

# The role of Management Accounting Systems in Public Hospitals and the construction of Budgets

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## ABSTRACT

The role of management accounting systems (MAS) in the construction of budgets in the public health sector has been one of the least studied topics in the international literature. Furthermore, several studies have confirmed the loss of relevance of traditional approaches to budgeting due to the need to implement techniques that are more output and performance-oriented.

Since public hospitals are organisations that depend significantly on public funds, with substantial impacts on governments' budgets, the pressure for reducing expenditures is strong, causing increased difficulties in hospital management, which is becoming more and more complex every day.

In order to analyse the role of MAS in the preparation of budgets in public hospitals, this chapter presents a literature review on this topic. This review allows to conclude that the implementation of different kinds of budgeting is heavily influenced by governments and professionals. Nevertheless, the research on this topic is still very scarce, evidencing the need to continue studying.

**Keywords:** Management accounting systems, budgeting practices, health care sector, traditional and alternative budgeting approaches.

## 1. INTRODUCTION

The relevance of the information produced by management accounting systems (MAS) in public or private organisations is currently widely recognized. Like in the private sector, also in the public sector several organisations operate in an environment where cost information can be classified a strategic resource for long-term financial sustainability. The imbalance in government accounts, due to excessive expenditures and the complex nature of several public sector organisations – a reality of our days, makes management accounting an urgent need also for these organisations.

As to the environment of the health sector, a set of features must be pointed out, distinguishing this from other sectors, namely, the strong component of ethical judgments, uncertainty, economic inefficiencies and, ultimately, the conviction that health, together with the values of human life, is non-measurable. Nevertheless, health care costs must be identified, planned, managed and controlled.

The increase in public health expenditure in recent decades has been a great concern in most of the Organisation for Economic Cooperation and Development (OECD) countries. According to OECD (2014), in 2012, the total health expenditure in Portugal corresponded to 9.5% of the Gross Domestic Product (GDP), slightly above the average for all member countries (9.3%).

This progressive growth of health expenditure is mainly due to: technological and scientific progress achieved in this area, which has led to significant improvements in services; the increasing use of prescription drugs; the growing prevalence of treatable chronic diseases; among other factors (Kaplan & Porter, 2011; Lapsley, 2001; Shortell & Kaluzny, 2006). As a result, people can now live longer and healthier lives.

The public sector is the main source of health financing in virtually all OECD countries (OECD, 2014). According to the same source, in Portugal in 2012, 65% of health expenditures were financed by public funds, i.e. taxes.

The changes made on the budget preparation methods have been one of the major responses of the Portuguese Government to this issue. The implementation of the “programs” in the health care sector was one those changes, and it is expected that, among other things, the budget promotes accountability in outcome management, as well as performance evaluations.

The budget has a central role in public sector management. This document relates to a specific period of governance and presents a set of expenditures and revenues that policy makers intend to carry out in the various budget items. Wildavsky (1975) argues that the budget is a vital element of any government because it reflects the action plan in the implementation of public policies.

Although some empirical studies show that the budget is one of the most important tools in planning and controlling organisations, there is an ongoing debate about the usefulness of traditional budgets (Abernethy & Brownell, 1999; Uyar & Bilgin, 2011; Tayles, Pike & Sofian, 2007). There is a growing recognition, by several authors, of the limitations of conventional budgets (Abernethy & Brownell, 1999; Andrews & Hill, 2003; Anessi-Pessina, Barbera, Rota, Sicily, & Steccolini, 2012; Finkler & Ward, 1999; Hansen Hansen, Otley, & Van der Stede ., 2003; Hanninen, 2013; King et al., 2010; Libby & Lindsay, 2003, 2010; Marginson & Ogden, 2005; Mikesell, 1995; Neely, Sutcliff & Heyns, 2001; Sandino, 2007; Tayles et al., 2007; Uyar & Bilgin, 2011). Some suggestions for improvement point to other budgeting approaches such as “performance-based budgeting” (PBB) (Andrews & Hill, 2003; Kong, 2005), “zero-based budgeting” (ZBB) or “priority-based budgeting” (PYBB) (CIPFA, 2006; Tayles et al, 2007; Worrall, Collinge, & Bill, 1998), and “activity-based budgeting” (ABB) (Hansen et al., 2003; Pinto & Santos, 2005).

In the health sector, the strong pressure from governments for the reduction of public expenditures and rationalization of resources, is an incentive for carrying out reforms to achieve a greater sophistication of MAS (Arnaboldi & Lapsley, 2005; Young & Pearlman, 1993). In this context, the ability of anticipating and responding to opportunities and pressures in organisational management is critical for obtaining the desired results. But is the public health care sector in Portugal prepared for these new requirements?

In recent times, the literature on management accounting has given more attention to budgeting and the role of MAS as a diagnosis tool in managing performance assessment (Helden, 2005; King et al., 2010; Tayles et al., 2007; Uyar, & Bilgin, 2011). Additionally, there is a small number of empirical studies that analyse the relationship between MAS, contextual variables and performance (Abernethy & Brownell, 1999; Ezzamel, Robson & Stapleton (2012); Hammad, Jusoh, & Oon, 2010; Johansson & Siverbo, 2014; Pizzini, 2006). However, the issue

of adequacy of MAS to budgetary techniques used in the public sector, particularly in the health care sector, and its relationship with organisational performance, has been scarcely researched.

In order to make a contribution to the discussion of this issue, especially in the context of Portuguese public hospitals, the purpose of this chapter is to present the results of a literature review on the role of MAS, namely their level of adequacy to the introduction of new approaches to budgeting (PBB, ABB, ZBB, PYBB), in order to understand the relevance of management accounting in institutional change processes and its impact on performance evaluation techniques.

The next section offers an overview of the relevance of the MAS in the health care sector and the subsequent sections describe the role of budgets in MAS and the relevance loss of traditional budget techniques. Our concern is to explore alternative budgeting approaches in order to analyse the main contributions that have been made to the Portuguese health care sector. In the final section we will comment on the main results of a literature review on the connection between MAS and the construction of hospital budgets.

## **2. THE RELEVANCE OF MANAGEMENT ACCOUNTING IN THE HEALTH CARE SECTOR**

Considering the complex nature of health care, management accounting in this setting has assumed an important place and high visibility in the literature.

The increase in average life expectancy, the development of new medical treatments and the latest advances in technology seem to have led to an unstoppable rise in health care costs all over the world (Kaplan & Porter, 2011; Lapsley, 2001; Shortell & Kaluzny, 2006).

Alongside these aspects, other factors such as the highly complex nature of health care organisations and the relevance of technical and hierarchical authority, play an important role in the development of accounting information systems and, ultimately, in the quality of services provided. In recent years, these factors have received special attention by health authorities (Finkler & Ward, 1999; Hammad et al., 2010; Nyland & Pettersen, 2004).

