

From financial accounting to management accounting in Italian public universities: results of an empirical study

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This study focuses on the main effects of the adoption of full accrual accounting and management control systems in Italian public universities, which was introduced in 2014 with decree n.18/2012. The research question was to determine whether implementation of accrual accounting and management control systems has led to meaningful changes as opposed to only formal changes in Italian public universities. Specifically, we explored the use or non use by decision-makers of financial and economic information deriving from accrual accounting and from other management control tools (budget, analytical bookkeeping and financial reporting). This empirical research is based on the case study method applied to four Italian public universities that were monitored from 2014 to 2017 through questionnaires and interviews. The results show that the implementation of budgets, accrual and analytical bookkeeping, and the new financial statements have not resulted in significant improvements in the four universities evaluated. It appears that, currently, Italian public universities do not use all the information deriving from management accounting that could improve their performance. Therefore, implementation of financial accounting and management control systems can lead to a substantial change only in a setting of a results-oriented managerial culture. Finally, management accounting tools can contribute also to the monitoring of university activities.

Field of research: Accounting

1. Introduction

The adoption of accrual accounting and management control systems in the public sector is consistent with the New Public Management (NPM) paradigm that encourages the application of private sector managerial and accounting techniques in the public sector (Guthrie *et al.*, 1999; Lapsley, 2009). In Italy, accrual accounting has been gradually introduced in public entities starting from the early 90s through several reforms that have progressively affected the various organizations (D'Alessio, 2012).

The accounting system of Italian public universities has been substantially revised consequent to a recent reform that introduced full accrual accounting, and new budgeting and financial reporting systems (legislative decree 18/2012). This reform has brought about a radical change in accounting procedures in Italian public universities, which were traditionally based on a cash basis accounting model. Moreover, the new accounting system is particularly relevant in the Italian higher education system because public funding has been reduced and is increasingly being based on the performance evaluation

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of teaching, research and the third mission (technology transfer, spin-offs, start-ups, etc.) (Cantele *et al.*, 2012). In fact, accrual accounting enables universities to plan and control their activities (Paolini and Soverchia, 2015; Salvatore, 2013), and to measure and report performance results (Broadbent, 2007; Ter Bogt and Scapens, 2012) in order to manage university activities more effectively and efficiently. Therefore, accrual accounting is essential for the implementation and development of management control systems in universities (Agyemang and Broadbent, 2015; Paolini and Soverchia, 2013). However, only if accrual accounting information is used by decision-makers and by policy-makers can they lead to meaningful changes in the management of university activities as opposed to merely formal changes (Mussari and Sostero, 2014). Finally, there is a need to make a substantial cultural change that involves all the actors in universities (Salvatore and Del Gesso, 2017), who should become familiar with management control systems. In this scenario, the aim of this empirical study was to determine whether the implementation of accrual accounting and management control systems has led to meaningful changes as opposed to only formal changes in Italian public universities.

Specifically, we explored the use or non use by decision-makers of financial and economic information deriving from accrual accounting and from other management control tools (budget, analytical bookkeeping and financial reporting). Therefore, the research focuses on the main effects of the adoption of accrual accounting in public universities and on the managerial implications arising from its use. Accrual and analytical accounting provide economic information for cognitive purposes (Anessi Pessina and Steccolini, 2007; Lapsley and Miller, 2004). In fact, accrual accounting improves the allocation of resources and supports internal decision-making processes. Indeed, it highlights costs and revenues, assets and liabilities, and helps to define goals in terms of outputs and outcomes, and efficiency and effectiveness (Van Dooren *et al.*, 2015).

This paper is organised in five sections. The next section reviews the data available on adoption of accrual accounting in the public sector and in public universities. Section three describes the research methodology. The fourth section describes the theoretical framework of the Italian public universities reform. The fifth session reports the results of the survey. The sixth section is devoted to the Discussion and some conclusive considerations.

