

Securitization Of Public Debt: An Analysis Of Fiscal Impacts In The Context Of Financial Fragility Of The Public Sector

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Abstract:

Background: The treatment of financial instruments in accounting theory is complex and controversial due to their diversity and similarity to other categories. This complexity can lead to a complex and ambiguous accounting approach, potentially manipulating assets, liabilities, and interest rates and threatening the financial stability of companies and governments. The article explores the implications of financial derivatives, such as securitisation, in the public sector, focusing on the financial difficulties subnational entities face in Brazil. Despite its significance, the literature on creative accounting in the public sector has primarily focused on earnings management and financial assets, neglecting financial instruments' role in debt management strategies for subnational entities. The attention to regulatory standards in the public sector, particularly in Brazil, has been limited. While international standards have addressed financial instruments for the private sector, their application to the public sector still needs to be developed. The study aims to address this gap by analysing the potential impacts of financial derivatives, improving accounting procedures, supporting auditorial processes, and promoting professional development.

Methodology: The study used exploratory research to address a theoretical gap in the literature. It examined the potential effects of financial derivatives through securitisation in the public sector. The OLS model estimated the influence of securitisation on the average interest costs of Treasury bonds, specifically resulting from the securitisation of subnational government debt.

Results: The result of applying regression indicated an increase in the interest rate of bonds issued by the Union (federal government). By way of example, a 1 billion increase in the stock would raise the Average Interest Cost by 0.12% (0.0012). Therefore, securitising state debt would raise the average cost of federal public debt. This result differs from what was forecasted by banks, which anticipated a reduction in the interest rate of government-issued bonds. This result follows the literature.

Conclusion: The work concludes that securitisation can reduce the resources of the Union, states, and municipalities due to the increase in borrowing costs. It also warns that securitisation may hinder economic growth by allocating resources to current expenses. It also warns of risks to financial stability, such as higher interest payments and default risks. The text also highlights the need for fiscal responsibility, sound financial management, and transparency in securitisation. It suggests sustainable securitization should be accompanied by increased revenue generation and commitment to public infrastructure projects. (10)

Key Word: Securitisation; Public Debt; Creative Accounting; Subnational Governments; Interest Rate.

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I. Introduction

The treatment of financial instruments is one of the most complex and, at the same time, most relevant theoretical problems in accounting theory. Complex because, unless one grasps the essence of the transactions, the diversity of financial instrument types and the similarity of their characteristics to those of other categories make recognition and measurement by fair value criteria challenging and generate controversies. This management of financial assets is relevant because this complexity can give rise to creative accounting strategies that significantly alter the values of assets, liabilities, and leverage ratios, compromising the financial health of companies and governments and exposing them to risks.

Most Brazilian states and municipalities have faced cyclical financial difficulties since the Federal Constitution of 1988. In the late 1980s, with Law No. 7,976/89 enactment, there was the first significant renegotiation of state debts. Also, in the early 1990s, new financial imbalances in the accounts led the Union to refinance the internal contractual debts of the states for twenty years. At the end of the 1990s, Law No. 9,496/97

renegotiated debts that had not been previously refinanced by the Federal Government, presenting it as a measure to address the fiscal situation of subnational entities. In March 2016, the Federal Executive presented Bill No. 257/16, proposing the renegotiation of subnational entities' debts. Simultaneously, states, the Federal District, and some municipalities have been demanding a renegotiation of their debts with the Union. The treatment of financial instruments is one of the most complex and, at the same time, most relevant theoretical problems in accounting theory. Complex because, unless one grasps the essence of the transactions, the diversity of financial instrument types and the similarity of their characteristics to those of other categories make recognition and measurement by fair value criteria challenging and generate controversies. This tool is helpful because accounting can get very complicated, leading to creative strategies that significantly change the values of assets, liabilities, and leverage ratios. These changes can put companies and governments at risk and hurt their finances.

Subnational entities have presented securitisation as an alternative and more cost-effective source of financing because of their financial fragility situation, i.e., a way to reduce the cost of raising funds in the financial market to finance cash flow and limit the growth of the public debt of subnational entities within a long-term strategy (Silva Filho, 2014). Banks interested in intermediating the operation argue that public institutions could also obtain higher credit ratings than the central government, which would reduce the cost of the operation. Thus, mirroring the example of experiences in the public sector of developed countries, such a strategy appears as an attractive option for governments constrained by financial and fiscal problems (Jobst, 2006)

However, the literature has not sufficiently explored the fiscal impact and risk of securitisation on public finances. For instance, the use of derivatives for debt renegotiation increases the cost of subnational entities' debt. It can also affect the issuance of Domestic Federal Marketable Public Debt (DFMPD) securities and the interest rates demanded on these instruments. Furthermore, securitising assets such as tax receivables and royalties boosts current public revenues at the expense of future ones, potentially jeopardising the intertemporal fiscal balance. The idea that these instruments can provide a structural solution to the fiscal situation of subnational entities is questionable, especially given the ongoing trend of rising expenses.