Within the existing official health care organisations, hospitals tend to stand out due to their size and complexity. In Portugal, according to a survey carried out by the National Statistics Institute (INE, 2012), for the 2007-2011 period, only the general and specialized hospitals belonging to the public sector (including Corporate Public Entities, so-called EPE hospitals) were responsible for 38%, on average, of current health expenditure (7% more than in the 2000-2008 period (INE, 2010)).

Data obtained by Brignall (1997), Hammad et al. (2010) and Pettersen & Nyland (2004) show that hospitals, defined as complex healthcare providers, have services which are sometimes difficult to define. According to these authors, the size, the institutional context and the complexity of these services explain most of the obstacles found to measure performance, results, and calculate costs. For example, in Portugal, the mandatory implementation of the Analytical Accounting Plan for hospitals (PCAH), since 1996, includes the deployment of hundreds of cost centres (Leite & Rodrigues, 2010). Hence, hospitals are expected to invest in the development of MAS, improving decision-making processes and operational planning and control, promoting economic growth, as well as high degrees of efficiency and effectiveness.

Traditionally, the use of MAS has not been a major concern within the public sector, health care in particular, given the inevitable costs and the lack of profit-oriented objectives. Additionally, it is also true that the value of human health is priceless. However, the need to manage and

control the rising costs and rationalize resources, which are scarce, has placed a great deal of importance on the current role of MAS in hospital organisations (Kuchta & Ząbek, 2011; Pizzini, 2006).

Kaplan & Porter (2011) believe that if something cannot be measured, it cannot be managed or improved. Drury (2004) also argues that the main purpose of management accounting is to provide organisations with valuable information supporting managers in decision-making processes and promoting operational efficiency and effectiveness. The importance of management accounting has been highlighted in the literature, as it enhances the decision-making process (Drury, 2004) the flexibility to serve different purposes (Pizzini, 2006), taking into account the costs associated with a specific decision context (Smith, 2007).

Some international studies have considered the introduction of both management accounting and control techniques, and performance evaluation measures as the most significant changes in the accounting systems of the public sector over the past few years (Brignall & Modell, 2000; Eriotis, Stamatiadis & Vasiliou, 2011; Jackson & Lapsley, 2003).

Finkler & Ward (1999), Jackson & Lapsley (2003) and Nyland & Pettersen (2004) consider MAS an essential tool in the production of relevant information to support the decision-making process in management, budget control and accountability. For example, Jackson & Lapsley (2003) studied the use of management accounting techniques in the public sector, and found out that the activity-based-costing (ABC) method was the most used method for calculating costs, mainly in the health care sector. Following the same line of thought, other authors have also defended the advantages of the application of the ABC method in hospitals: "... one of the most important contributions of the ABC method is that it helps improving financial decision making, as well as other decisions at the level of reorganisation and service provision" (Moreno, 2007: 122).

In Poland, the study conducted by Kuchta & Ząbek (2011) confirms the usefulness of this methodology for hospitals, as it allows the evaluation of resource consumption and its distribution among different organisational units, the analysis of the existing variations between budget planning and execution, and the implementation of activities that add more value to the organisation.

Ramsey (1994) states that hospitals should be allowed to increase or eliminate production lines and services in order to meet the needs of citizens and create value. The author presents three pillars that support the functioning and utility of MAS in hospitals: (1) increasing cost efficiency without reducing quality of medical services; (2) maximizing internal resources through the internal management of production lines and services; and (3) identifying opportunities for continuous improvement. Hence, Pizzini (2006) claims that cost reduction, performance improvement and profit increase can all be achieved if hospitals also focus on direct cost containment, instead of focusing only on the promotion of administrative efficiency. However, the author also pinpoints that detailed information does not itself reduce health care costs.

Despite the growing importance of MAS in the health care sector, which have been greatly emphasised in the international literature, there has been some discussion on the fact that cost awareness in public social services has not been considered as important as in the services provided by private entities. Pizzini (2006) argues that the effective costs of health care services are unknown. The author adds that hospitals only use MAS with the main purpose of gaining external credibility. This view is also supported by Pettersen (1995) who considers that accounting information can serve the purpose of maintaining legitimacy, mainly because budgeting is often misaligned with operational services. By studying the ambulatory health care

services in Poland, Kuchta & Ząbek (2011) also found out that most of the existing problems are due to the lack of accurate information on costs, leading to inefficient management.

Some of the issues which have been emphasised in the literature are based on the belief that management accounting also aims to provide awareness of the costs arising from the activities carried out by health professionals within a hospital setting, since they are responsible for the highest consumption of resources, especially in the case of doctors and nurses (Hill, 2000). Nyland & Pettersen (2004) argue that there is still a long way to go before medical decisions legitimize information about costs. The authors also add that most of the professional groups see accounting information as useful if related to performance evaluation systems and incentive schemes.

A study conducted in England by Jones & Dewing (1997) confirmed that the awareness of hospital costs and revenues was based on accounting abstraction, with very little or no contribution of health professionals and directors. In fact, the interaction between managers and professionals is considered by some authors as tense and dichotomous. The reason for this relates to the fact that managers are more concerned with organisational aspects, such as efficiency, economy and cost imposition, whereas health professionals are more focused on the provision of medical care guided by a set of ethical principles. For example, Hewison (2002) showed the complex relationship existing between these two groups of professionals, challenging managers to reconsider a change in their leadership style, encouraging them to assume the role of a mentor and facilitator in finding solutions to problems, together with health professionals.

Most of the difficulties found in measuring and controlling health costs are often due to legitimacy issues, problems in production of accounting information by a large group of professionals who are not interested in these issues, and also due to a reduced use of such information in decision-making. However, management accounting is still an important system of information in hospital settings all over the world.

In Portugal, within the current of the New Public Management (NPM), several changes have occurred in the legal status of hospitals, mainly due to the application of private sector management methods and greater accountability. These reforms, along with the conviction that public service management models were inefficient (Leite & Rodrigues, 2010), have favoured the need to improve management accounting and control in hospital settings.

In the Portuguese health care sector, there were, until the 1980s, few incentives to invest in this kind of systems, since many organisations were funded based on the historical cost principle (Pereira, Sá & Jorge, 2009). The main objective of management accounting was to produce information on costs for external supervisory bodies, such as the Central Administration of the Health System (ACSS), mainly for financing and budgeting purposes. However, with the introduction of financing mechanisms based on the assignment of fixed values for each service (Diagnosis Related Groups – DRG) hospitals became responsible for the existing inefficiencies. Old management methods have been challenged by the growing demand for greater transparency in public spending and the increasing emphasis given to results, without neglecting the quality of the services provided to the community. This explains why MAS have assumed such an important role in Portuguese hospitals over the last few decades (Barros & Simões, 2007; Leite & Rodrigues, 2007, 2010; Pereira et al., 2009).

