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Lost in the transition from cash to accrual accounting: assessing the knowledge gaps in Italian public universities

Sabrina Gigli[1], Laura Mariani

Abstract

Purpose: The purpose of this paper is to examine the accounting change from cash to accrual accounting, so as to identify and assess the knowledge gap that can affect this transition.

Design/methodology/approach: The study employs a mixed method design, combining action research activities, a survey and in-depth qualitative interviews in the setting of Italian public universities

Findings: The findings highlight a low degree of compliance with accrual accounting system and budgeting system, in particular, that is the result of substantial lack of accrual accounting culture in Italian public sector

Originality/value: The analysis confirms some barriers to the transition highlighted by previous literature and it also adds further explanation of such limitations in terms of lack of skills and accounting knowledge of the universities' administrative staff.

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Key Words: Public Sector, Public University, Accrual Accounting, Budgeting process

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1. Introduction

Changes in accounting regimes have already been discussed in many contributions that aim to highlight the information limits of cash accounting systems, comparing the opportunities offered by an accrual accounting system (Parker and Guthrie, 1990; Perrin, 1998; Chan, 2003; Anessi Pessina and Steccolini, 2007). In a small number of studies, the context of analysis was that of public universities (Gray and Haslam, 1990; Christiaens and De Wielemaker, 2003; Agasisti and Catalano, 2013; Agasisti et al., 2008; Agasisti et al 2015; Upping and Oliver, 2012). The assumption of this literature is that cash accounting systems are insufficient to guarantee the appropriate control of public organisations' performance. Such control can be properly replaced or supported by other tools—primarily an accrual accounting system—inspired by the accounting system of business corporations. The transition from cash accounting to accrual accounting is a consequence of the attention that New Public Management (NPM) reforms give to the principles of management responsibility and continuous improvement in public administration (Hood, 1995). The introduction of these principles implied the identification of accrual-based accounting tools, able to support the fulfilment of financial balance, efficiency in service provision, higher transparency, and publicly accountable institutions. Aimed to make individual administrations responsible and accountable for the use of public resources, these innovations play a fundamental role in the process of quantification, control and communication of performance. They modify the methods whereby public administrations fulfil their accountability duties (Hood, 1995), while still maintaining the overall balance between cash inflows and outflows. In this context, the accrual system is meant to maintain the structure of ex-ante constraints and authorisations but also to support processes of decision-making and control, and incorporate new dimensions originally focused on ex-post accounting issues (Christiaens and Wielemaker, 2003).

After the fervent introduction of accounting accrual-based innovation in the public sector, however, a significant debate ensued over its effectiveness. Different factions have highlighted how the introduction of the accrual-based systems and correlated measurement of assets has not only not achieved the desired effects but indeed has brought with it some serious difficulties in implementation (Guthrie, 1998; Newberry 2002; Carlin and Guthrie, 2005; Hodges and Mellett, 2003). At times, such difficulties have weakened management systems in the public sector (Gray and Jenkins, 1993; Burritt and Welch, 1997; Behn, 1998; Olson et al., 2001). The reference literature, therefore, warns of the risks deriving from the potentially critical transposition of accounting tools developed in the business world to the public sector, mainly because of the structural diversities of the contexts (Christiaens, 1999; Carnegie and West, 2005; Guthrie 1998). Changes in Italian public accounting systems, in particular, have frequently suffered because of these risks (Jones and Mussari, 2004; Anessi Pessina and Steccolini, 2007), confirming the existence of different potential barriers to the effective implementation of accounting innovations in the public sector. In particular, empirical evidence shows the existence of several obstacles to the effective transition that are related, on one hand, to organisational barriers and, on other hand, to technical aspects of both the accounting standards and the regulatory framework (Cohen et al 2007).

We aim to contribute to this debate by exploring, through a qualitative research, the characteristics of the skills and knowledge gaps of the administrative staff engaged in the accounting transition. Furthermore, with reference to the relationship among different types of barriers, we explore how institutional obstacles affect the emergence of organisational barriers. Finally, we highlight the implications of these obstacles for the effective implementation of an accrual based accounting system.

The recent reform of Italian universities provides an interesting field for the observation this topic. In 2010, the Italian Parliament approved the introduction of accrual accounting in public universities. The reform was completed five years later, and in this period—from 2014 to 2015 in particular—public universities were obliged to prepare accrual-based budgets, without specific directives and common rules concerning their content. Therefore, for one year, each university had to decide how to construct the budgetary system on their own, and this event became an interesting opportunity for us to assess their ability to pass from cash to accrual accounting.

