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# International Experiences with Accrual Budgeting in the Public Sector\*

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## ABSTRACT

With the adoption of accrual accounting as the basis for accounting records applied to accounting in the public sector of many countries, governments have to decide between keeping a cash basis for the preparation of budget documents and broadening the spectrum of change to include the field of public budget generation. This subject has been studied particularly by national governments and international organizations to verify the appropriateness of the paths taken by these countries. This article aims to initiate an important discussion for Brazil regarding the future passing of laws on public finances and paves the way for additional studies that expound on the discussion on accrual budgeting. International studies conducted on accrual budgeting together with government documents of the countries that have adopted the practice have been used as data sources. Based on the compilation of these documents from the Internet, content analysis was conducted, making it possible to identify differences between existing regimes and to identify advantages and disadvantages of accrual budgeting. Notably, differences were identified in terms of recorded amounts related to non-financial expenditure (e.g., depreciation) and recognition of liabilities during their generation rather than at the time of their payment. It is important to compare countries that use cash-based budgeting after the adoption of the accrual basis of accounting with countries that have adopted accrual budgeting and accounting to ascertain to what extent the same regime should be used for accounting and budgeting.

**Keywords:** Public budgeting. Accrual basis. Fiscal policy.

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## 1 INTRODUCTION

In recent years, the accrual basis of accounting has been adopted for the preparation of financial statements by different levels of government in many countries in an attempt to improve the information contained in these statements. Until the adoption of accrual accounting, accounting events disclosed in financial statements were conducted by cash-basis accounting. This change has allowed the users of this information to assess accountability for all resources controlled by the entity as well as the distribution of those resources, to evaluate performance, the financial position and cash flows of the entity and to make decisions about providing resources for the entity or conducting joint business ventures (International Federation of Accountants - IFAC, 2011).

Until the early 1990s, when the first countries began to adopt the accrual basis of accounting, the application of the accrual regime to the public sector was limited to units, bodies, agencies and companies operating in economic activity exploration sectors often competing with private companies.

The International Federation of Accountants (IFAC) through the issuance of the International Public Sector Accounting Standards - IPSAS declared the use of the accrual basis as a good accounting practice for the public sector. Accordingly, IPSAS 1 - Presentation of Financial Statements expressly directs in its second paragraph that international standards should be adopted in an environment that uses the accrual basis of accounting: "This standard shall be applied to all general purpose financial statements prepared and presented under the accrual basis of accounting in accordance with IPSASs." (IFAC, 2010, p. 32). Following this initiative, the accrual basis of accounting began to be adopted by other governments in a project of convergence with international standards (Torres, 2004; Martí, 2004).

In parallel, the International Monetary Fund (IMF) adopted the accrual basis for preparing Government Finance Statistics (GFS) in 2001. Information from finance statistics allows those who use this information to analyze various factors such as the size of the public sector, the contribution of the public sector to aggregate demand, investments and savings, the impact of fiscal policy on the use of resources, effectiveness of expenditure on poverty reduction and sustainability of fiscal policies among others (International Monetary Fund - IMF, 2001).

In 2001, other IMF documents such as the System of National Accounts - SNA, 1993, the Balance of Payments Manual and the Monetary and Financial Statistics Manual already required the use of the accrual basis for the generation of their financial statements. The alignment of the Government Finance Statistics Manual (GFSM) with the other manuals was desirable to facilitate the flow of data between different systems.

Thus, the GFSM suggested that "many countries will need to revise their underlying accounting systems to reflect the accrual basis of recording" (IMF, 2001, p. vii). This recommendation stems from the change in regime that was underway in some countries, which was perceived as a future trend and an indicator that a greater amount of information could be generated if these countries adopted the accrual basis of accounting; this potential underscored the importance of modifying the accrual basis adopted in the manual (Efford, 1996).

Nevertheless, the GFSM concedes the possibility of adjusting the data from cash accounting systems if there are no major differences. Nevertheless, the IMF suggests the generation of accounting reports based on cash and accrual accounting (IMF, 2007).