Despite the relevance of this issue, research studies in the health care sector are still scarce in Portugal. The few studies that have been conducted recognize that the role played by MAS in the Portuguese public hospitals is quite limited, since information providers mostly limit

themselves to comply with the legal requirements issued by the supervisory bodies, neglecting the internal value of that output.

Leite & Rodrigues (2010) analysed 26 Corporate Public Entities hospitals (EPE) and concluded that standard cost indicators reflect inefficiencies from hospital to hospital. Cost benchmarking seems to be insufficient in this case because the simple comparison of standard indicators should take other important factors into account, such as the features of each organisation, its context, complexity, and clinical data. Main findings of this study also led the authors to conclude that political, cultural and social factors take precedence over efficiency, making cost normalization irrelevant to management.

Other gaps were also detected by Leite & Rodrigues (2007) in a study on the role of management accounting practices in performance monitoring and evaluation of Portuguese EPE hospitals, such as: the low level of implementation of the PCAH, the lack of guidance in the calculation of profits and in the establishment of parameters for budgeted costs, the impossibility to examine possible deviations per section, the lack of management indicators for efficiency results, equity and quality, among other factors.

The implementation of new management accounting techniques is not a panacea for solving, by itself, the inadequacies found in the management of Portuguese hospitals. It is also true that strong institutional pressures to reduce costs and rationalize resources are a motivation for carrying out reforms to ensure greater sophistication of MAS (Arnaboldi & Lapsley, 2005; Young & Pearlman, 1993). Therefore, the challenge is to develop transversely new concepts, practices, and ways of addressing problems, promoting the active collaboration of governments, managers and professionals. Basically, management planning and control in the face of a changing environment, is essential to obtain the desired results. But is the health care sector in Portugal prepared for these new contingencies?

### **3. THE ROLE OF BUDGETS IN MANAGEMENT ACCOUNTING SYSTEMS**

The objectives of management accounting systems (MAS) for the public sector, as determined by the International Federation of Accountants (IFAC), have come to reinforce the importance of budgeting as a planning and control tool (IFAC, 2000). According to this organisation, the pressures set by governments for budget cuts without neglecting public service improvement, requires extensive knowledge of the entities' cost structures. For better decision making the full use of management accounting is fundamental (IFAC, 2000: 5).

In recent decades, international literature has come to recognize the budget as one of the main vectors in performance evaluation and innovation of MAS, especially in those organisations facing strategic change (Abernethy & Brownell, 1999; Anessi-Pessina et al., 2012; Chong & Mahama, 2014; Ezzamel et al., 2012; Johansson & Siverbo, 2014), with particular emphasis on the health care sector (Abernethy & Brownell, 1999; Jackson & Lapsley, 2003; King et al., 2010; Lapsley & Wright, 2004; Macinati & Rizzo, 2014).

Abernethy & Brownell (1999) argue that an appropriate response of MAS to the opportunities and pressures for change is essential for the survival of organisations. Based on the data collected in 63 Australian public hospitals, the authors emphasize the value of using budgets adjusted to strategic changes, especially at the level of goal-based performance, performance evaluation and greater accountability of managers. The budget is, thus, considered a core pillar in most MAS, representing an important tool for the coordination and communication of the strategic priorities of top management to low-level management.

Considering the tight connection between contingency factors, budgeting practices and the performance of organisations, King et al. (2010) also produced relevant evidence for the health care sector (Australian primary health care units). From 144 answers in a universe of 988 members of the Australian Management Practices Association, they found out that the contextual factors identified by contingency research are useful to identify budgeting practices and the extent of such use. In particular, the adoption of “written budgets” is positively related to organisational size and structure (based on decentralization). The scope of such use is also related to strategic issues and perceived environmental uncertainty. In addition, the authors have also produced evidence of the relationship between budgeting practices and performance. It was concluded that the performance evaluation of an activity is related to the choice of budgeting practices.

Another study on the use of budgets, also within the health sector, draws attention to the wide range of scientific knowledge to be explored in literature regarding the role of MAS in the analysis of health professionals’ behaviour and its relationship with organisational performance (Macinati & Rizzo, 2014). The study aims to analyse the level of motivation on the part of the clinical management of an Italian hospital, in the pursuit of participatory budgeting and its connection with individual and organisational performance. The results show that the budgetary participation motivates clinical managers to comply with budget targets. On the other hand, they also conclude that budgetary participation can shape the culture of these agents, increasing the absorption and identification of organisational goals. Based on this result, the authors emphasize the idea that committed clinical managers are more likely to use budgetary information, therefore suggesting that the convergence between individual and organisational goals should be seen as a key element in management accounting and control systems. The authors conclude that the commitment to meet the budget targets does not influence performance directly, unless this relationship is mediated through the use of budget information.

Similar to Macinati & Rizzo (2014), Johansson & Siverbo (2014) also draw attention to the surprising problem of the reduced number of studies analysing the design, the use and the effectiveness of budget control systems in the public sector. For these authors the budget and budgetary control are the main goal of planning, control and accountability in the public sector. The budget deviations in this sector represent an important performance dimension. The study analyses the current political and institutional pressures regarding the performance of public organisations, to prevent them from overspending or falling below budget. Based on the information collected from the analysis of 196 Swedish municipalities, it was concluded that in a more turbulent budgetary environment, the implementation of strict budgetary control is the functional response that increases the probability of complying with the budget targets. However, if the budgetary turbulence is only marginal, municipalities tend to carry out activities similar to those of the previous year, and the implementation of strict control mechanisms has no effect on budget deviations. According to Johansson & Siverbo (2014), the most significant contribution of their work was the assessment of the impact of the political and institutional environment and tight budget control on budgetary performance.

Beyond the health sector in particular, public sector in general has been the object of international research, with the aim of analysing the changes and innovations deriving from the adoption of management accounting practices. The diffusion and innovation of MAS has assumed, in the public sector, a new importance due to the reforms occurring in the context of NPM (Jackson & Lapsley, 2003; Lapsley & Wright, 2004). In addition to cost calculation methods and performance measurement tools, the main innovations also include budgeting techniques.

The work developed by Lapsley & Wright (2004) demonstrated the power of political and governmental influence in the adoption of these techniques, both in terms of diffusion and obstacles to their adoption and implementation. Based on a questionnaire made to 258 members of Scottish organisations in the public sector, the authors concluded that, from the several

budget techniques used, the technique which was more oriented for resource management was the most popular, with 34% of public organisations using this tool.