We organised the paper as follows: after the presentation of the most relevant literature on the barriers to the accounting change highlighted by both neo-institutional and resource-based view theories, we provide the assessment of the transition from cash to accrual accounting in the budgeting system with a sample of Italian public universities. Our findings stress some gaps of accounting knowledge, often caused by institutional conditions, that must be filled in order to allow an effective implementation of the reform.

2. Theoretical background

The barriers to the effective accounting change

According to Christensen (2002), different drivers and barriers can affect the effective introduction of accounting innovation in the public sector. Answering to external stimuli for change, in fact, public organisations react to the actions of promoters of change—such as consultants, academics, or organisations representing professional interests—to fulfil the expectations of the main users of the information, who are the politicians responsible for individual portfolios. In this process, some obstacles may affect the effective transition. These implementation barriers are characteristics of the political or bureaucratic environments that act to increase the cost or time required to implement accounting changes (Christensen, 2002; Luder, 1992). Kasurinen (2002) classifies the barriers to accounting change into three categories: “confuser” factors, “frustrater” factors, and “delayer” factors. Confusers are those factors that create uncertainty about the project’s future role in the organisation and give rise to different views of the change. Frustrators refer to factors that suppress the change process. For example, Kasurinen (2002) noted that the presence of an engineering culture within an organisation meant that number-based measures were preferred to qualitative measures in the development of multidimensional performance measurement frameworks, thereby reducing their overall informative power. Finally, delayers are factors that slow down the change process, as in the case of information systems that are inadequate to support the change.

The sources of these factors can be related to both the institutional and the organisational context (Cohen et al 2007). By combining a neo-institutional approach (NI) with a Resource-Based View perspective (RBV), we describe, in the following sub-sections, this twofold obstacle to the accounting change.

Institutional context and accounting change

The assessment of the institutional context conducted by NI theorists is useful to describe the first source of barriers. According to the NI framework, whenever external pressures are perceived as non-functional to local operations, organisations tend to reject them by implementing a merely formal change, thereby enacting a decoupling behaviour (Weaver *et al.,* 1999; Mayer and Rowan, 1977; Oliver, 1991). Within the accounting literature on organisational decoupling, scholars rely upon institutional theories to explore the interconnections among public sector dynamics of change, particularly between accounting reforms and the contexts where such dynamics take shape (Carpenter and Feroz, 2001; Hyndman and Connolly, 2011). The literature identifies several factors that may cause an ineffective transition. The first source is related to the types of actors who impose external pressure. In particular, the risk of merely formal compliance is likely to be higher with public regulators rather than industry experts because the latter create rules that are more consistent with the characteristics of the organisations that belong to that specific sector (Mayer and Rowan, 1977). The second source of ineffective transition may be a technical gap between the content of the regulation, on the one hand, and the organisation's operations, on the other. When the regulation does not consent to improve efficiency or effectiveness, the risk of organisational decoupling increases (Mayer and Rowan, 1977). In the field of the transition from cash to accrual accounting in public sector, this issue is particularly significant and it can be observed in the cases of acritical transposition of accounting tools, developed in the business world (Christiaens, 1999; Guthrie 1998). This implies, for instance, difficulties related to the recognition of public sector assets, the calculation of depreciation, the treatment of balance-sheet provisions and capital asset valuation (Christiaens, 2001; Hepworth, 2003, Perrin, 1998). Another source is related to goals' ambiguity. When the regulatory scope is wide, or pressures are ambiguous, in fact, organisations interpret them in a way that enables them to maintain the status quo as much as possible (Edelman, 1992). Finally, an ineffective transition occurs when the adoption of the innovation is perceived as expensive with regard to time-consuming implementation, higher expenses and a required increase in coordination activities (Pongpirul *et al.,* 2006).