Accrual budgeting is a recent development for most of the countries in which it has been implemented. Therefore, academic discussion on accrual budgeting remains incipient. Scholars from the countries that have recently adopted accrual budgeting have focused their work on case studies relating to the results generated by the change (Guthrie, 1998; Warren & Barnes, 2003; Carlin, 2003, 2005, Van Der Hoek, 2005; Scheers, Sterck, & Bouckaert, 2005; Marti, 2006; Wynne, 2008; Robinson, 2009).

When extending a literature search to professional studies, many public bodies and international organizations were identified that have studied accrual budgeting intent on assessing the usefulness of accrual budgeting within their particular budgetary systems (Government Accountability Office - GAO, 2000 2007; Athukorala & Reid, 2003; Algemene Rekenkamer, 2003) as well as to establish a theoretical framework regarding the efficacy of changing to accrual budgeting (Christie, 2009; Federal Finance Administration, 2008).

In Brazil, although the accrual basis of accounting has been explored academically (Pigatto, Holanda, Moreira, & Carvalho, 2010; Borges, Mario, Cardoso & Aquino, 2010), the theme of accrual budgeting has not merited similar attention. Our literature search has identified a study performed by Rezende, Cunha, and Bevilacqua (2010), which briefly addresses the use of accrual budgeting and highlights the necessity to deepen this discussion.

The Federal Accounting Council (Conselho Federal de Contabilidade - CFC) and the National Treasury are currently converging public sector accounting standards with international accounting standards. This work includes the translation and validation of IPSAS, the convergence of the Brazilian Accounting Standards for the Public Sector (Normas Brasileiras de Contabilidade Aplicada ao Setor Público - NBCASP) with international standards established by IFAC, compliance with the edition of the Manual for Public Sector Accounting

(Manual de Contabilidade Aplicada ao Setor Público - MCASP) according to national and international standardization and a reinterpretation of Law 4,320/1964 to allow the accrual basis to be adopted as the basis of accounting records.

Despite the adoption of the accrual basis of accounting, IPSAS does not assume that the accrual basis will be used in budgeting. Specifically, IPSAS 24 Presentation of Budget Information in Financial Statements provided the option to use either the cash or accrual basis for budgeting. The ongoing process of convergence to international standards does not necessarily mean that the accrual basis must be adopted for the budget.

These changes are leading to discussions in the Brazilian public sector regarding the topic of public budgeting on an accrual basis. The discussion of the subject in the First International Information Seminar on Public Sector Costs (I Seminário Internacional Informação de Custos no Setor Público)<sup>1</sup> and the Second International Seminar on Public Sector Accounting (II Seminário Internacional de Contabilidade Pública)<sup>2</sup> is indicative of the relevance of this issue for public accountants.

Considering the imminent update of Brazil's public finance legislation and based on the revision of Senate Bill 229/2009, the present study aims to create a knowledge base

## 2 DEVELOPMENT

One way in which budgets can be classified is according to the accounting process used for the allocation of resources. By dividing budgets in this way, some budgets record government expenditure at the time when payment is made (cash basis) and some budgets record expenditure at the time the event occurs (accrual basis). Other budgeting methods consider the time associated with the legal obligation to incur an expense related to a project, which is a variation of the cash basis regime (obligation basis) (GAO, 2000). In addition, the budgets from many countries have mixed formulas of the above models, and the implementation of accrual budgeting in some countries has been limited to certain agencies or certain programs (GAO, 2007).

In cash budgeting, revenue and expenditure are recorded when cash is added to or taken from the financial coffers. In this scenario, the date of the event generating the transaction is irrelevant. Allocating resources according to the cash basis means that a budgetary authorization of expenditure effectively corresponds to an outflow of resources of equal value. When considering that the elapsed time between the generating event and the financial transaction is relatively small for the vast majority of government transactions, the distortion of financial information does not generally involve a considerable amount of money (Blöndall, 2003b, 2004).

In the obligation regime (used in the United States), budgetary expenditure is considered to occur at the point

that will initiate research on the topic of accrual budgeting.