Following the same line of thought, the research conducted by Chong & Mahama (2014) also provides an analysis of the type of budget adopted by organisations. According to them, the budget is the most important tool in MAS and one of the most used forms of control. The authors studied, in particular, the type of budget used by Australian biotechnology companies in order to analyse the role of management control systems in motivational settings with effective teamwork. Although most organisations use budgets as a “diagnostic” tool, main findings of this study show there is a direct positive relationship between the "interactive" use of budgets and the greater efficiency of teamwork. On the other hand, the use of budgets as “diagnostic” tools is not related to team efficiency. According to the authors, this finding is consistent with previous literature supporting the conviction that this approach does not promote motivation and performance improvement.

The introduction of new budget practices in institutional change settings, with a very distinct and competitive logic served as a basis for the study of Ezzamel et al. (2012). The authors divided their empirical analysis into two stages: 1990 and 2011, including the tensions identified between the reforms carried out in the education sector in the UK (primary and secondary education), which led to the materialisation of the business logic (the dominant logic), as well as the professional and governance logics. Based on the neo-institutional theory, the authors observed the introduction of new budget practices centred in the allocation of resources and in the creation of centres for budget accountability, aiming to understand the role of MAS in institutional change processes, especially after the Education Reform Act 1988. The budget changes occurred materialized a business logic which, in turn, allowed restructuring the schools. Since the management model used by the local education authorities was no longer efficient, the new budgetary process introduced new budgetary planning and accountability practices, involving teachers and school principals.

Planning and management modernization processes in the public sector, came to emphasize the relevance of adopting new management mechanisms and techniques. In addition to the innovations observed in financial accounting and in the techniques used to support daily management (Hood, 1991; Lapsley, 1999), budgetary reforms were also carried out, as the role of budgets was considered key in MAS and administrative management (Anessi-Pessina et al., 2012). According to these authors, management reforms in the public sector promoted the budget as an essential tool in supporting organisational action, creating cost limits by nature, function and responsibility centres; defining functions in decision-making; specifying criteria and parameters for service provision, monitoring and performance evaluation, and aligning the individual interests with those of the organisation.

As a result, the administration of public entities and their management accounting and control systems have gained greater relevance in recent years. In addition, the need to improve and redesign alternative budget formats has increased significantly (Abernethy & Brownell, 1999; Anessi-Pessina et al., 2012; Finkler & Ward, 1999; Hansen et al., 2003; King et al., 2010; Marginson & Ogden, 2005; Sandino, 2007; Tayles et al., 2007; Uyar & Bilgin, 2011).

It is in this environment of institutional pressures for more efficient performance in resource allocation within the public sector that researchers draw attention to the urgent need to go beyond existing budgeting models, creating new definitions, objectives and interpretations of budgets, one of the main vectors of MAS.

The following table (table 1) summarises some of the key studies discussed in this section indicating the object of study, problem, main results, theories and approaches used, and the publication journal.



Author(s)	Object of study	Problem	Main results	Theories / approaches	Journals <sup>i</sup>
Abernethy & Brownell (1999)	Australian public hospitals	The importance of using budgets adjusted to strategic changes.	Using budgets interactively, and not only as a means of diagnostic, plays a key role in goal-based performance, performance evaluation and greater accountability.	Organisational change theories; Strategic change / style of budget use/ performance style	AOS
Lapsley & Wright (2004)	The Scottish public sector (health sector)	Diffusion and improvement of MAS practices in the Scottish public sector.	Political and governmental influence in the adoption of these techniques. The budget-oriented technique was the most used for resource management. The ZBB technique was the most prominent in the health sector.	An approach based on the diffusion of MAS innovation in the public sector	MAR
King, Clarkson & Wallace (2010)	Australian primary health care units	The relationship between contingency factors, budgeting practices (technique used) and performance.	The adoption of "written budgets" is positively related to organisational size and structure. The extent of such use is also related to strategy and perceived environmental uncertainty. It was concluded that the performance evaluation of an activity depends on the choice of budgetary practices.	Contingency theory	MAR
Ezzamel, Robson & Stapleton (2012)	Primary and secondary education schools in the UK	Introduction of budgeting techniques in the field of education (Education Reform Act 1988).	Some reforms (within the scope of NPM reforms) materialize the implementation of business logic (the dominant logic) at the level of budget management. As a result, changes have been made in schools and new budgetary planning and accountability practices have been adopted.	Neo-institutional theory	AOS
Chong & Mahama, 2014	Australian biotechnology companies	Analysis of the budget type used ("diagnosis" or "interactive") in the MAS, the motivation levels and teamwork effectiveness.	A direct relationship between the "interactive" use of budgets and a greater efficiency in teamwork, opposed to the adoption of budgets as a means of "diagnosis."	Social cognitive theory	MAR
Johansson & Siverbo (2014)	Swedish municipalities	The tight budgetary control in the public sector in the face of budgetary turbulences.	A high degree of budget turbulence generates a tight budgetary control which increases the likelihood of compliance with the budgetary centres. However, if the budget turbulence is only marginal, municipalities tend to carry out activities similar to those of the previous year and the implementation of tight control mechanisms has no effect on budget deviations.	Contingency theory	MAR
Macinati & Rizzo (2014)	An Italian Hospital	Analysis of motivation levels of clinical management in participatory budgeting and its connection with performance.	Budgetary participation motivates clinical managers to comply with budget targets and influences their culture, increasing the absorption of organisational goals. The conviction that committed clinical managers are more likely to use budgetary information. Convergence between individual and organisational goals.	Goal-setting theory	HP

**Table 1. Empirical research on budgets and management accounting systems**

## **4. RELEVANCE LOSS: TRADITIONAL BUDGETING TECHNIQUES AND ALTERNATIVE APPROACHES**

Since 1990, the Governmental Accounting Standards Board (GASB) has felt the need to strengthen, in the public sector, the development of new management accounting practices which are more output-oriented rather than just input-oriented. These practices are intended to provide a better performance measurement, helping to achieve governmental goals (GASB, 2005).

Anessi-Pessina et al. (2012) conducted a study on budgetary practices within the European public sector based on the analysis of papers published in international journals in the field of management accounting. The aim of the study was to identify the different dynamics of two reference periods: (1) the 1980s – a period characterized by studies which focused on the analysis of the budgeting process, and (2) the 1990s – a period when studies became more focused on the changes of budgeting processes. In the first period the main aim was to contribute to the existing body of research on budgeting in the public sector. In the second phase, the aim was to contribute to the body of scientific knowledge and to improve the understanding of ongoing reforms. The present research is included in this second phase and aims to provide valuable insight into the major paradigm shifts in budgeting processes.

### **4.1 Traditional budgeting**

From an international perspective, most of the studies carried out over the last decades in the field of management accounting have assumed, with rare exceptions, that budgets have a diagnostic role (Abernethy & Brownell, 1999; Chong & Mahama, 2014; King et al., 2010). According to this approach, budgets seem to fulfil the traditional role of allocating available resources, only assigning responsibility for the results obtained.