2. Review of Data Related to Accounting Innovations in the Public Sector and in Universities

The transformation of public sector accounting began in the late 1980s in New Zealand and Australia (Carlin, 2005). During the last three decades, accounting innovations have been implemented in public sector settings with the aim of increasing effectiveness, transparency and accountability (Jackson and Lapsley, 2003). In fact, accrual accounting models are increasingly being implemented in public sector bodies to improve the allocation of resources, and the efficiency and performance of activities. The studies devoted to NPM reforms (Pollitt and Bouckaert, 2011) focus on the adoption of accrual accounting, in addition to or in place of traditional cash-based accounting and budgeting, and on the related implications for public management (Christensen, 2002; Guthrie, 1998; Lapsley, 1999). Most studies agree that accrual accounting has well-known cognitive purposes, namely, to use decision-making processes in order to improve activity

performance (Lapsley and Miller, 2004; Likierman, 2000). Therefore, the implementation of accrual accounting in public sector entities now appears self-evident and is a logical step towards achieving efficiency, despite its problematic nature (Lapsley *et al.*, 2009). Nevertheless, the implementation of accrual accounting techniques is often difficult (Anessi Pessina, 2005; Carlin and Guthrie, 2003). Furthermore, the accrual information is not consistently used effectively (Connolly and Hyndman, 2006) and does not result in significant changes to governance mainly because the capacity to use this information is limited (Ezzamel *et al.*, 2014).

Public universities are gradually introducing accrual accounting tools in the UK, Spain, Greece, Italy, Norway, The Netherlands, Russia, Hungary, Malaysia and Jordan (Agasisti *et al.*, 2015; Christiaens and De Wielemaker, 2003; Fattah al Weshah *et al.*, 2012; Garcia Valderrama and del Rio Sanchez, 2006; Mitchell, 1996; Ormos and Veress, 2011; Pettersen and Solstad, 2007; Suhaiza and Nur Barizah, 2011; Timoshenko and Adhikari, 2009; Venieris and Cohen, 2004). Moreover, universities are increasingly focusing on performance management systems and on developing quantitative measurements for research and teaching activities (Aversano *et al.*, 2017; Taylor and Baines, 2012; Ter Bogt and Scapens, 2012). Notably, studies conducted in Norway, Flemish universities and Greece report that the application of accrual accounting tends to be more formal than substantial (Christiaens and De Wielemaker, 2003; Pettersen and Solstad, 2007; Venieris and Cohen, 2004). Differently, the accrual and management accounting systems improved performance and increased accountability in Anglo-Saxon countries notwithstanding initial technical difficulties (Gray and Haslam, 1990; Mitchell, 1996). However, as noted by Biondi *et al.* (2015), there is a paucity of empirical studies devoted to the effects of accounting changes in public universities.

3. Research Methodology

To address the research question (whether implementation of accrual accounting and management control systems has led to meaningful changes as opposed to only formal changes in Italian public universities), we investigated the use or non use by decision-makers of information deriving from accrual accounting and from other management control tools (budget, analytical bookkeeping and financial reporting). This empirical research is based on the case study method applied to four Italian public universities that were monitored from 2014 to 2017 through questionnaires and interviews, namely, the University of Florence, the University of Campania, the University of Urbino "Carlo Bo" and the University of Molise. These universities were selected among the few universities to implement accrual accounting in 2014. This study updates to 2017 the results of a previous study of the same universities in 2014-2016 (Salvatore and Del Gesso, 2017). The research methodology is based on the results of a questionnaire that was sent to the four universities in March 2015, November 2016 and January 2018 to evaluate the evolution, over a four-year period, of the implementation and use of accrual accounting and management control systems in these universities.

4. Italian Public Universities Accounting Innovations: An Overview of the Reform

The reform (law n.240/2012 and subsequent decree n.18/2012) has radically changed the accounting and management systems of Italian public universities over the past four years. This legislation introduced accrual accounting, budgeting, financial reporting and management control systems that became mandatory on 1st January 2014 a deadline that was extended to 1st January 2015. In fact, not all Italian universities were ready to adopt the new accounting system in 2014; indeed, the adoption process was slow and gradual. However, it appears that all universities in Italy are now using the new system.

Legislative Decree n.18/2012 required Italian public universities to adopt the following accrual tools (Table 1):

- A “single” and “authorizing” budget (annual and triennial), constituted by two budget documents, with which to program costs and incomes of the core activities of universities (the economic budget) and investments and sources of funds (the investments budget).
- Full accrual accounting in order to report management events during the year through accrual and analytical bookkeeping.
- “Single” financial statements, constituted by the balance sheet, the income statement, the cash flow statement and the supplementary note, and accompanied by a management report, with which to provide information about the results obtained (in terms of cost and revenue, assets and liabilities) and to foster accountability (Allini *et al.*, 2017).

In addition, the decree required universities to prepare a consolidated financial statement that includes all controlled institutions and companies and that consist of the balance sheet, the income statement and the supplementary note.

Accrual accounting has become the primary accounting system in Italian public universities, while cash accounting has become marginal (Mussari *et al.*, 2015). In fact, the reform also required universities to prepare two financial accounting documents (a “non-authorizing” budget and a statement) to harmonize public accounting.