Experiences with public budgeting using the accrual basis in the international arena remain subjected to adjustments in the continuous improvement of certain processes and the quality of information. Experience from the implementation of the accrual basis in Switzerland, the UK and Australia evaluated in several studies presented in this article will be the starting point for our analysis. Therefore, the present study aims to verify differences related to public management, financial results and cultural aspects associated with the change to accrual-based budgeting. This study will define the main differences between cash-based and accrual-based budgeting and accounting and will identify the changes required in the budgetary process to establish the accrual basis for the allocation of the budgetary revenue and expenditure. To fulfill its purpose, this article analyzes international experiences based on the data presented in a literature search. Content analysis was conducted to establish the changes made in those countries. Content analysis was chosen because it allows one to draw inferences from the text under study (Bauer, 2008). The analysis of revenue and expenditures according to different criteria guided our comparison.

of creation of the legal contract for execution of this expenditure. Thus, for long-term projects with expenditure spread over several financial years, expenditure is considered as if it took place to its total value at the beginning of the project because the legal relationship was established at this time (GAO, 2000).

In accrual budgeting, establishment of expenditure ceilings and forecasting of revenue are performed according to the accrual basis of accounting. According to Lüder and Jones (2003, p. 35), "the term 'accrual budgeting' means, in practice, the extent to which the accrual accounting records and measures are used in the budgeting process." In Brazil, this concept is included in Article 9 of Resolution 750/93 of the CFC, which was amended by Resolution 1,282/2010, and states: "The Principle of Accrual determines that the effects of transactions and other events are recognized in the period to which they relate, regardless of receipt of payment."

The standardization performed by the national body of accounting professionals in Brazil, the CFC, resulted in the issuance of ten resolutions dealing with public sector accounting in Brazil in late 2008. Thus, began the drafting process of the NBCASP.

The CFC issued Resolutions number 1,128 to 1,137/2008. The CFC also issued Resolution 1,366/2011, which addresses criteria for the allocation of costs in the public sector. None of these resolutions addresses the regime to be used for the recognition of budgetary revenue

<sup>1</sup> Conducted by the National Treasury on 03 to 04 December 2009, in the Auditorium of the School of Finance Administration in Brasília.

<sup>2</sup> Conducted by the CFC on 20 to September 22, 2010 in Belo Horizonte.

and expenditure in the public sector, as this concern is addressed by federal regulation.

The enforcement regime of the Brazilian budget is enshrined in Article 35 of Law 4,320/1964: "Art 35. Belong to the financial year: I - revenue collected in that financial year; II - expenditure legally made in that financial year". Thus, Brazil currently uses a modified cash basis of accounting, in which in addition to relating expenditure to the time when the financial asset left the public coffers, the legislation also considers expenditure made at the time that the compromise to make the payment was committed. The definition of commitment is present in the same law: "The expenditure commitment is the act emanated from the competent authority establishing the State's obligation to make the outstanding payment, dependent or not on implementation of the condition." In the case of revenue, the entry of the asset in the single account of the National Treasury occurs only at the gathering stage subsequent to collection, so that the recognition of financial gain actually occurs before the inflow of financial resources.

Thus, although the perspective given to accrual in the public sector is that "the principle of accrual applies in full to the public sector", according to the text of Annex II of Resolution 750/1993 of the CFC amended by Resolution 1,367/2011, full implementation occurs only in relation to equity items. Thus, the budgetary subsystem, which according to Resolution 1,129/2008 "records, processes and highlights the acts and facts relating to budgetary planning and execution", follows the regime defined in Law 4,320/1964.

The values reported by accrual budgeting are not necessarily identical to those revealed by accrual accounting because in the former case they are recorded *ex ante*, whereas in accrual accounting, this recording is made *ex-post*. Nevertheless, the term accrual budgeting is generally used to refer to budget records based on Financial Accounting Standards (Robinson, 2009). The *ex-ante* nature of the budget means that certain operations that are recorded in accounting and that influence the generation of accounting results are not recorded in the budget such as the revaluation of assets. However, this does not mean that it is not necessary to pay attention to these values at the time of budget preparation. In the specific case of revaluations, the assumed asset value affects the appropriation to be made for depreciation in the budget. Furthermore, in cases where agencies are "saving" money in the acquisition of assets, the undervaluation of an acquired asset can mean that the funds earmarked for this purpose are not sufficient to maintain and/or replace them (GAO, 2007.) The fact that depreciation is an uncontrollable expense raises concerns about the inclusion of depreciation in the budget (Robinson, 2002b). In this sense, a study conducted by the U.S. Government Accountability Office - GAO (1995), the Court of Auditors of the United States found that the inclusion of depreciation in the budget reduces control and increases the uncer-

tainty of budget estimates.