As a result, several studies address the general issue of budgeting and the fact that the traditional budgets (line-budgeting) have lost relevance (Abernethy & Brownell, 1999; Andrews & Hill, 2003; Anessi-Pessina et al., 2012; Finkler & Ward, 1999; Hanninen, 2013; Hansen et al., 2003; King et al., 2010; Lindsay & Libby 2003, 2010; Marginson & Ogden, 2005; Mikesell, 1995; Neely et al., 2001; Sandino, 2007; Tayles et al., 2007; Uyar & Bilgin, 2011). Some proposals for enhancement point to alternative budgeting approaches, namely “performance-based budgeting” (PBB) (Andrews & Hill, 2003; Kong, 2005), “activity-based budgeting” (ABB) (Hansen et al., 2003; Pinto & Santos, 2005), and “zero-based budgeting” (ZBB) (Akten, Giordano & Scheiffele, 2009; Finkler & Ward, 1999; Lapsley & Wright, 2004; Pyhrr, 1973,1977; Wildavsky, 1975) or “priority-based budgeting” (PYBB) (CIPFA, 2006; Tayles et al., 2007; Worrall et al., 1998).

According to Faria (2010), in Portugal, the current budget process can be characterized as traditional, with an incremental basis (functional departments based on line-items) and a rigid expenditure structure (budget appropriations). Furthermore, the implementation of performance management is still incipient. Therefore, the need to control inputs, to promote accountability in outcome management, and to undertake systematic performance evaluations and assessment of budgetary outcomes, requires changes in the budgeting process, such as the appropriateness of behaviours and the redefinition of the information systems accepted so far.

Traditionally, similarly to what happens in Portugal, most governments have decided to adopt the incremental budgeting approach. In this technique, the budget preparation for the following year is based on the approved budget for the current year plus an increased amount considering inflation. This is the simplest budgeting method, which the main focus of the incremental approach is the input control (Andrews & Hill, 2003), promoting a system of “responsibility accounting” and budget execution control (Pinto & Santos, 2005). However, as this technique is

based on the budget approved for previous periods, it does not promote medium and long-term planning or the effective achievement of objectives, regarding the use of available means or an efficient allocation of resources.

Therefore, in traditional budgeting the definition of the amount of resources to be allocated to the various bodies might be insufficient, as the expenditure forecast is based on patterns of previous periods, including marginal additions. The decisions made and the priorities established in the past are more likely to remain unchanged in the future. The reassessment of the needs and priorities of subsequent periods does not take place, meaning that this kind of budget does not promote strategic options, maximization of value, opportunity and efficiency in resource control, evaluation of results and performance.

Mikesell (1995) draws attention to the fact that incremental budgets tend to emphasize the adequate utilization of available funds, as they are not prepared to enhance the best decisions in the allocation of resources. Accordingly, the author argues that the public sector traditional budget appeared in a period when the main concern in budget preparation and control was essentially the prevention of fraud and corruption. Although more recently governments have progressed beyond this stage, the traditional approach is still present in the current budget practices.

The study by Neely et al. (2001) presented the most cited weaknesses of traditional budgeting. Some of the major disadvantages identified in the study were: the lengthy process, the high preparation costs, and mainly the lack of focus on strategy. The study also highlights the fact that this budgeting model does not favour the increment of the organisations value, given its strong focus on cost reduction and departmental barriers, thus generating feelings of undervaluation in individuals, rather than encouraging the sharing of knowledge and communication.

Similarly, Hansen et al. (2003) also highlight the emphasis given to financial value in these traditional models. According to the authors, this aspect reflects the concentration of efforts in reducing costs, depreciating value maximization.

In a more recent study, developed by Uyar & Bilgin (2011), the disadvantages of the traditional model are also highlighted. The excessive time spent in the management process is one of the gaps of the traditional model. Some findings suggest that the traditional planning and budgeting processes may consume up to 20% of the whole management time (Libby & Lindsay, 2003).

Consequently, some authors consider this technique a “relic” (Hanninen, 2013) since it prevents some historical reactions but it cannot be adapted to the changes and current requirements of organisational management. Similar results were discussed by Libby & Lindsay (2010) in their research study. The authors report that the traditional budget does not reflect strategy, besides being expensive and slow at detecting problems, becoming obsolete very quickly.

#### **4.2 Performance-based budgeting**

It is in this scenario of relevance loss of traditional models that the advent of new budgeting approaches takes place. With the aim of studying performance evaluation Andrews & Hill (2003) developed a study on the performance-based budgeting (PBB) technique, comparing it to the traditional approaches. They concluded that most American states have carried out reforms on PBB implementation, yet very few presented behavioural changes resulting from such reforms, both in terms of overall development and of response to new incentives based on performance or on resource allocation. The authors also explain that the PBB approach is applied simultaneously with traditional techniques, influencing the type of PBB to be implemented, rather than complementing existing budgetary practices.

It can be concluded that the effectiveness of the PBB technique is enhanced when the old budgeting systems are totally replaced, as observed in the experiences carried out in the States of Florida and Virginia. These states included (Andrews & Hill, 2003: 152): management accounting and auditing systems based on performance; adjustment of the existing budgeting systems to strategic changes, according to the specificities of the various bodies (tailoring model); introduction of responsibilities in required levels of performance; and behavioural uniformity in budget compliance, which should include simple rules, clarity and seriousness in the announcement of performance expectations by budget managers.

In fact, as discussed earlier in this chapter, the traditional budgeting process is not designed for managers to evaluate and rethink their models of action and be, consequently, evaluated for their performance if, for example, economic recession persists or a given policy continues. Contrarily, most of the current budgets are anchored to the budgets of previous periods, improved only by the adjustment to the rate of inflation or the specific trends of products or services (Akten et al., 2009).

The advantages of the implementation of the PBB approach are also evidenced by Kong (2005) in a study on USA public administration. The central question raised by the author was: what is new about PBB when compared to conventional budgeting techniques (incremental line-items)? The author identifies three key vectors in the conventional public budgeting structure: the allocation of resources, organisational management and citizens. Incremental line-item budgets are mainly focused on the allocation of resources, including financial, human, and technical resources. The first versions of PBB were, according to the author, connected with organisational elements, including the definition of key objectives, political goals and activities. Later versions, in the 1990s, focused on the outputs, service quality and citizen satisfaction. In order to allow PBB approach to produce good results, it is necessary that this last change of focus shows profitable route paths. The author did not risk guaranteeing, within a short period of time, the success of transforming a governmental budget, which is essentially political and annual, into a PBB model, which offers more long-term features and analytical capacity; however, the author did not question the future viability of this alternative.

