounting) in Greek municipalities lies within the formal change typology identified by Burns and Scapens (2000) and lacks the characteristics of an informal change. Therefore, a question arises as to whether the expected benefits from the new system can prevail while relevant informal changes have not been promoted. Blöndal (2003) notes the importance of introducing public sector accounting reforms along with other managerial reforms so as to improve decision making in government. Nor-Aziah and Scapens (2007) note that the impact of a public sector reform is both socially and institutionally constrained and can potentially vary significantly from one context to another. Therefore, it is possible that an accounting reform may not deliver the expected benefits.

In our setting, the success of the municipalities' management is solely assessed by the way the budget is executed while the accrual accounting system information is not embedded in the formal decision making routines. Moreover, the external stakeholders (e.g. supervising authorities, voters) are accustomed to use cash-based information to evaluate municipalities' efficiency. Nevertheless, as there is not a formal assessment system in place, subsidies granting is not based on accounting information. Hence, we test the hypothesis:

*H1.* The technical-rational role of cash accounting information is more significant in the municipal context than accrual accounting information.

Municipalities' management operates in a rather competitive environment. Their political opponents have to be convinced about the economic rational of their actions. The use of cash-based information that is easily understood can serve this aim. Elected officials generally lack specialized accounting skills that are needed to process accrual accounting information. Hence, we test the hypothesis:

*H2.* The socio-political role of cash accounting information is more significant in the municipal context than accrual accounting information.

The basic pillar of public sector financial management is the cash budget. Municipalities are a significant part of the public sector structure where budget preparation and execution should abide by all legislation requirements. On the other hand, the existence of the accrual accounting system albeit obligatory has no material effects on the way a municipality is assessed or financed. As a consequence, municipalities use their budgets to legitimate themselves toward the supervising authorities. Therefore, we test the hypothesis:

*H3.* The institutional role of cash accounting information is more significant in the municipal context than accrual accounting information.

## 5. Methodology

In order to assess the roles of the two accounting systems, we conducted a survey of Greek municipalities that have adopted accrual accounting. A questionnaire was addressed during the Spring of 2008 to the principals of the financial departments of

228 municipalities that had implemented the dual accounting system. The survey instrument that was administered, requested the respondents to express on a Likert scale the extent of their agreement (where 5 corresponded to totally agree) or disagreement (where 1 corresponded to totally disagree) on 38 statements that referred to the way that the elected management uses accounting information for decision making (the questionnaire is available upon request from the authors). The questions aimed at operationalizing Ansari and Euske's (1987) model into the financial reality of Greek municipalities through capturing their basic accounting informed financial actions and decisions. In most of the cases, the same questions (qualitatively) were asked to assess the importance of the cash and accrual accounting roles in order to avoid noise in our findings. This approach was not followed only when it was not applicable.

More specifically, as a means to control the technical-rational role of accounting, questions related to the use of accounting information for expenditure control, financial management, subsidies and loans granting as well as decision making were asked. The socio-political role of accounting was approached through questions that related to the way the accounting data are used by municipality management as a means to influence several types of stakeholders (e.g. taxpayers, supervising authorities, political opposition, etc). Finally, the institutional role of accounting was proxied by questions trying to capture whether the accounting systems were perceived mostly as imposed obligations loosely coupled with actual financial management and decision making.

The statements concerning the different accounting roles were scattered through the questionnaire. The recommendations stated by Fowler (2002) were used in the design of the survey instrument. The questionnaire was successfully pilot tested before dissemination with two municipality financial controllers. A total of 106 municipalities participated in the survey by returning completed questionnaires. Thus, the response rate of our research study was 46 percent.

The answers that we received were grouped together so as to create indices (variables) for the roles served by each one of the two accounting systems. Thus, a total of six variables (indices) were developed. To ensure that the results from the sample could be generalized to the population, we examined whether municipalities that completed the questionnaire and those that did not differ with respect to their size. We performed a non-respondents bias test on the basis of size (measured by the number of inhabitants) and found no statistically significant differences. Also we tested whether differences between early respondents and late respondents exist in the survey indices. Again, no statistically significant differences were evident.

## 6. Statistical results

### 6.1 Respondents' profile

The participants in our study are highly ranked municipal employees with an average of 6.4 years of experience in their current positions and 11.8 years of service in the municipality in which they are currently employed. They participate in both the end-of-the-year preparation of financial statements as well as the development of any reports of financial content asked for by the elected officials. Thus, they have both the skills and the experience in order to provide informative and accurate input to our queries regarding the use of the accounting information in the municipalities in which they work.