One of the main goals that motivated the introduction of the accrual basis in the public budget was to make the public budget more transparent and to improve the efficiency of public spending and accountability. Transparency is achieved because by considering the expenses incurred at the time of the money-generating event with the time during which the financial asset is disbursed being insignificant, one can obtain the real cost of government action allowing one to compare the cost of the activity if undertaken by the government and the cost of outsourcing the activity. Therefore, accrual budgeting acts as a decision tool for managers and as a way to measure results (Schick, 1996; Likierman, 2000; Salinas, 2002; Blöndall, 2003a; Barton, 2005; Van Der Hoek, 2005; Marti Lopez, 2008; Robinson, 2009; Jagalla, Becker, & Weber, 2011). Conversion to accrual budgeting means that the budget is transformed from an aspect of public expenditure authorization and financial control to a tool for planning and management (Sterck, Scheers, & Bouckaert, 2004).

However, a study conducted by Carlin (2005) in the state of Victoria, Australia showed that the evaluation of the total cost of departments using the accrual basis tends to show a higher cost for the public sector making it impossible to compare services provided by the public sector with services provided by the private sector.

Nevertheless, the adoption of the accrual basis for budgeting does not have the power to allow the assessment of different government bodies, and other actions are necessary to accomplish this goal (Robinson, 2002a). One way to assess different government bodies is the use of budgeting based on products (output budget). However, Carlin (2003) argues that output budget distorts operating and economic results of the government. Perhaps it was for this reason that in New Zealand, the disclosure of information on government costs had no impact on decision-making (Warren & Barnes, 2003).

Furthermore, proper cost management by the units responsible for incurring the expense is hampered by the requirement to meet a budget. The evaluation of managers using the results obtained in the generation of public services becomes impossible in the context of budgetary controls, which do not allow the flexibility required for the manager to achieve the lowest cost (Schick, 2007).

Changing the time at which certain expenses and revenues are recognized due to a change from the cash to accrual basis makes it necessary, for example, to recognize Social Security benefits in relation to contributions to pension schemes. In this case, the expense regarding payment of these benefits is related to the generating event rather than viewing these payments as having no apparent connection. Conversely, costs relating to expenditure for Social Security cannot be recorded in advance because they do not meet the necessary requirements to be recognized as an obligation. Another modification is

the recognition of the expense at the time the stock is consumed leaving the expense to be recorded upon payment to the supplier, which occurs when using the pure cash basis. Regarding other types of assets that are not intended for consumption, these assets must be depreciated over their useful life, meaning that the resources spent on their purchase become a form of expense that is divided across the period of existence of the asset (Blöndall, 2003a; Robinson, 2009).

Certain rights that public servants acquire over time should also be recognized according to the fulfillment of the conditions necessary for that acquisition. The following may be cited as examples in Brazil: the right to paid vacation leave, the thirteenth salary and bonus leave, which still exists in certain spheres of government. Similarly, interest on a loan is recognized in accordance with the passage of time. This is particularly important for loans on which the interest is paid only at the end of the period as well as for loans associated with a grace period (Blöndall, 2003a; Robinson, 2009).

Considering the case of capital assets and their treatment in public budgets on an accrual basis, the Australian National Commission of Audit indicated that "accrual budgets would eliminate distortions in the cash-based budget deficit or surplus caused by asset sales" (Australian National Commission of Audit, 1996). This proposal is founded based on the fact that the revenue from the sale of assets could not be used to reduce the budget deficit, which is not true when the cash basis is implemented.

However, the identification of public assets and their evaluation is problematic. There is no consensus regarding the accounting of common goods. International standardization on the subject conducted by IPSAS 17 - Property, Plant and Equipment (Tangible Fixed Assets) stipulates the requirement for accounting of infrastructure assets (streets, squares and roads, for example), while decreeing accounting of so-called heritage assets to be optional, among which are public monuments and national parks (IFAC, 2010).

Regarding the assessment of the value of most of these assets, where there are cases of assets being built more than a century ago, complexity arises from the lack of information regarding the construction cost of the asset. Furthermore there are no markets for trading public assets, thus their evaluation at market price is also unfeasible. These factors could mean that even under the accrual basis, the selling of undervalued assets can take place to reduce the budget deficit with the profit generated by this transaction (Robinson, 1998). The GFSM suggests the value of the insurance premium on the asset in question as a solution to the lack of common means of asset evaluation (IMF, 2001).