### **4.3 Activity-based budgeting**

The emphasis on outputs and creation of value also reflects the premises of another relevant approach to budgeting – activity-based budgeting (ABB). Many authors consider ABB the most common alternative technique to the traditional approach. It reflects the anticipation of costs, inherent to the various activities, and a high level of detail, when compared to other techniques (Pinto & Santos, 2005).

According to Hansen et al. (2003), the financial guidance of traditional budgets is, undoubtedly, problematic. In other words, they do not favour the understanding of financial data by operational managers. Furthermore, if the top-down process is not aligned with the activities, the budget cycle should respect the preparation of financial budgets after the operational budgets are prepared. The idea is to create a new budgeting model that allows for greater flexibility in organisation while dealing with unexpected events, emphasizing thus the importance of operational planning (Hansen, 2011).

This alternative budgeting technique highlights communication and internal cooperation as it focuses on activities rather than on responsibility centres, showing the imbalances, the inefficiencies of useless activities and other information that can be used to enhance operations where resources are actually needed (Pinto & Santos, 2005). In fact, communication improves with the production of information by operational managers, as long as the information produced is not excessive.

Even though this model is oriented towards continuous improvement, with an emphasis on the outputs, the ABB process is still a relatively new concept and its practical advantages are yet unknown. Hansen et al. (2003) draw attention to the lack of scientific evidence to support its benefits and its pragmatic viability.

#### **4.4 Zero-based budgeting and priority-based budgeting**

Zero-based budgeting (ZBB) technique reflects, in general, the critical review of the traditional costs of each organisational area, and the construction of alternatives to facilitate the establishment of priorities to be approved superiorly.

The concept of ZBB emerged in the 1960s to address the failures of incremental budgeting (Drury, 2004). It was coined in the 1970s by Pyhrr (1973), who developed the process for Texas Instruments. Due to its success in the private sector, this model was also applied in the preparation of the 1973 budget by the Governor Jimmy Carter in the State of Georgia.

Drury (2004) defined this technique as an approach where all activities are justified before the decision on the amount of resources to allocate to each activity. In the ZBB approach, the focus is given to programs or activities instead of focusing on the functional departments (typical of traditional approaches).

According to Finkler & Ward (1999), the four main objectives of the ZBB approach are: (1) to analyse the activities performed within the organisation, (2) to understand the origin of those activities, (3) to study the most efficient and effective way to accomplish those tasks, and (4) to identify the vital activities of the organisation and their cost. The authors also highlight the ZBB focus on budgeting expenditure, identifying another positive aspect of this technique: the special emphasis given to non-acceptance of longstanding government budget surpluses.

Many articles were published in the 1970s about the ZBB technique, even though the number decreased rapidly in the early 1980s (Drury, 2004), and nowadays they are almost non-existent (Tayles et al., 2007). The gap between the years of successful research and present research has obscured the theory and the practice of ZBB technique, together with the political burden involved.

Several academics have provided a few reasons for this lack of success. The powerful message that "the expenses have to be fully justified", as well as excessive bureaucracy, high costs, awareness professional and consequent long procedures, are some of the reasons mentioned (Drury, 2004; Tayles et al., 2007; Worrall et al., 1998). Success will depend, according to Worrall et al. (1998), upon the implementation of a solid strategic process.

Wildavsky (1975) presented an unsuccessful case in the US Department of Agriculture. The reasons for failure were mainly: the allocation of specialized human resources for the exhaustive and systematic task of identifying priority needs; the need to justify things from scratch, even though that was not possible with programs that could not be replaced or changed and, finally, the non-acceptance, felt by the professionals, of the economic rationality logic, pressured by the constant monitoring of the tasks performed, even though they recognized the advantages of this technique.

On the other hand, the study by Akten et al. (2009) presented a positive experience in the application of the ZBB technique. The authors identified a European telecommunications group which, in the implementation process, began to disaggregate their expenses into "logical decision units", considering new types of expenses, such as capital expenditures (for example, building a third generation network). Each decision unit of capital expenditure was classified into the following categories: (i) reviewing, (ii) maintaining, and (iii) cutting down capital expenditures. The authors discussed the financial priority of each capital expenditure and its

alignment with the company's strategy. After a few interactions, the company reached the goal of reducing capital expenditures by about 20%, supported by the bet for future growth.

Pyhrr (1977) summarized the main goal of the ZBB technique, which was based on two key issues: (1) efficiency and effectiveness of the activities carried out by an organisation, and (2) to the possibility of eliminating or reducing organization's activities to afford new programs or simply help reducing the budget.

Drury (2004) argues that the ZBB approach assumes the presentation of different needs ensures the allocation of all resources on a "cost-benefit" basis. Following this principle of allocation, organisations and governments will be one step closer to ensuring "value-for-money", questioning old assumptions and implementing a systematic analysis tool which might, for example, be able to declare the abandonment of unproductive contracts, projects or programs.

Nevertheless, supported by the bottom-up strategy, the implementation of the ZBB technique implies the justification of all expenses without taking the budget of the previous year into account, therefore introducing, a certain economic rationality.

Lapsley & Wright (2004) argue that the adoption of new techniques of accounting and management control is largely stimulated by the government. After analysing the Scottish health sector, the authors concluded that the ZBB technique was the most used by these bodies: "The healthcare sector made particular use of budgeting techniques, with organisations using zero-based budgeting (ZBB) as well as one or other of management (RM) and activity-based management (ABM). In contrast, its use in local authorities and government agencies was much lower, with over half of these organisations not using any of these techniques". (Lapsley & Wright, 2004: 358).

According to this study, the National Health Service units are under high pressure to ensure any future savings and efficiencies. The adoption of the ZBB technique is defended by the government to establish areas of cost savings. On the other hand, according to managers of healthcare organisations the ZBB technique is complex and time consuming (3/4 months to be completed), with very low returns for the organisation. Nevertheless, one of the main results of the interviews carried out in this study, classified the ZBB technique as one of the most efficient techniques within the MAS.

The debates about the pros and cons of the ZBB approach have been mostly supported by empirical research (Akten et al., 2009; Pyhrr, 1977; Wildavsky, 1975). But, research on the ZBB approach has become scarce in the recent literature, namely from the 1980s. Therefore, ZBB seems to have again become an interesting research challenge with the main purpose of producing empirical knowledge about this technique and assess its effectiveness within organisations, namely, within the health sector. As the health sector becomes more complex, with increasingly higher costs, the need for new and better management accounting methods and tools also becomes stronger, especially for the entities which are subject to government pressures.

The priority-based budgeting (PYBB) approach is a technical extension of the zero-based budgeting (ZBB) approach.