Organisational context and accounting change

Developed in the context of strategic competition, the RBV identifies in the organisational resources and capabilities the primary sources of competitive advantage (Barney, 1991; Grant, 1991). Resources include all assets, capabilities, process, attributes, information, and knowledge controlled by an organisation that enable it to recognise and implement initiatives that allow the improvement of its efficiency and effectiveness (Barney 1991). This approach examines the role of intangible assets and organisational capability development as preconditions to gain positive organisational outcomes (Barney, 1991; Pablo et al., 2007). According to the RBV applied to the context of accounting innovation in public sector (Ridder et al 2005, Ridder et al 2006), the implementation of accrual accounting has not only to be considered as a technical shift, but also as a process of reorganisation that requires specific organisational resources, as well as dynamic capabilities in order to implement the change effectively (Ridder et al. 2005). In particular, the application of accrual accounting is dependent on strategic orientations and it requires the involvement of the managers, as well as the staff capability to develop new structural routines in managing change (Ridder et al 2006).

Under this perspective, the lack of capabilities, knowledge and skills of the administrative staff in charge for the change is a critical cause of barrier to the effective transition, which cannot be avoided in the short term (Luder 1992). This sort of risk exists when the accounting techniques change and when the accountancy staff lacks the knowledge needed for their implementation (Luder, 1992). The shift from cash to accrual accounting, in fact, generates the need to train staff and management to operate the new approach increasing the need to improve accounting expertise and support (Pendlebury and Karbhari, 1998). With reference to the internal resources needed to support an effective transition, the lack of adequate resources for training, the lack of both staff and appropriate software to implement accrual accounting or to use the information provided in a timely and useful way, and the insufficient professional accounting support are examples of obstacles towards public accounting system modernisation (Cohen et al 2007).

3. Empirical setting

The empirical setting of this research is given by a selection of Italian public universities that, by the effect of reform in the accounting and accountability system, are required to substitute cash accounting with accrual accounting. Among the innovation introduced by this reform, we focus, in particular, on the shift of the budgetary system. Firstly, introduced by national Law no. 240/2010. Further regulations were subsequently introduced to complete the initial framework. Legislative Decree no. 18/2012 introduced the mandatory drafting of the annual budget for authorisation purposes, consisting of a budget of profit and loss and an investment budget, related to the calendar year[2]. After this decree, the Ministry of Education, Universities and Research (MIUR) established the COEP Committee (Committee for the transition to Accrual Accounting), an advisory body including the administrative directors of several Italian public universities. The COEP Committee aimed to support the transition from cash accounting to accrual accounting through the development of guidelines and other tools for the administrative units of the Italian public universities. The subsequent Ministerial Decree no. 19/2014 stated that budget models would be defined within three months of the decree entering into force; these models, however, were defined only later by the Inter-Ministerial Decree no. 925 on December 10, 2015. Therefore, in the beginning, each university had to figure out how to construct these budgets. Since 2015, the regulatory framework has been completed and includes the annual forecasting budget for authorisation purposes (profit and loss and

[2] The related funding system is based on a threefold source of revenues: an ex ante lump sum provided by the university and research Ministry (MIUR) based on university size, results and other parameters; the funding from research projects provided by MIUR and other private and public financers (UE, region, private foundation, etc.); and other commercial activities. All the information available on these sources has to be included in the budget, authorised in November, and any other emerging revenue – and related expenses – requires a re-budgeting procedure to be fulfilled during the year.

investment budgets) with the retrospective financial reporting documents (balance sheet, income statement, statement of cash-flows and explanatory notes).

The five-year time span required to develop the overall regulation affected its actual implementation within universities, shifting to the accrual regime at different times. In particular, eight universities participated in a pilot initiative between 2010 and 2012, whereas the others completed the transition in 2016. During the main implementation process, in 2014, 45 universities participated in a major experimentation aimed at supporting the implementation of the accrual budgeting system (the budget initiative – BI –) by using a common software (named U-Gov) developed by Cineca, the consortium that provides software to Italian public universities. According to the reform, the first budget of profit and loss and the budget of investments had to be prepared within November 2014 and were applied to the period from January to December 2015. The universities involved in the BI are those included in the empirical setting of this contribution. The selection of this specific setting is motivated by the opportunity to observe the organisations' spontaneous reaction to the reform. The universities involved in the BI, in fact, were called to define the architecture of their budgetary system according to the accrual approach, even with the absence of specific directives and common rules concerning their content. In 2014, therefore, the universities that took part in the BI individually decided how to face the definition of their budgetary system, mobilising their internal capabilities, knowledge and skills for the accrual-based budgetary control.

4. Methodology

This study employs a mixed method design based on qualitative analysis by combining a threefold source of information: (1) the findings of an action research within the COEP Committee; (2) the results of a survey based on a standardised questionnaire; (3) the information from a second round of in-depth semi-structured interviews with the administrative directors of the BI's universities (Table 1).