Despite these difficulties, New Zealand includes both categories of goods as assets (GAO, 2007). The UK has solved the issue by determining a nominal value for non-operating assets that were already owned while evaluating new acquisitions at their purchase pri-

ce (Diamond, 2006).

The use of the accrual regime leads to an improvement in the way that resources are allocated for the maintenance of government assets. When using the cash basis, projects related to capital expenditure were only considered if there was a budget surplus. With depreciation, public assets will always occupy part of the budget (Christie, 2009).

Another relevant difference between the cash and accrual basis is the timing of revenue recognition. In accrual budgeting, the generating event of the revenue is considered. The birth of the right to receive money from the State regardless of the payment of such by the taxpayer represents the birth of revenue on an accrual basis. Using this approach, there is also the need to assume that a portion of taxpayers will not make such a payment creating a provision in the value relating to this portion (Blöndall, 2004).

Expenditure recorded under the accrual period that has a non-monetary nature such as depreciation and the right to Social Security benefits may be included in the budget in two different ways: the cash-in-hand model and the no-cash-in-hand model (Blöndall, 2004).

In the cash-in-hand model, administrative units receive financial resources to meet their expenditure needs where disbursement occurs during the financial year as well as for expenses not involving cash. In this model, the control of the acquisition of assets becomes less transparent, as the administrative unit could use the resources received for purposes other than replacing the depreciated asset (Blöndall, 2004).

In the no-cash-in-hand model, financial resources are only allocated for the payment of expenses in a certain period. Expenses that do not correspond to disbursements receive budgetary resources but not financial resources. This model has the advantage of ensuring parliamentary control over the acquisition of capital assets reducing the autonomy of units in the use of financial resources related to expenses recorded according to the generating event, although financial resources are not paid during the period (Blöndall, 2004).

As costs become more transparent, the budget becomes more complex. The political decision regarding the allocation of budgetary funds should always be represented in the budget. However, that premise cannot be verified in accrual budgeting. In fact, in countries where accrual budgeting has been implemented, the role of Parliament in the budgetary process has decreased, and the role of technicians has increased concomitantly. In this sense, it is interesting to note that the adoption of the accrual basis in most countries is a movement that has been initiated by technicians and not by politicians. In the case of Australia, where the accrual budget was adopted along with the output budget, organizational changes commonly performed by agencies have made it difficult for politicians in this country to follow the development of public expenditure over time. This lack of transparency undermines parliamentary control

over the budget, and Australian politicians still have difficulty understanding accrual budgeting even ten years after the implementation of accrual budgeting. The very posture of the legislature changes when the object of reform is focused on the budget with many parliamentarians showing aversion to changes in the budgetary process. In Germany, for example, parliamentary opposition suspended the budget modernization plan (Lüder & Jones, 2003; Blöndall, 2003a, 2003b, 2004; Scheers, Sterck, & Bouckaert, 2005; Schick, 2007; Robb & Newberry, 2007; Blöndall, Bergvall, Hawkesworth, & Deighton-Smith, 2008; Robinson, 2009; Jones & Lüder, 2011; Adhikari & Mellempvik, 2011).

The cash regime portrays public expenditure in a straightforward manner, as the budgeted amounts are those that actually leave the public coffers. Furthermore, the implementation of the accrual basis requires estimates to be made, which are more easily manipulated and more difficult to understand, which brings about concerns regarding the generation and use of information. Most likely for this reason, studies indicate that the decision-making process of government continues to use cash-based information even after the accrual basis is applied (Diamond, 2006; Schick, 2007; GAO, 2007; Groot & Budding, 2008; Barton 2011).

The use of tools to assess costs and the production of accurate financial and budgetary information are key for the optimal allocation of public funds, and so that managers can be held accountable for the results (OECD, 2009). However, the reluctance of some governments in using the accrual method for budget preparation indicates that the factors discussed above have prevented the adoption of accrual budgeting as a logical step to be taken after the adoption of the accrual method for public accounting in those countries.