The main objectives of the PYBB model are to emphasize corporate priorities in line with economy and budget increase. According to the Chartered Institute for Public Finance and Accounting (CIPFA, 2006) its mode of operation is based on the review of current departmental services and its evaluation requires the definition of some parameters: purpose of the services;

standards for the provision of services, and operating alternatives for such services. It is based on the analysis of these parameters that the items of expenditure for each unit of revenue will be ranked, which is a beneficial and highly expected factor for management decision makers.

Within this approach, Worrall et al. (1998) demonstrated that the laws of a local government in the UK favoured, among other aspects, the implementation of strategic priorities. The authors relate strategy-based budgets with the PYBB technique. In their study, it was concluded that 60% of the analysed councils had submitted a strategic plan, although there was no consensus on the definition of "strategic management". The authors classified "strategy" as the management of a set of activities that will meet priority objectives based on values of equity and local democracy in detriment of more "sophisticated" purposes which were less adjusted to the real needs of organisations. As resources become scarcer, local political forces tend to focus more on their priorities. In fact, there is strong evidence that, although there are still many bodies acting according to the paradigms of the 1970s, most of the governments are rethinking the process of strategic definitions, to achieve a mutual consensus on the effectiveness of the achieved results.

In order to provide a synthesis of the main advantages and disadvantages of the different budgeting approaches analysed in the present study, we have prepared table 2, which can be seen below.

<b>Budget Style</b>	<b>Strengths</b>	<b>Weaknesses</b>	<b>Research</b>
<i>Traditional budgeting (incremental, line-items)</i>	Simplicity, inexpensive.	Lack of strategy link; focus on margins; the cuts are arbitrary; delays in procedures	Andrews & Hill, (2003); Anessi-Pessina et al. (2012); Mikesell (1998); Neely et al. (2001).
<i>Performance-based budgeting</i>	Focused on outputs, quality of service and citizen satisfaction.	Simultaneous use of traditional techniques; few changes in behavior	Andrews & Hill (2003); Kong (2005).
<i>Activity-based budgeting</i>	Emphasis on outputs and value creation, reduction of bureaucracy; focus on activities and on the operational plan.	Reduced practical implementation; little knowledge of its real advantages.	Hansen et al., (2003, 2011); Pinto & Santos (2005)
<i>Priority-based budgeting</i>	Budget connected with strategy; global and participatory perspective.	Laborious, difficult to implement.	CIPFA (2006) ;Tayles et al. (2007); Worrall et al. (1998).
<i>Zero-based budgeting</i>	Resources needed in a "cost-benefit" basis; focus on programs and activities; economic rationality.	Complexity in implementation, high costs, excessive bureaucracy, procedural delays.	Akten et al. (2009); Finkler & Ward (1999); Lapsley & Wright (2004) ; Pyhrr (1973, 1977); Wildavsky (1975)

**Table 2- A comparison of different budget styles.**

## 5. WHAT CONTRIBUTIONS HAVE BEEN MADE TO THE PORTUGUESE HEALTH SECTOR?

Government management standards have changed over the last years and Portugal is no exception. In 2008, the OECD had highlighted the need to restructure the Portuguese budgeting process: “The adoption of approaches oriented towards budget and management performance is of utmost importance for Portugal” (OECD, 2008: 4). Nevertheless, OECD (2008) proposes that this implementation is based on three main stages: (1) a first stage where a medium-term budget program is developed (corresponding to a legislative period – 4 years – which is already included in the current Portuguese legal budget framework – paragraph 2 of Article 21-A of Law No. 41/2014); (2) a second stage, which included the development of performance information for the various programs and ministries and the identification and creation of the necessary information systems; and finally (3) a last stage in which performance information should be gradually integrated in the decision making process.

Following the meeting of the Council of Ministers held in April 2015, Portugal approved a new draft budgetary framework for 2016<sup>ii</sup>, which follows the guidelines of the current budgetary framework (Law No. 41/2014) and the international and European standards. Nevertheless, this proposal provides an integrated budgeting system, implying a change in the whole structure and composition of the Budgetary Framework Law regarding its principles and rules, implementation and control systems. Based on this draft, Portugal intends to give emphasis to those programs which are focused on results rather than on resources, meaning that the program budgeting is not necessarily a way to reduce public spending. Its main objectives are the improvement of the accountability of the sectoral ministries in a logic of top-down budgeting, and ensure that the program budgeting is, in fact, focused on results that can be evaluated using the most relevant indicators.

Furthermore, the medium-term horizon recommended by OECD (2008), and apparently accepted by the Portuguese government, contributes to the stability and credibility of these urgent reforms.

In the public health sector, the Portuguese hospitals’ budget was based on the previous year’s funding for many years. According to Amaro, Borges, Candoso, Ferreira, & Valente (2008:1):

*“in 1997 a new activity-based resource allocation model was adopted, the case-mix<sup>iii</sup> was introduced (inpatient and ambulatory surgery were classified using Diagnosis Related Groups - DRG) and a growing portion of the budget was based on the prevision of the hospitals activity (from 10% in 1997 to 50% in 2002)”.*

In 2002, with the corporatisation of some Portuguese hospitals the traditional public institution was replaced by corporate public entities, adopting a new legal status with private management techniques and procedures. Moreover, the financing of public hospitals started to be made mostly from current transfers from general government on a contract performance basis. This model of financing is established according to a contract performed between three entities: the Ministry of Health, represented by the Central Administration for the Health System (ACSS), the Regional Health Administrations (ARS), and Hospitals.

According to Lopez-Valcarcel & Perez (1996:378), in a study involving Spanish public hospitals, “*in the earlier system, which covered in fact all the expenditures of the hospital with a budget that no one respected, the hospital assumed the risk*”.

More recently, also Major & Magalhães (2014) argued that, the retrospective type of financing was over because the hospital activities were no longer funded by the Portuguese state, as occurred in the past. The state intended to only provide funding to the activities contracted by the ACSS and hospitals at the beginning of each calendar year (a prospective nature). Therefore, after consulting the State Budget and the funds allocated to the health care sector, the Ministry



of Health shall define, a priori, the hospital production amount to be “bought” annually for each hospital.

Contracting has been an important process used to improve performance within the Portuguese health care sector, as it aims to encourage providers to increase quality and efficiency of services, especially when facing the dilemma of the increase of health care needs, due to demographic factors and technological progress, on one hand, and the urgency to reduce expenditures, on the other hand. The hospital should commit itself to establish quantity and quality goals for particular activities (to be negotiated among all entities involved) and the budget should only cover justifiable expenditures (Lopez-Valcarcel & Perez, 1996).

Hence, the “program-contracts” have emerged, establishing a commitment between the purchaser and the funder, in which the hospital budgets, for the subsequent year, shall depend on the performance outcome of the previous year. Thus, if the hospital produces more and, therefore, overspends what is stated in the “program-contracts”, it will not be reimbursed by the Portuguese State in accordance with the new management model adopted for the NHS.