In particular, information from the action research within the COEP Committee has been gathered through the participation of one of the authors—as the scientific advisor for one of the universities involved in the BI – at three of the meetings. We also gathered information from the reports of the other meetings of the COEP Committee. We employed the information from this first part of the research to identify the content of the survey, paying specific attention to some topics concerning the budget drafting that highlighted the universities' administrative directors substantial lack of skills in accrual accounting. Consequently, the objectives of the survey were to identify and compare the approaches adopted by the universities in relation to the drafting of the budget, paying particular attention to the identification of the potential lack of accrual accounting knowledge, skills or capabilities among the administrative staff. Overall 23 universities (out of 45 involved in the BI) took part in the project. After this, the actors were involved in the third part of the research, the in-depth semi-structured interviews with the person in charge of the budget drafting (1 hour for each university). Here we aimed to obtain further details on the approach selected for the development of their budgetary system.

Table 1: Research Phases

Phase	**Approach**	**Goal**	**Outcome**
1st	Action research in COEP Commette	Identifying the critical areas of the budgetary system change	Questionnaire for the survey
2nd	Survey	Identifying and comparing the approaches adopted in drafting of the budget	Overall picture of the adopted accounting approach
3rd	In-depth interviews	Obtaining further details and explainantion concerning the approach adopted, and related motivations.	Details on the adopted accounting approach, and motivations

Both the questionnaire and the in-depth semi-structured interviews cover three critical issues in the development of a budgetary system, as emerged from the first phase of the research: (1) list of documents to be included in the budgetary system, (2) identification of revenues and expenditures, (3) interpretation of the concept of a balanced budget and its harmonisation with the pre-reform system.

In the following, we describe the expected findings in terms of correct accounting standards and procedures.

With reference to the list of the documents to be included, the reform identifies only two mandatory documents, namely, the budget of profit and loss, and the investment budget. However, in order to obtain valuable support in the decision-making process, on the one hand, and a wider control on expenses, on the other hand, the accrual-based budgetary system in the public sector should also include, at least, a statement of prospective cash flows (Van der Hoek, 2005). A correct implementation of a budgetary system by the Italian universities should include, therefore, a budget of cash.

The second issue concerns the identification of revenues and expenditures and the content of the budget documents. In this respect, cash and full accrual represent two endpoints on a spectrum of possible accounting and financial reporting bases that merge elements of both, thereby producing different configurations (Van der Hoek, 2005). However, since the reform introduces a pure accrual system, it is expected that the universities involved in the survey refrain from employing any reference to cash measures among the revenues and the expenditures.

The third part of the survey covers the interpretation of the concept of balanced budget as introduced by the regulator. According to the fundamentals of accrual accounting, the concept of balanced budget requires the fulfilment of the basic accounting equation "Assets = Liabilities + Initial Equity + Revenues - Expenses". Furthermore, with a specific focus to the context of public organisations, the fulfilment of the identity "Revenues = Expenses" is expected too. The possibility given by the DM 19/2014 to use the pre-reform allocated surplus to achieve the post-reform balance, may lead the universities' administrative staff to adopt erroneous behaviours. However, in order to benefit from the DM 19/2014, while still maintaining the correct application of the accrual approach, the surplus generated in the cash accounting system should be decomposed, only in the first year of adoption, so as to identify the underlying revenues, expenses and investments related to the current year. Only the surplus generated by such items should be considered within the new budgeting system in order to reach a budget in which the revenues are equal to the expenses (balanced budget).

5. Findings

This section presents the findings of the analysis according to the three critical issues of the accounting change mentioned above.

List of documents included

As expected, all the universities from the sample declared to follow the regulatory provisions in force, drafting the budget of profit and loss, as well as the investment budget, both of which are subject to authorisation. In contrast, we obtained a very different picture in relation to the behaviour adopted in the absence of any specific legislative obligation (Table 2).

Table 2: Documents prepared

Document	Contemplated	Not-Contemplated
Input-based budgets* *%*	16 *70%*	7 *30%*
Budget of profit and loss *%*	23 *100%*	0 *0%*
Budget of investments *%*	23 *100%*	0 *0%*
Cash Budget *%*	3 *13%*	20 *87%*
Other documents *%*	7 *30%*	16 *70%*

*According to the pre-reform accounting regime

In particular, a significant number of universities (16 out of 23) decided to maintain the pre-reform cash-based approach with the compulsory budget of both profit and loss and investments. On the other hand, only a few universities perceived the need to voluntarily produce the cash budget (3 out of 23).