The municipalities that participated in the survey had issued accrual accounting financial statements since 2002 and had on average prepared and published financial statements 4.7 times (median = 5 times). Thus the sample includes municipalities familiarized with the new accounting system.

Descriptive statistics regarding the municipalities' population are presented in Table I. Cash and accrual accounting

### 6.2 Significance of accounting roles

The six research variables were constructed on the basis of 38 items. Each questionnaire question corresponded to an item. The validity of the survey instrument was assessed by applying a Cronbach's  $\alpha$  test on the items grouped for the construction of each variable. Table II summarizes the results. The Cronbach's  $\alpha$  test results confirm the validity of the survey instrument that was used in our research as all test values were above 0.6 (Bagozzi, 1994).

Table III presents the descriptive statistics regarding the roles each accounting system performs in the context of the municipalities of our sample.

The analysis of Table III indicates that the technical-rational role has the greatest importance in the cash accounting system (cash1, mean = 3.739), while the socio-political role (cash2, mean = 3.561) and the institutional role (cash3, mean = 2.853) follow in terms of significance. In the case of accrual accounting though, the socio-political role (acc2, mean = 3.531) is the primary function followed by the technical-rational (acc1, mean = 3.280) and the institutional role (acc3, mean = 2.981), respectively.

An analysis of whether the accounting roles are influenced by municipality size was performed. We split the sample into two sub-samples on the basis of the median population. Large municipalities (i.e. municipalities with population that equals or exceeds the sample median) rank the socio-political role of accounting, both cash and accrual, as more important than smaller municipalities (i.e. municipalities with population less than the sample median). This can be partly explained by the fact that political aspects in larger municipalities due to the pluralism of elected officials and the different political positions they represent are more intense and accounting can be used in order to influence attitudes and beliefs. From another point of view this finding is consistent with the views of Ball and Shivakumar (2005) who consider accounting information to be an economic good. In larger municipalities, where more transactions

**Table I.**  
Descriptive statistics for the sample municipalities' population on the basis of 2001 census

	<i>n</i>	Mean	Median	SD
Population in inhabitants	106	31,978	10,873	81,561

Variables	Number of items <sup>a</sup>	$\alpha$
<i>Cash accounting</i>		
Technical-rational (cash1)	7	0.6435
Socio-political (cash2)	7	0.7373
Institutional (cash3)	5	0.6331
<i>Accrual accounting</i>		
Technical-rational (Acc1)	7	0.7705
Socio-political (Acc2)	7	0.6923
Institutional (Acc3)	5	0.6107

**Table II.**  
Cronbach's  $\alpha$  results for the research constructs

**Notes:** <sup>a</sup>Every item corresponds to a question. The questionnaire containing all questions is available upon request by the authors

Variables	<i>n</i>	Minimum	Maximum	Mean	SD
<i>Cash accounting</i>					
Technical-rational (cash1)	106	1.286	4.714	3.739	0.605
Socio-political (cash2)	106	1.571	5.000	3.561 <sup>a</sup>	0.641
Institutional (cash3)	106	1.000	4.400	2.853	0.790
<i>Accrual accounting</i>					
Technical-rational (Acc1)	106	1.286	5.000	3.280	0.700
Socio-political (Acc2)	106	2.000	5.000	3.531 <sup>a</sup>	0.608
Institutional (Acc3)	106	1.400	4.600	2.981	0.701

**Notes:** <sup>a</sup>The difference in the mean values of variables Cash2 and Acc2 between larger (i.e. municipalities with population that equals or exceeds the sample median) and smaller municipalities (i.e. municipalities with population less than the sample median) is statistically significantly different from zero at 5 percent significance level. The variable values are calculated as the sum of the answers given on all statements included in the variable in the range 1-5 (where 1 is totally disagree and 5 is totally agree) divided by the number of statements per variable. The mean of each variable can range from the value of 1 (where 1 means that accounting information does not serve this particular function) to the value of 5 (where 5 means that accounting is heavily used for the particular function that is examined by the corresponding variable)

**Table III.**  
Descriptive statistics for  
the research constructs

with the involvement of more stakeholders take place, the decision environment becomes more complex resulting in a demand for excessive negotiations. Thus, as the demand for accounting information is greater the quality of information and its use are expected to be more expansive. No other statistical significant differences were found between accounting roles in larger and smaller municipalities. We also tested whether the municipalities' experience with accrual accounting influences the values of the indices. No statistically significant differences between more and less experienced municipalities, using the median experience as a threshold, were revealed in the values of all indices. The lack of statistically significant results in all other roles but the socio-political role of accounting may be due to the lack of extensive follow-up by the central government regarding the stage of implementation of the new accounting system. Even though the central government had threatened fines in the event that a municipality failed to adhere to the requirements of the PD 315/99, no such action has ever been taken. The lack of close monitoring and penalties imposition has actually left municipalities without any formal pressure to speed up the process of embedding accrual accounting regardless of their size.