To ensure that such goals and contractual clauses are respected, the monitoring of contracts should be supervised by the state and regulated with a precision management culture (Araújo, 2005). The most important attraction of the “program-contract”, according to Lopez-Valcarcel & Perez (1996: 378), is that health planning becomes easier mainly due to the link established between hospital activities and the epidemiology goals previously included in the health agenda, and the possibility to allow planners to benchmark health care levels across different locations.

Valente (2010: 39) also highlighted several advantages for all agents involved in this process. According to the author, this model has “*introduced dynamism, improved knowledge regarding supply and demand, promoted information sharing between those responsible for the distribution of resources and the care providers, being an incentive to the accountability of all stakeholders involved in the process by the way resources are spent*”.

Despite the relevance of contracting and the performance-oriented logic involved, there has been some discussion about the gaps found in this process, mainly due to the identification of the activity costs.

The study conducted by Borges et al. (2010) allows us to reflect on the importance of implementing a costing system tailored to the needs of the different actors involved: “A costing system allows a better understanding of costs as well as a growing awareness of the limitedness of financial resources, making it essential to any health care system” (Borges et al., 2010: 112). The authors researched the reasons why the Portuguese Ministry of Health launched, in 2007, the ABC project in five pilot hospitals within the National Health Service (NHS). They reflected on the numerous advantages of the ABC method, especially at the level of cost calculation per activity, identifying the most prominent advantages, and their ability to provide clues for a more efficient utilization of resources. Despite all the advantages found, the study also detected some gaps related to the recent implementation of the ABC project in the pilot hospitals, which, at the time of the study, had only been concluded in three of the five national hospitals that integrated the initial group. The definition of the activities, the identification of activity and cost drivers, the involvement of professionals with different profiles and their fear of participating in the project, as they considered the measurement of execution times a means of performance evaluation, were the main challenges and difficulties of this project.

Concerning the scarce involvement of the health professionals, Antunes et al. (2011:193) argue that the introduction of an incentive system, in the context of outcomes management, is a powerful tool to induce changes and reset the organization’s goals. According to these authors, the entire outcome monitoring work is based on the performance evaluation that is negotiated under the incentive system.

Despite these arguments, the importance of the management accounting tools and budgeting techniques is undeniable, as stated in the study of Vicente, Major, Pinto & Sardinha (2009) on the role of management controllers in Portugal. The authors concluded that, in Portugal (as in the United Kingdom), budgets and the deviation analysis are the most prominent tools. The ABC has the highest level in the management accounting techniques universe.

In the scope of NPM which emerged in the 1980s, Silva (2011) also produced empirical evidence from Portuguese public hospitals. Through the analysis of the NGP guidelines associated with the corporate management model, which are not a distinctive element between the hospitals that follow the private model of management and those which follow the traditional model. In other words, the research conducted by Silva (2011) debunks some of the NGP assumptions, according to which the adoption of the models and tools used in private management provides significant improvements in management performance.

The strong institutional pressures resulting from the current economic and financial environment and from the imbalance in current government accounts, imposes a firm grip on public hospital budgets. The adoption of a new legal status by Portuguese hospitals, with the improvement of greater performance and accountability, implies the implementation of management accounting tools that meet the essential needs of budget discipline. But there is still a long way to go! Quoting “The European Public Health Alliance” (EPHA, 2014:5) “*Activity to control healthcare expenditure growth and implement hospital reform in Portugal is said to be ‘ongoing’ in the draft budget, but details are not given*”.

## **6. FINAL REMARKS**

The public sector evolves in a complex organisational environment which has been subjected to an increasing pace of change in recent years. In a context of organisational reforms, new public management paradigms and current pressures from governments, for greater and more effective rationalization of resources, come to have confirmed that the change in MAS is inevitable.

It is true that when the governments’ control is very tight, little room is left for the implementation of strategic changes. However, assuming a causal link between management accounting practices, institutional pressures and performance, the reforms carried out in the public sector have encouraged the introduction of new approaches to MAS, namely in budgetary techniques, considered a key factor in improving organisational performance.

Budgets are a major feature of MAS. Currently, it is clear that these information systems are totally dependent upon the achievement of the organisations’ priorities and strategic objectives, whether public or private.

Considering this interaction, international literature has reflected the need to integrate new budgeting approaches due to the inefficiency of traditional techniques. Until a few years ago, the incremental line-item budgetary approach seemed to be sufficient, because public spending was fairly stable and the revenues reflected economic growth. The imbalance in current government accounts and the current institutional pressures tend to influence organisations to define and rethink management accounting practices of the last years (Jackson & Lapsley, 2003; Lapsley & Wright, 2004).

Budgetary techniques can also be used as important tools for the interactive implementation of strategy, activity management, learning, dialogues and output analysis (PBB ABB, ZBB or

PYBB approaches). For example, with the potential implementation of the ZBB technique in the public sector in Portugal, already incorporated in the government's budget legislation since 2012, and with the priority-based interaction, one intends to promote new attitudes, concepts and practices which are more appropriate to face the current institutional challenges.

In the health care sector, much of the international empirical research to date has concluded that the successful implementation of the alternative budgeting approaches will depend upon the willingness of govern and professionals to accept these changes. Despite the governmental initiatives, such as the implementation of "program-contracts", and despite the academic studies on the role of MAS, there are still few empirical research studies that examine how the MAS can contribute to the implementation of alternative budget techniques that are more output and performance oriented.

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### **ENDNOTES**

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<sup>i</sup>Journals: AOS – *Accounting, Organisations and Society*; MAR – *Management Accounting Research*; HP – *Health Policy*.

<sup>ii</sup> Communication of the Council of Ministers held in April 2015, Retrieved in May 2015 from <http://www.portugal.gov.pt/pt/os-ministerios/ministro-da-presidencia-e-dos-assuntos-parlamentares/documentos-oficiais/20150430-cm-comunicado.aspx>.

<sup>iii</sup> The case-mix index (CMI) is a relative value that reflects the production of a hospital in relation to other hospitals in terms of their highest or lowest proportion of patients with complex pathologies, and the number of resources used. The CMI is the sum of the DRG relative weights divided by the total number of equivalent patients, namely:

$$\text{CMI} = \frac{\sum (\text{DRGi equivalent patients} \times \text{DRGi relative weights}) \text{ Hospital}}{\sum \text{DRGi- equivalent patients}}$$

Source CIDES e ACSS (2012) – Portal dos Codificação do GDH- Índice Case- Mix (ICM). Retrieved in May 2015- [http://portalcodgdh.min-saude.pt/index.php/%C3%8Dndice\\_de\\_Case\\_Mix\\_%28ICM%29](http://portalcodgdh.min-saude.pt/index.php/%C3%8Dndice_de_Case_Mix_%28ICM%29)