The choices adopted by the majority of the universities' involved, highlight a lack of knowledge concerning the budgetary system structure in an accrual accounting system. In fact, the correct implementation of an accrual-based budgetary system would require, at least, the employment of a cash budget to identify the financial resources needed to face the transaction programmed through the budgets of both investment and profit and loss.

In the in-depth semi-structured interviews, we investigated more carefully the motivations for choosing the intentional exclusion of the cash budget. The answer one of the administrative directors from the BI gave, signalled that the administrative personnel was substantially unfamiliar with the accrual approach:

> "*Given the lack of financial and human resources available in our office, we have already had several difficulties in preparing the compulsory documents. Public budget restrictions do not allow us to hire new employees, and our staff is pretty aged. We do not have the time to prepare other new documents*".

He also added:

> "*Furthermore U-Gov does not allow us to prepare the cash budget. If we decided to prepare a cash budget, we should find an additional software. And we don't have money and time for this sort of activity*".

In response to our request to explain how they thought to monitor the cash flows dynamics, the administrator in charge of the budget preparation from another university explained:

> "*We are not able to prepare a cash budget. However, we think that the new budget of profit and loss and budget of investment are able to provide this kind of information*".

In other words, they tried to offer an interpretation of the budget of profit and loss and budget of investment in terms of cash flows. In other cases, the administrative staff was more conscious of this lack, and 6 universities from the sample asked for (and obtained) a year extension from MIUR for the implementation of the new budgetary system. Finally, the third category of universities decided to face the monitoring of cash through the documents prepared according to the pre-reform approach:

"*We still monitor the cash dynamics through our old Input-based budget*".

The identification of revenues and expenses

In the second section of the questionnaire—and the corresponding part of the in-depth interviews—we explored the approach used by the universities in the identification of revenues and expenditures for the drafting of the profit and loss budget. We aimed to understand if the universities' administrative staff had the correct perception of the core concepts of accrual accounting. The first important sign of a certain lack of accrual knowledge and skills comes from the affirmation that the most diffused criterion—declared by the universities—in drafting the budget of profit and loss was not the pure accrual approach, but instead a mixed approach. With regard to the correct and coherent adoption of the new accounting system according to the regulation, our question concerning this aspect would not make sense, as implicitly a budget that is considered "accruals-based" can only be constructed on the accruals-based principle. In particular, while 10 universities declared to draft the document following only the pure accrual method, the other 13 universities declared to adopt a mixed accrual method. This section of the questionnaire also included a question asking the universities to indicate how—when drafting the budget using the mixed cash-accrual approach —they subsequently harmonised this with the results of the income statement at the end of the period, which was expected to be prepared according to a pure accrual method. The fact that almost all universities interviewed did not answer this question, and of those who responded, stated that they did not perform any harmonisation, confirms our perplexity over this matter.

With the in-depth interviews, we collected further information on such mixed approach that was not interpreted in the same way by all the universities. The common trend of the administrative staff that acknowledged that they adopted this solution was the use of methods combining new accruals-based method with the pre-reform cash-based approach.

This example of a contract management of external teaching staff described one of the reasons that required the adoption of a mixed cash-accrual approach in preparing the budget of profit and loss:

> "*Teachers on contract are paid by the Contracts Office. We cannot split the expenses related to the teaching contracts on two years, and the Contracts Office doesn't support us in this activity. We have to consider these expenditures for their entire amount in the budget for this year, we don't have other options. So, in the quantification of this expenses, we maintain a cash approach. It is impossible for us to adopt an accrual method in the quantification of expenses in the profit and loss budget"*.

The consequence is a budget of profit and loss that includes some expenses quantified whit an accrual method and other items quantified with a cash method. This is a clear example of mixed method.

In addition to this, the universities' administrative staff also provides a technical motivation for choosing the mixed cash-accrual approach depending on an initial bug of U-Gov software:

> "*We are obliged to enter deferred costs for their entire amount because this is the only way for the software to recognise the authorisation of the expenditure*".

The concept of balanced budget and the harmonisation with the pre-reform system

The answers to the questionnaire in reference to the interpretation given to the concept of a "balanced budget" described in the regulation, gives rise to an even more widespread use of a mixed cash-accrual approach in drafting budget documents.