Table 1: Accounting innovations in Italian public universities

Phases of accounting cycle	<i>Cash basis accounting tools</i> (Before Legislative decree 18/2012)	<i>Accrual basis accounting tools</i> (After Legislative decree 118/2011)
Budgeting	Financial budget	Economic budget and Investments budget
Accounting	Financial and cash bookkeeping	Accrual bookkeeping and Analytical bookkeeping
Reporting	End-Year financial report	Balance sheet, Income statement, Cash flow statement and Supplementary note

In summary, the reform involves the implementation of management accounting in Italian public universities. In fact, accrual-based accounting tools (budget, accrual and analytical bookkeeping, balance sheet and income statement) provide financial and economic information that support the control and performance evaluation (Paolini and Soverchia, 2017) of activities. Instead, the traditional information tools of cash-based accounting do not consider the economic aspects of operations. Therefore, the new tools of the accounting information system represent a revolution both for internal decision-making processes and for external communication to the stakeholders (Gigli and Tieghi, 2017) of universities.

5. Survey Results

The first survey of the use of information deriving from accrual accounting and management control systems in the four universities evaluated referred to the years 2014-2016. The questionnaires used to collect information were structured to investigate the effects of changes in accounting and control systems of the four universities. In particular, the survey was designed to analyse: the perception of the usefulness of accrual accounting in improving management processes; the improvements identified in management processes; the advantages obtained in relation to research, teaching and the third mission; the benefits for management deriving from the implementation of analytical bookkeeping and budgets; the perception of the budget as a programming tool of business management; and its comparison with the income statement and the balance sheet.

As shown in Table 2, the first survey revealed that the four universities evaluated have not yet experienced significant improvements in management processes and activities. However, they perceived that accrual accounting improved the allocation and use of resources, the measurement and control of institutional activities, and the implementation of analytical bookkeeping and management control. In fact, there was a tendency not to use the information deriving from accrual accounting and management control systems, probably because universities were still at an early stage of the accounting innovations; consequently, a financial culture prevailed. It appeared that budget did not yet represent a programming tool of business management and that universities still adhere to formal procedures and controls.

Table 2: The effects of changes in the accounting and control systems of Italian public universities: Results for the years 2014-2016

	University of Florence	University of Campania	University of Urbino	University of Molise
Perception of the usefulness of accrual accounting for improving management processes	Accrual accounting enable a better allocation of resources	Accrual accounting enable greater monitoring of management processes	Accrual accounting enable better cost recognition, consistency of assets and a better allocation of resources	Accrual accounting enable governance, management control and measurement of activities
Improvements experienced in management processes	Not yet experienced, but improvements are expected	Implementation of budgeting processes, greater attention to capital dynamics and greater use of available resources	Better planning of management processes following the first implementation of budget	Greater clarity and transparency of financial reports that highlight the results of operations and the consistency of assets
Advantages experienced in relation to activities	No advantage	No advantage	Better knowledge of the resources used in research	No advantage
Information benefits deriving from accrual and analytical bookkeeping	Better knowledge of operating costs (including provisions and amortization) and costs of individual structures and activities	Greater knowledge of capital trends and of revenues and costs of competence	Knowledge of the costs of any effective use of resources used in research	Better knowledge of operating costs (including provisions and amortization)
Benefits for management deriving from implementation of the budget	Better determination of the cost of main activities, of Departments, Schools and of courses of study	Not yet experienced, but it is expected that there will be benefits in terms of better resource management	Precise provisional data; primary basis for a better evaluation of economic planning	Recognition of costs for the institutional activity
Perception of the budget as a programming tool of business management	The budget is perceived as a programming tool, but it is not yet used as a programming tool of business management	The budget is not perceived as a programming tool and it is used only to authorize expenditures	The budget is perceived as a programming tool, but it is not yet used as a programming tool of business management	The budget is not perceived as a programming tool and it is used only to authorize expenditures
Comparison of the budget with the income statement and the balance sheet, in terms of comparison between goals and results	yes	Yes	yes	Not yet: financial reports will be prepared starting from 2016

To update the effects of changes in the accounting and control systems of Italian public universities, we conducted a survey of the year 2017 with a questionnaire that was sent in early January 2018. In this case, the four universities were asked whether they had experienced in 2017 new improvements in management control and advantages in relation to the activities of research, teaching and the third mission during 2017.