The basis chosen for the appropriation of budgetary revenue and expenditure is that used primarily for the generation of reports and documents used by public servants and political agents (Athukorala & Reid, 2003).

Therefore, it is important to confirm that the use of the same regime for the preparation of the budget and the generation of financial statistics is advantageous for both systems by allowing information generated by one system to be directly used as the basis of analysis for the other (Keuning & Van Tongeren, 2004).

The same purpose can be observed when the accounting basis used is accrual in nature because one of the goals of the financial statements generated by accrual accounting is the evaluation of conformity of the entity in relation to accrual budgeting (International Federation of Accountants - IFAC, 2000). The use of different systems for budgeting and accounting, although individually useful as management tools, diminishes their relevance regarding budgetary policy and the development of public policies (Paulsson, 2006).

As a result, the accrual regime, which was initially for the preparation of financial statements, began to be used as the basis for budget allocation of public expenditure (Schick, 2007).

The adoption of accrual as the basis of accounting records without the use of the accrual basis for the appropriation of budgetary revenue and expenditure can prevent financial statements from being useful as tools for decision-making essentially rendering the financial statements useful only for bureaucratic reasons (Anessi-Pessina & Steccolini, 2007).

A study conducted by the Netherlands Court of Audit (Algemene Rekenkamer, 2003), in which the experience of the Swedish central government was discussed (the Swedish government maintained cash budgeting after the introduction of accrual accounting), concluded that use of the two different systems was inadvisable because of compatibility problems with the information from the accounting and budgetary documents. A similar study conducted on local Italian governments (Anessi-Pessina, Nasi & Steccolini, 2008) found that the reliability of the financial statements prepared under the accrual regime was being undermined at least partially by the use of traditional budgetary accounting, which is a solution that is being adopted in Brazil.

These problems using different regimes occur because the goals of the accrual and cash regimes can be conflicting (Diamond, 2006). Chan (2001) adds that harmony between budgeting and accounting standards is an essential factor for the credibility of the information generated by the accounting statements.

However, the purpose for which the information is used in each system, the greater resistance found against budgetary regime change and the use of mixed modified regimes can be considered as the reason why many governments still operate with different regimes for accounting and budgeting (Paulsson, 2007).

In this sense, it is interesting that Australia, which adopted both budgeting and accounting on an accrual basis, continues to make decisions based mostly on cash flow information when referring to budgetary policies (Blöndall et al., 2008.) In a study conducted by Connolly and Hyndman (2006), the use of accrual information in Northern Ireland, a country that uses accrual budgeting and accounting, was also found to be limited because managers did not understand this information. The adoption of the accrual basis in Northern Ireland has therefore failed to generate the expected benefits.

An important consideration is that although budgetary reforms occurring in more developed countries can be considered successful experiences, the same cannot be said of attempts to reproduce the success of budgetary reforms in developing countries (Allen, 2009; Mellempvik & Adhikari, 2011), as it has been necessary for each country to adapt budgetary reforms to their own reality (Bale & Dale, 1998). Thus, while the adoption of the accrual basis in accounting makes accrual budgeting advantageous, the advantage of using accrual accounting in countries that do not have highly developed systems remains debatable (Hepworth, 2003).

The difficulty encountered by developing countries in increasing the collection of public revenue as well as in their greater susceptibility to international crises are undoubtedly related to the problems those countries face in implementing these reforms (IMF, 2003). Moreover, Schick (1998) considers that institutional differences between developed countries and developing countries can make the adoption of good public management practices unviable.

In addition to the level of resource allocation, accrual budgeting may be used to meet the goal of macroeconomic stabilization, where the accrual basis can be used to calculate budgetary results for political financial purposes and for the establishment of ceilings relating to government debt (Diamond, 2006).

The two functions performed by fiscal policy that should be guaranteed by any budgetary system are fiscal sustainability and fiscal stabilization (Robinson, 2009). The influence of the budgetary process on financial results can be found when identifying countries that, despite going through periods of economic growth and commitment to fiscal discipline, have not obtained favorable results with regard to finances (Blöndall, 2003a).