The first hypothesis contemplated by the questionnaire on the concept of a balanced budget was that it should be understood merely as the equal value of revenue and expenses expected for the subsequent period in the accruals-based budget, while the balancing of the budget of investments is not considered (2 out of 23). The second option, on the other hand, considered the possibility that a balanced budget could be understood in more general terms, analysing both the profit and loss budget and the investment budget (6 out of 23). The third investigated position holds that the budget of profit and loss is balanced by also taking into consideration some items defined according to the pre-reform cash accounting system (9 out of 23). The residual option (the other concept of a balanced budget) was chosen by 6 universities. The second choice is the most logical for the accrual accounting approach. In contrast, the choice of the first option highlights a lack of knowledge of the fundamentals of accrual accounting, namely the basic equation "Asset= Liabilities + Initial Equity + Revenue - Expenses". Finally, the third choice indicates the actual use of a mixed cash-accrual approach, in which entries descending from the pre-reform cash approach are used with entries recorded according to the new accrual approach. The regulation itself suggests the adoption of the second solution and starts the debate on the harmonisation of the new accounting system with the previous accounting model. In fact, DM 19/2014 offered the possibility to use the pre-reform allocated surplus to achieve the balancing when drafting the accruals-based documents.

From the in-depth interviews, we obtained further information concerning this mixed cash-accrual approach in balancing the budget. When answering the question: "How do you interpret the concept of a budget balance required by the legislation?", one of the universities' administrative managers replied that:

> "*A budget balance is interpreted as the balance between cash inflow = cash outflow + investments + unavailable surplus. Our choice is motivated by the need to comply with the basic public accounting principle of balanced budget*". He continued: "*(In our budget) cash rather than accounting values deriving from resources available in previous fiscal years can be used to balance the subsequent fiscal year to cover cash flows for the year*".

Similarly, the administrative manager from another university notes that:

> "*The budget of profit and loss was balanced using a specific fund labelled 'Charges for the transition to accrual accounting', for which previous savings had been set aside.*" He continued: "*The investment budget was balanced using a cash outflow forecast resulting from our internal budget*".

For the third university:

> "*The presumed income was quantified, added to the unallocated surplus from previous financial years and used to cover the presumed costs*".

The fourth interesting example concerning the use of surplus from previous years is presented by the administrative director of a medium-sized Italian university:

> *"We will achieve the balanced budget of profit and loss using a specific account named 'provision for liabilities for the transition from cash accounting', created by setting aside amounts deriving from savings made in 2013".*

The last example is that provided by the vice-general director of another university:

> *"We are going to use the allocated reserves [from pre-reform cash accounting system] to cover expenses deriving from research projects for which we have already received the payment".*

All these approaches underline a knowledge gap concerning the fundamentals of the accrual approach showing a constant overlapping of the accrual and cash approach, using cash surpluses from previous years to compensate for costs and losses, along with a less than complete understanding of the meaning of the income-related amounts contained in the budget.

6. Discussion

The results of the assessment of the Italian public universities' transition from cash accounting to accrual accounting highlight a threefold gap in the capabilities of the administrative staff in the selection of documents to be included in the new budgetary system, the approach to revenue and expense recognition, and the interpretation of the concept of a balanced budget. These gaps emerge as a consequence of both the institutional context and the organisational context in which confusers, frustraters, and delayers factors raise several barriers to the effective implementation of the accounting innovation (Table 3).

Table 3: Barriers to the effective implementation of the accounting change

	Confusers	Frustrators	Delayers
Institutional source	Ambiguities in the concept of balanced budget Ambiguities in the use of pre-reform surplus	Impossibility to hire new employees	Initial absence of regulation for the budget implementation
Organizational source	Lack of comprehension of the value added of the accrual approach (Why?) Lack of comprehension of the technical implementation of the accrual approach (How?)	Lack of an accounting and accountability culture Aged employees	Limitation of the software