Moreover, we performed a series of paired sample *t*-tests in order to verify that the differences exhibited between the various roles of accounting within any given accounting convention (accrual or cash) are valid. The test results of the total sample in Table IV indicate that each of the three accounting roles is distinct from the others at 1 percent significance level within either cash or accrual accounting. However, in large municipalities the technical-rational role and the socio-political role of cash accounting are not as clearly distinguishable as in smaller municipalities. This might be explained again through the complex political environment in which they operate. Large municipalities may not have unrestricted decision-making power as their ability to make certain decisions may well rely on convincing the wide range of their stakeholders that the way they intend to act is worthwhile.

Finally, even though the three roles of accounting can be distinguished from one another, the *t*-test results (last part of Table IV) indicate that only the



		Total sample ( $n = 106$ )		Large municipalities (pop $\geq$ median, $n = 53$ )		Small municipalities (pop $<$ median, $n = 53$ )	
		Mean difference	$t$	Mean difference	$t$	Mean difference	$t$
Tests for the roles of cash accounting							
Pair 1	Cash1-Cash2	0.178	2.713*	0.102	1.300	0.253	2.422**
Pair 2	Cash1-Cash 3	0.886	7.955*	0.966	6.910*	0.805	4.629*
Pair 3	Cash 2-Cash 3	0.708	7.070*	0.863	6.432*	0.552	3.763*
Tests for the roles of accrual accounting							
Pair 4	Acc1-Acc 2	-0.251	-4.724*	-0.307	-4.489*	-0.194	-2.396**
Pair 5	Acc 1-Acc 3	0.299	2.931*	0.362	2.492**	0.235	1.636
Pair 6	Acc 2-Acc 3	0.550	6.395*	0.670	5.246*	0.429	3.770*
Tests between the roles of cash and accrual accounting							
Pair 7	Cash1-Acc1	0.458	6.362*	0.444	5.134*	0.471	4.069*
Pair 8	Cash2-Acc2	0.030	0.393	0.035	0.381	0.024	0.201
Pair 9	Cash3-Acc3	-0.128	-1.620	-0.158	-1.438	-0.098	-0.856

**Notes:** Cash1, technical-rational role of cash accounting; Cash2, socio-political role of cash accounting; Cash3, institutional role of cash accounting; Acc1, technical-rational role of accrual accounting; Acc2, socio-political role of accrual accounting; Acc3, institutional role of accrual accounting. \*, \*\*, Statistically significant at 1, 5 and 10 percent, respectively

**Table IV.**  
 $t$ -tests for the roles of accounting

technical-rational role is statistically significantly different when considered under the two accounting conventions.

It appears that the elected management uses the accounting information for the natural functions (socio-political and institutional) in both cash and accrual accounting in a similar manner. Therefore, while our first hypothesis  $H1$  is supported by empirical evidence, the other two ( $H2$  and  $H3$ ) are not. Briefly, this could mean that while decision making related to deciding budgetary resource allocations heavily relies on accounting data that the constituents in a municipality are traditionally familiar with, i.e. cash and budgetary accounting, this is not the case when it comes down to convincing other stakeholders regarding the validity of the decisions taken; in the latter case accrual accounting and cash accounting figures could be used interchangeably when trying to convince other parties and legitimize the decision making outcome.

We performed Pearson and Spearman correlation analyses in order to determine the extent to which the different functions performed by the two accounting systems are related. The results are presented in Table V.

The correlation results indicate that the technical-rational role and the socio-political role of cash accounting exhibit a significant positive relation ( $r = 0.414$ ,  $p < 0.001$ ). This means that the use of accounting data for decision-making purposes is related to the tendency of the elected management to use this data in order to influence the attitudes of a given municipality's external and internal stakeholders. On the contrary, the technical-rational role and the institutional function of cash accounting exhibit a significant negative relationship ( $r = -0.339$ ,  $p < 0.001$ ). This may indicate that when cash information is used to maintain appearance with external parties, it is possible that management is less inclined to improve its performance and is more heavily focussed on external stakeholders' satisfaction. The two natural uses of cash accounting exhibit a non-significant small negative relationship. Thus, they seem not to be related, which in other words implies that the degree to which the elected management influences the perceptions of the municipality's stakeholders is not related