An argument has been made that the measurement of government financial results using the cash basis may be incomplete rendering government financial results subject to manipulation. This can occur because payment may be anticipated or postponed when the expense associated with the consumption of assets is not considered, thus generating a different result (Schick, 2007). A study performed by the U.S. General Accountability Office - GAO (2007) identified six areas as generators of the biggest differences in determining the results between the two different regimes: benefits for public servants, benefits for military personnel, compensation for veterans, capital assets, insurance and environmental contingencies.

Thus, budgeting on a cash basis can bypass the generation of contingencies that will be paid in the future. An accrual budget therefore can be advantageous in making governments act with greater caution with respect to making commitments with a low impact on the current budget but could have additional impact on future fiscal years (Schick, 2007). Thus, the best method for measuring the potential cost of long-term commitments is the accrual budget because it allows the calculation of the likely cost of cash flows in present values and anticipates measures to ensure that financial sustainability is not compromised (Meyers, 2009; Salinas, 2002).

In considering that changing the point at which revenues and expenses are recognized interferes with the evaluation of fiscal policy, Marti (2006) identified that the larger deficit generated by the accrual budget and the possibility of evaluating the long-term impact mean that better policies for the treatment of fiscal aggregates can be adopted.

In addition, the accrual budget also enables the identification of budgetary effects on long-term sustainability as well as intergenerational effects in showing the relationship between total government revenue and costs for a certain period forming a more actuarially solid budget (Ball, Dale, Eggers, & Sacco, 2000; Barton, 2009).

The use of the accrual regime therefore increases the ease with which to represent the maintenance of the net equity of the public entity (Robinson, 1998). Accordingly, whereas a balanced cash budget is one in which cash inputs outweigh outputs, all costs incurred in a given period of time are considered when using the accrual basis of accounting (Robinson, 2002c).

Another important factor to consider is that although governments may seek to generate positive budgetary outcomes when adopting the accrual basis, cash deficits may be generated (Buti, Martins, & Turrini, 2007). Therefore, fiscal policy will only be considered appropriate for governments that use the accrual basis when there is also a control on the amount of financial resources received and expended (Robinson, 2009).

When using accrual budgeting practices, mere control of the total expenditure is insufficient to maintain fiscal debt. This occurs because expenditure on capital goods is no longer included in the budget, as expenditures on capital goods will only be recognized through the depreciation of the asset that is built or acquired (Robinson, 2009).

Countries that have implemented accrual budgeting have accounted for capital expenditures in two ways. In some countries, control of capital expenditure has been achieved through a budget ceiling for the capital expenditure of the body. This model is followed in the UK and in New Zealand and is more transparent, as the ceilings are explicit in the budget document. However, Australia chose not to include ceilings for capital expenditures in the budget. In Australia, expenditures with one-year depreciation help determine the amount to be spent on capital expenditures. This value is accumulated by the body, and thus external authorization was not necessary to incur the expense when the body had depreciated to a sufficient extent for making capital expenditure (Jones, 2003; Robinson, 2009). Thus, in the words of Robinson (2002b), the receipt of funds by the body is effectively accomplished by expenditure rather than disbursement. However, in the latter case, the agencies could use the accumulated funds for other purchases showing that in this model, parliament can easily lose control over the acquisition of capital assets (GAO, 2007).

The Finance and Public Administration Committee of the Australian Senate considered this provision of allocations for asset depreciation as an anomaly because the assets that were being depreciated had been approved in the budget upon acquisition resulting in double expenditure (Murray 2008). The fact that, with the adoption of the accrual basis, none of the agencies



received the funds relating to accumulated depreciation means that such a method makes even less sense (Blöndall et al., 2008). Based on this premise, a recommendation was made to the government suggesting that a new model should be developed for the 2009/2010 budget (Murray, 2008). Thus, control of capital expenditures based on the total resources required for a given financial year on the budget was subsequently established for the 2010/2011 fiscal year (Australia, 2008). Furthermore, cash budgeting was reintroduced for the generation of governmental financial statistics in addition to the accrual budgeting from the 2008/2009 budget (Barton, 2009).

In contrast to what Rezende et al. (2010) suggested previously, this change was not the end of accrual budgeting in Australia. In fact, "cash transactions are specifically identified because cash management is considered an integral function of accrual budgeting" (Australia, 2010, p. 9-31). Thus, the change was concentrated on the model used for authorization of capital expenditure, which was no longer based on the accumulation of depreciation balances throughout the budgets of the agency and on the recentralization of financial resource management effectively abandoning the cash-in-hand model.