As shown in Table 3, the results of this survey, which were obtained also through interviews with the heads of accounting and budgeting units, show that the four universities did not experience in 2017 new (or first) significant improvements in the management processes and activities. The most important change consequent to the transformation of accounting instruments is linked to the implementation of the budget and of analytical bookkeeping associated with accrual bookkeeping. Specifically, the implementation of a budget is improving the programming process (in the University of Urbino), the implementation of analytical bookkeeping is under development (in the Universities of Molise and Campania), while economic information in terms of analysis and reporting on costs has become available (in the University of Florence). Nevertheless, it appears that the budget continues not to be a programming tool of business management, and that universities do not use the new costs information for managerial purposes. Moreover, also management accounting systems have not yet been developed in the universities evaluated.

Table 3: The effects of changes in the accounting and control systems of Italian public universities: an update of the results for the year 2017

	University of Florence	University of Campania	University of Urbino	University of Molise
Improvements experienced in management processes	Further implementation of analytical bookkeeping associated with accrual bookkeeping (cost reporting; cost analysis for functions, Departments, Schools and each study course , but management control system not yet developed	Better implementation of analytical bookkeeping	Better planning of management processes following the implementation of the budget, but a management control system has not yet been developed	Accurate monitoring of the costs of competence and structuring of cost centres to allow the future implementation of analytical bookkeeping. Management control system has not yet been developed
Advantages experienced in relation to activities	Revision of the model of distribution of resources to departments that consequently have greater autonomy in pursuing departmental policies and core activities	No advantages experienced	No new advantages experienced	No advantages experienced

In summary, similar to the results of the previous survey, the update on the effects of the adoption of full accrual accounting and management control systems confirms that a managerial culture is still lacking in the four universities evaluated, although all the managers interviewed concur in recognising that accrual accounting tools are useful for decision-making processes.

6. Discussion and Conclusions

The aim of this study was to determine whether or not the implementation of accrual accounting and management control systems has led to meaningful changes as opposed to only formal changes in Italian public universities. To this aim, we explored the use or non use by decision-makers of financial and economic information deriving from accrual accounting and from other management control tools in Italian public universities. The research was based on the survey results of questionnaires and interviews conducted in four Italian public universities that were monitored from 2014 to 2017.

Our study shows that the introduction of budgets, accrual and analytical bookkeeping, and the new financial statements have not resulted in significant improvements in the four universities evaluated. It appears that Italian public universities do not at present use all the information deriving from management accounting systems that could improve their performance. It also shows that many of the professional figures involved in decision-making processes find it difficult to understand the principle underlying the accrual accounting system, namely, the accrual principle, which considers the relation between costs and revenues in the same accounting period. Moreover, decision-makers do not yet seem to have a clear understanding of the real significance of the implementation of management accounting tools. It is feasible that human resources in universities are still used to a bureaucratic and authorizing accounting approach. In addition, as emerged from the interviews with the heads of accounting and budgeting units, the universities evaluated recognise that the information deriving from accrual accounting tools improved their performance, but the effective use of this information is strictly connected to the political power of the decision-makers in public universities (Baldrige, 1971). In fact, the political dynamics that underlie decision-making processes influence the performance management mechanisms of universities. These mechanisms improve the quality, the economic results and the outcome of research, teaching and the third mission.

Finally, the introduction of accrual accounting and other management control tools has produced a key change in universities in terms of information availability for decision-makers (Salvatore, 2012), but these tools have not led to substantial changes in the management processes of the four universities evaluated in this study. Therefore, implementation of financial accounting and of management control systems can lead to a substantial change only in a setting of a results-oriented managerial culture. Management accounting tools can contribute also to the monitoring of university activities. This contribution is very important because the evaluation process has become mandatory in Italian universities and it is considered strategic to enable universities to obtain better results and to improve their performance in order to compete with other universities worldwide.

This study has the limitation that the number of universities investigated in the analysis is relatively small. However, it is feasible that the conclusions reached cannot be extended to the entire Italian university system.

In conclusion, given the increased management information deriving from management accounting tools that will help universities achieve their strategic goals, a results-oriented managerial change will probably take place in the near future. However, all the professional figures involved in decision-making processes, and administrative and teaching staff should make a joint effort to make results-oriented decisions in order to improve their performance. It is noteworthy that in the first years of implementation of financial and management accounting instruments, Italian public universities had to prepare new financial statements and budget documents and consequently did not have sufficient time to make meaningful changes. For instance, in 2017, they were involved in the publication of the new financial and management accounting manuals. Thus, the change towards management accounting in Italian public universities is still in progress and is a “slow moving process” (Venieris and Cohen 2004). The adoption of a managerial culture requires time and acquisition of awareness by users, as well as a renovation of public universities identity.

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