Variables	Cash 1	Cash 2	Cash 3	Acc 1	Acc 2	Acc3
Cash1	1	0.414***	-0.339***	0.362***	0.219**	-0.082
Cash2	0.440***	1	-0.027	0.182*	0.227**	0.266***
Cash3	-0.323***	-0.014	1	-0.427***	-0.217**	0.407***
Acc1	0.402***	0.202**	-0.437***	1	0.660***	-0.126
Acc2	0.240**	0.250***	-0.222**	0.662***	1	0.091
Acc3	-0.061	0.324***	0.389***	-0.156	0.083	1

**Notes:**  $n = 106$ . Cash1, technical-rational role of cash accounting; Cash2, socio-political role of cash accounting; Cash3, institutional role of cash accounting; Acc1, technical-rational role of accrual accounting; Acc2, socio-political role of accrual accounting; Acc3, institutional role of accrual accounting. The correlations above the diagonal correspond to Pearson correlations. The correlations below the diagonal correspond to Spearman correlations. \*, \*\*, \*\*\*Correlations significant at 0.10, 0.05 and 0.01 levels (two-tailed)

**Table V.**  
Correlations for the roles  
of accounting information

to the extent this information is directed toward the maintenance of appearances. In the case of accrual accounting, the technical-rational role and the socio-political function exhibit a significantly positive relationship ( $r = 0.660, p < 0.001$ ). This probably means that influencing other parties' perceptions by using accrual information can be achieved only by simultaneously attaining familiarization with the accrual concept. The institutional role is not significantly statistically related with the other two accrual accounting role dimensions. This is consistent with the fact that there is not a formal accrual-based performance measurement system in place towards which municipalities could show that they abide by. For example, local governments are not obliged to report cost information for services offered which could be used for comparative assessments and benchmarking. Moreover, even though legislation provides for significant financial penalties in case of non-compliance with accrual accounting requirements, such penalties, as discussed before, have never been imposed in practice.

As for the relationships between the roles performed by the two accounting systems, some interesting observations can be reported. The technical-rational role of cash accounting and the technical-rational role of accrual accounting appear to be significantly positively correlated ( $r = 0.362, p < 0.001$ ). Therefore it would seem that if management strives to achieve higher performance it will probably attempt to utilize all accounting information available, both accrual and cash, so as to achieve better results. The institutional role of cash accounting and the technical-rational role of accrual accounting are significantly negatively correlated ( $r = -0.427, p < 0.001$ ). In this case it appears that the more cash accounting helps the organization to maintain its external appearance the higher is the underutilization of accrual accounting for decision-making and policy issues. In other words, this may signify that the more a local government uses cash information to legitimate itself, the less it is going to become familiarized with the new concepts for both decision making and decision rationalization. Finally, the institutional role of cash accounting is positively correlated with the same role under accrual accounting ( $r = 0.407, p < 0.001$ ). This may indicate that when accounting information is used for legitimating purposes both accounting conventions could be employed toward this aim. Again we split the sample into two on the basis of the median population and analyzed the existing correlations among cash and accrual accounting variables. The above-mentioned relations were also evident in the sub-samples. Thus, they seem to prevail irrespectively of municipality size.

## 7. Discussion and conclusions

In the current research study we reviewed the different roles of cash and accrual accounting performed in the context of Greek municipalities through the prism of Ansari and Euske's (1987) model. The existence of a dual accounting system and its effects provide an interesting situation for the public sector accounting literature, since it is possible to determine whether accrual accounting can challenge the primacy of cash accounting in an institutional setting where no changes to the performance assessment and measurement criteria have accompanied the accounting reform. Our results describe an interesting situation: cash accounting information is still more significant in the organizational context of Greek municipalities; nonetheless, it seems that accrual accounting does indeed perform a role even though it is a less significant one.

According to our empirical evidence the technical-rational role of cash accounting appears to be the most significant in Greek municipalities, followed by the socio-political role. Such a result is not surprising. Cash accounting has not only been embedded in the organizational processes for a long time but it also constitutes a convenient means to influence the perceptions of third parties as cash figures are straightforward to constituents who lack accounting expertise. More specifically, according to DiMaggio and Powell (1983) "the greater the extent to which the organizations in a field transact with the agencies of the state, the greater the extent of isomorphism in the field as a whole." Taking into consideration the extended period of time the municipal governments have worked together with the central government (which still uses cash accounting) it is evident that cash accounting will be used as the primary accounting language.