Of the countries that have adopted the accrual regime, there is no standardization on the regime used for the calculation of financial results. Indicators of fiscal aggregates in New Zealand and Canada are based on the accrual method, whereas Australia and the UK use a cash basis for calculating government outcomes. However, all countries without exception use information generated on a cash basis at some point (GAO, 2007).

Robinson (2009) notes that governments that use the accrual regime should also generate fiscal aggregates based on the accrual method. The author adds that the use of accrual-based aggregates is advantageous because public equity debt is a better indicator for the management of fiscal sustainability than cash debt. However, the use of fiscal aggregates on a cash or accrual basis can be performed regardless of the regime adopted for accounting or budgeting (Schick, 2009).

The analysis of studies conducted on international experiences with accrual budgeting highlights some difficulties that the model may encounter if adopted in Brazil. First, there would be a change in the bodies that currently concentrate budgetary resources given the change in the focus of consideration of budgetary expenditure. As owners of a considerable amount of assets, the expenditures of the Armed Forces, for example, would be increased by virtue of the inclusion of depreciation. The need for statutory modification is clear because Law 4,320/1964 determines which regime should be used for budgeting. Furthermore, a cultural change is needed for a culture that is completely focused on the generation of cash-based information, and this change must be accompanied by training of the public servants that work with this information. Finally, as observed in the Australian example, the complexity of the budgetary process will increase, and Parliament's understanding of the budgetary process would therefore decrease. This obstacle cannot be underestimated because the complexity of accrual budgeting was one of the main reasons why Sweden and Germany did not adopt accrual budgeting.

The following table shows the main advantages and disadvantages of accrual budgeting ascertained in this study:

Advantages	Disadvantages
<ul style="list-style-type: none"> <li>◆ Increased transparency regarding cost of public services</li> <li>◆ Improved accountability by results</li> <li>◆ Generation of information on the same basis as accounting information</li> <li>◆ Improved allocation of expenditure with maintenance of public assets</li> <li>◆ Better identification of contingencies that will be paid in the future</li> </ul>	<ul style="list-style-type: none"> <li>◆ Increased accounting estimates in the budget, possibly generating uncertainty regarding the numbers budgeted</li> <li>◆ Increased budget complexity</li> <li>◆ Reduced parliamentary control over the budget</li> </ul>

**Figure 1** Advantages and disadvantages of using accrual budgeting in the public sector

### 3 CONCLUSIONS

The accrual basis for budgeting revenue and expenditure is a process that began approximately twenty years ago, yet accrual budgeting remains a foreign topic in Brazil despite the fact that the accrual approach has been used in accounting events applied to the public sector and cost information used by the federal government.

The main purpose of this study was to understand the importance of accrual budgeting at a period when Brazil has adopted the accrual basis for accounting. As Brazil is

in the process of changing the laws for public finances, a regime of accrual budgeting should not be implemented without first being explored and discussed in academia.

The lack of international studies analyzing financial results and the evolution of public debt of countries that have adopted the accrual regime, the dissent among scholars regarding the benefits achieved by adopting accrual budgeting and, in particular, the scarcity of studies making comparisons between countries

that have already adopted the accrual regime justify the need to discuss the budget-making options academically from the Brazilian perspective. Therefore, this article opens the discussion of accrual budgeting in Brazil by analyzing previous studies and highlighting possible future developments on the subject.

This article has fulfilled its objective of developing a theoretical starting point for the study of the public budget on an accrual basis in Brazil bringing together the main aspects of this budget allocation model by using studies conducted on the subject around the world.

Future discussions and studies should explore the advantages and disadvantages of accrual budgeting in greater depth, which will require more studies on the

experiences of other countries that have adopted accrual budgeting. Future studies should compare countries that have kept cash budgeting after the adoption of the accrual basis of accounting with countries that have adopted the accrual basis of budgeting and accounting to determine to what extent the same regime should be used for accounting and budgeting.

In addition, studies should be conducted to consider the peculiarities of the Brazilian budget model, the political institutions and the characteristics of the Brazilian bureaucracy focusing not only on international experiences. Such an approach is necessary to avoid the adoption of the accrual model without considering the peculiarities of the Brazilian public administration.

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