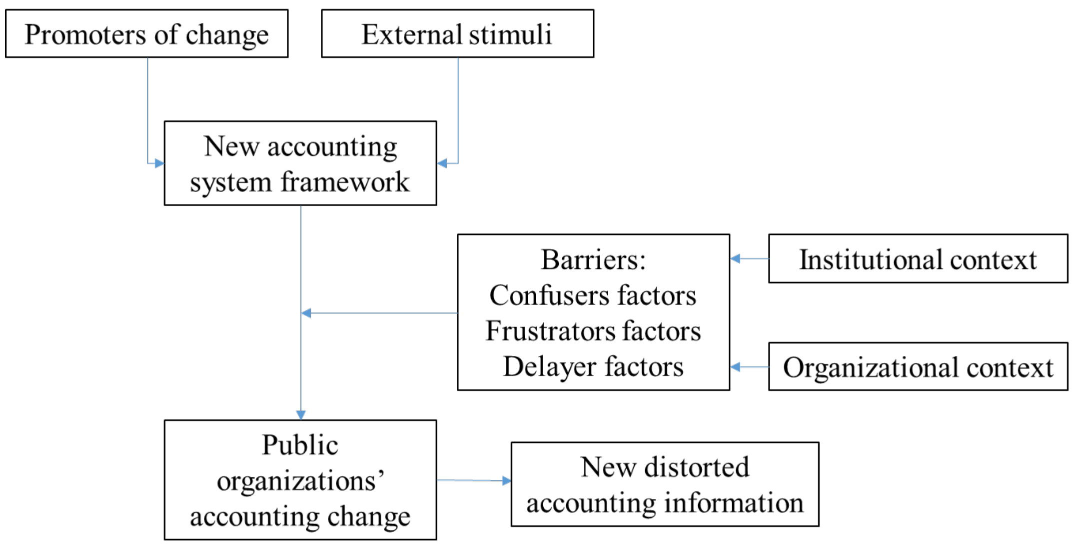
The reform introduces a new regulatory framework that includes some potential sources of ambiguity, as highlighted by neo-institutional scholars. We refer, in particular to the unspecified notion of balanced budget, the authorisational role of the budget of profit and loss without a compulsory budget of cash, and the explicit possibility to use the surplus deriving from the pre-reform cash accrual system to balance the revenues and expenses for the period. In contrast, the actual impossibility of the university to hire new employees – due to public budget restrictions imposed by the central government – can be considered a frustrator factor that tends to suppress the accounting innovation process. Finally, a delayer factor imputable to the institutional context is the initial absence of an implementing regulations, with the implication that the universities were forced to draft new documents with no specific instruction.

Adopting the RBV perspective, some barriers of the organisational context can be identified too. In this vain, the confuser factors refer, primary, to a diffused perception, among the administrative staffs, of the substantial irrelevance or neutrality of the accrual approach for their daily activities.

Furthermore, a gap of skills and knowledge generates confusion in the actual application of the accrual accounting. Instead, the frustrator factors depend on the lack of an accounting and accountability culture among the universities' administrative staff, combined with the presence of a significant number of aged employees with the habit to use the cash approach. Finally, the delayer factor can be primary identified in the accounting software's features, that do not allow the correct registration of specific item, on one hand, and the inclusion of budget's documents not specifically imposed by the regulatory framework.

The combination of such criticalities produces the improper application of the accounting innovation with the adoption of a mixed cash-accrual approach (Figure 1).

Figure 1: Barriers to the accounting change and mixed accrual approach



An overall misinterpretation of the model often emerges, and this is due to the administrative staffs' substantial incomprehension of the meaning of revenues and expenses, which tended to confuse them respectively with cash inflows and cash outflows. The possibility—explicitly provided for by the regulation—to use the pre-reform cash surplus to balance the profit and loss budget further favoured the use of a mixed cash-accrual approach. This option, in fact, authorised the administrative staff to contaminate the new document with old approach, thereby depriving it of its information potential. In the mixed cash-accrual approach the root of accounting is subverted, leading to an accounting system in which cash and accruals are combined; the former—cash approach—loses the ability to control current cash flows, and the latter—accrual approach—loses its potential to offer different information. Consequently, the comparison of estimated and actual data is made technically impossible, too, as these are determined according to different evaluation approach. Drafting an accrual-based budget that adopts a mixed cash-accrual approach greatly weakens the usefulness of the instrument, negatively impacting the whole information system. The document, therefore, loses its significance as an instrument to measure both the consumption in advance during the accounting period, and the capacity to reintegrate such wealth.