As for accrual accounting, its socio-political role appears to be its dominant function in the municipal context, followed by the technical-rational and the institutional roles. Such a result indicates that the elected management uses accrual accounting figures as an ammunition machine presumably to gain negotiating advantages, but it does not utilize, at least to the same extent, accrual information for decision-making purposes. This is consistent with Hoque and Hopper (1994) who state that a system of accounting control that is relatively foreign to an organization's cultural core will not play a major role. Furthermore, its institutional role seems to be neutral probably due to the central government's unwillingness to follow-up the reform results. Moreover, larger municipalities rank the socio-political role of accounting as more important than smaller municipalities both under cash and accrual paradigms, probably because under intense political confrontations and complex negotiating procedures accounting information can be used in order to rationalize management's actions both to its political opponents and other multiple stakeholders. Unlike smaller municipalities, large local governments undertake a vast array of activities, which require the bridging of many conflicting interests. Such a problem is not normally encountered in smaller municipalities where due to the smaller number or inhabitants, the existence of less conflicting parties and the scarcity of resources, the allocation decisions are rather straightforward.

Our empirical evidence reveals that the roles of accounting exhibit statistically significant relationships both within each accounting paradigm and between the two accounting systems. Our findings are therefore aligned with the conclusions of Pina *et al.* (2009). Accrual accounting in European continental countries, such as Greece, is not only a means for improving managerial decision-making processes but also a medium to enhance financial transparency, accountability and to symbolize legitimacy.

Thus, it is probably due to the lack of accrual accounting institutionalization in the municipalities that accrual accounting is not dominant in the decision-making process. However, the experience gained as well as the familiarization with accrual accounting may change its perceived usefulness as it has been suggested (Jones and Puglisi, 1997) and witnessed (Kober *et al.*, 2010) in other public sector contexts. In the same vein, a new stream of empirical research is attempting to assess whether accrual accounting information has practically incremental value over modified accrual accounting (Plummer *et al.*, 2007) or cash numbers (Pinnuck and Potter, 2009; Kober *et al.*, 2010) for decision making by external stakeholders.

Our research findings are subject to a number of limitations. The first limitation is the way we have operationalized the roles of accounting through the selection of the specific questions in our research instrument. This is nevertheless an inherent shortcoming in all survey-based studies. We believe that we have properly captured through the questions asked the relevant dimensions at least in the context of Greek municipalities. The second limitation is that our analysis covers a sample and not the entire population of Greek municipalities.

As an epilogue we could argue that the analysis we conducted revealed the primacy and in some cases the equal importance of cash accounting in a setting where the richer informational framework of accrual accounting was introduced, without though seriously attempting to embed it in the organizational processes. In this respect, it appears that cash accounting still dominates in the major functions of decision making, while accrual accounting follows. Under these circumstances, it is evident that the expected benefits of accrual accounting cannot be reaped. Serious actions must be attained in order to achieve informal as well as formal changes that will ultimately lead to a situation where the benefits of accrual accounting, which are well cited in the literature, can be derived. However, this situation is rather expected to change in the near future with significant implications for accounting and accountants. The Greek Government has recently announced, as a response to the severe financial problems that it has been facing since 2010, the exercise of strict measures on local governments that do not comply with accounting legislative requirements and do not provide both accrual and cash accounting information on time (Ministry of Interior, 2010). Moreover, from January 1, 2011 the number of municipalities has significantly decreased through a program of local government amalgamations. All the new, larger, municipalities will be obliged, without exceptions, to apply accrual accounting and issue accrual accounting financial statements. Therefore, a need for skilled, experienced accountants, familiar with the businesslike accounting systems will become more intense. The close financial monitoring from the EU and the IMF as well as the urgent need for achieving effectiveness, efficiency and economy goals while improving accountability and transparency in public financials are expected to upgrade the role of accrual accounting in municipalities. This means that accrual accounting is expected to be more intensively pertaining the roles of accounting that are now rather dominated by cash accounting. Therefore, a prospect of future research could involve the replication of this study to reveal whether the change in the political and financial environment has led to changes in the way accrual accounting is institutionalized in local governments. Municipalities are in the spearhead of the government's agenda in terms of necessary improvements in public sector financial and cost management. As a matter of fact, the reorientation of political priorities and governmental policies together with the changes in the organizational structure and size of municipalities, could affect organizational culture, decision-making processes and

operations which in turn could have an impact on the uses of accounting information and subsequently on the roles of the two accounting paradigms in Greek local governments. Cash and accrual accounting

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**Further reading**

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