With reference to the reform framework, we think that it is not incorrect, but it lends to risky misinterpretations when the accounting knowledge of the receiving organisations is weak. This is not surprising in a regulation-driven context where public organisations tend to expect detailed guidelines and frameworks as a consequence of the Italian approach to NPM, historically characterised as legislation-driven, top-down, prescriptive and comprehensive (Anessi Pessina and Steccolini, 2005). The regulation does not spell out some aspects, however, if the universities' staff had sufficient accrual accounting skills, they could have easily complied with the regulations, by correctly applying the accrual approach with all the deriving benefits. More specifically, even in the absence of any specification, they could have both drafted the cash budget and selected the part of the pre-reform surplus that referred to the revenues and expenses for the period.

Our findings confirm previous research on accounting changes, which argues that despite the desire for change, implementation barriers, such as characteristics of the public sector itself and its accounting system that can restrict the options available to implement change, are possible (Luder, 1992, Christensen, 2002). In this specific case, we highlight that the inadequate accounting skills of the administrative staff, together with an ambiguous regulatory framework, are the most significant barriers to transitioning to accrual accounting. Through the examination of the accrual budgeting solutions implemented by the Italian public universities, this study responds to a call for action on the part of a number of authors, highlighting the need to describe and study the development of accounting techniques (Gårseth-Nesbakk 2011; Backer et al 2010; Agasisti et al 2015). Research also shows that this, in all probability, depends on some relevant technical accounting issues that hinder accrual accounting from being used in the public universities. The habitual practices deriving from cash accounting have a negative impact on the transition, as they are still deeply rooted in the training and background of the administrative staff, which makes the process of change neither easy nor immediate and often not fully implementable.

Although we believe that our mixed approach of analysis, and the related findings, can provide a better understanding of the organisational and institutional barriers to the implementation accounting innovation in the public sector, our research has its limitations and requires further elaboration. The limitations of this study refer, first, to its qualitative nature that constrains the possibility to generalise its results. Furthermore, this work highlights the role of several criticalities, which can be further tested through quantitative analyses. The second limitation concerns the specificity of the research context. The cases considered in this work are grounded in the Italian sector of public universities, specifying the sector and country, with the implication that the results may be strictly related to its specific institutional context. Further research can be conducted to assess cross-sector behaviour throughout the transition phases to confirm similar knowledge gaps or highlight differences. Moreover, we aimed to identify common trends in different organisational contexts. Therefore, additional research could focus on differing answers to external pressures from the transition of accounting regimes. In particular, following a contingency approach, the impact of different skills of the administrative staff of public organisations on the ability to face the change can be considered. With specific reference to the context of Italian public universities, the impact of time on the assimilation process will be more clear once the transition is complete for all universities.

7. Conclusion

The transition from cash accounting to accrual accounting marks a radical change not only in the methods of financial reporting and budgeting but also in the system of internal and external relationships. Such a profound change leads to the review of internal organisational and decision-making processes that cannot be considered as neutral operations. These transitions have significant implications for organisations that have been monitored to guarantee that the set objectives are effectively achieved. With the assessment of the transition from cash accounting to accrual accounting in Italian public universities, some technical issues that make this change particularly difficult has been analyzed. In particular, the organisational answer to the reform highlighted that the will to maintain a direct link with the pre-reform approach generated a persistent confusion between the accrual approach and the cash approach. At the same time, universities' administrative staff tended to attribute to the budget of profit and loss, functions and purposes that could only be pursued through other instruments.

Some policy implications for the reduction of both institutional and organizational barriers that may rise under similar circumstances can be deduced from this research.

At the institutional level, initiatives aimed to remove potential regulatory ambiguities and delays in the implementation of the regulation may allow a simpler transition. These initiatives may include, for example, a stronger involvement of both accounting professionals, on one hand, and representatives from the specific sector, on the other hand, in the first phases of the definition of the reform's framework. This allows a direct and immediate debate among policy-makers, who are responsible to maintain the focus of the reform on public aims, accounting professionals, who have the capabilities to define a coherent framework, and the actors responsible for the practical implementation of the reform (representatives of the administrative staff) who own the domain knowledge of the sector. The contribution of the latter, in particular, may be useful to obtain an immediate feedback on the employability of the accounting standards in that specific context, so as to avoid the consequences of the acritical transposition, to the public sector, of accounting tools developed in the business world.

At organizational level, apparent from our study is the need to invest not only in technical training—customising and use of the software or accounting methods to make records—but in training on the basic concepts of accrual approach. This requires moving from the perspective of the NPM approach that justifies the introduction of accrual techniques with the possibility of controlling expenses, to the perspective that accrual accounting information can be used more effectively in decision-making.

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