Despite the topic's significance, the literature on creative accounting, in general, has focused more on earnings management and, when addressing financial instruments, typically concentrates on financial assets. In the public sector, few studies treat financial instruments as part of a debt management strategy for subnational entities.

The attention given to the topic of regulations is relatively recent and still needs to be increased in the case of the public sector. The international standards issued by the International Accounting Standards Board (IASB) for the private sector initially focused on disclosure, ensuring that adequate disclosure was provided regardless of the accounting method used. Subsequently, the standards evolved and addressed the topic in IAS 32 - Financial Instruments: Presentation and IAS 39 - Financial Instruments: Recognition and Measurement. In Brazil, as part of the convergence process, the standards issued by the Federal Accounting Council essentially reproduced the international standards in 2009, with amendments in 2012, in NBC TG 38 - Financial Instruments: Recognition and Measurement, NBC TG 39 - Financial Instruments: Presentation, and NBC TG 40 - Financial Instruments: Disclosure.

In the public sector, the subject was addressed in the International Public Sector Accounting Standards (IPSAS), specifically in IPSAS 28 (Financial Instruments: Presentation), IPSAS 29 (Financial Instruments: Recognition and Measurement), and IPSAS 30 (Financial Instruments: Disclosure), all issued by the International Federation of Accountants (IFAC) in 2009, essentially replicating the treatment provided by private sector standards. In Brazil, however, the NBC T-16, Brazilian Accounting Standards Applied to the Public Sector, issued by the Federal Accounting Council, has yet to embrace this topic.

The applicable federal ordinary legislation in the public sector addresses the topic superficially and merely refers to compliance with the Securities and Exchange Commission (SEC) regulations. In this regard, although it does not delve into the concept of securitisation, it ignores that it falls within the comprehensive concept of credit operation introduced by Complementary Law No. 101 of 2000, the Fiscal Responsibility Law (FRL), which, with at least ten years of anticipation, sought to provide a comprehensive accounting view to control creative accounting practices (Nunes, Nunes and Marcelino (2017).

Therefore, this work seeks to fill the theoretical gap in the literature. The objective is to analyse the possible impacts of using financial derivatives such as securitisation in the public sector, especially in the context of deteriorating financial conditions of subnational entities. It is expected that this analysis will lead to at least three significant consequences:

1. Assist in improving accounting procedures in the Federal entities (Union, states, and municipalities).
2. Support the audit conducted by the 36 courts of accounts to which these entities are subject.
3. Shed light on the need for standardisation by professional bodies.

To achieve this goal, the work is divided into eight sections. Following this brief introduction, the second section defines creative accounting, distinguishing it from fraud and earnings management, terms often used imprecisely. The third section analyses the essence of the concept of credit operation introduced by the Fiscal

Responsibility Law and some of the forms it can take. The fourth section examines securitisation, its forms, operationalisation, and the accounting and legal treatment it has received. In the fifth section, a model is presented to estimate the cost of securitising the debt of subnational entities and its impact on federal public debt. The results of this model are the subject of the sixth section. The seventh section discusses the implications of securitisation in the context of subnational entities' financial fragility. Finally, the eighth section concludes the work.

II. Creative Accounting and Fraud in the Interpretation of Standards

Creative accounting, fraud, and earnings management are often used interchangeably to describe unconventional or questionable operations.

In this paper, we will use the classification proposed by Jones (2011), in which, within the regulatory framework, there are different degrees of possible flexibility, ranging from the absence of flexibility to make choices to the flexibility to engage in creative accounting, with an intermediate stage where there is flexibility to provide a true and fair value perspective. The difference between the latter relates to the interest that guides the preparation of accounting information: fair value serves the user's interest. In contrast, creative accounting serves the interest of the entity preparing the accounting information. Fraud, on the other hand, though closer to creative accounting as it also serves the interest of the entity preparing the accounting information, differs from creative accounting as it operates outside the regulatory framework. Therefore, if the law is violated, it can be considered fraud.

As taught by Dantas et al. (2010, p.7), the concept of fair value favours principles over rules as it stipulates that in accounting:

(...) a true and fair view of the economic and financial situation of the business and its results should prevail, even over any legal and regulatory provisions. This means that even in situations where accounting standards prescribe specific records and disclosures, if a professional believes that adhering to the standard would compromise the economic substance, they should prioritize the concept of TFV (True and Fair Value) over regulatory provisions.

The most favourable aspect of fair value, which is now adopted by international accounting standards, is that the emphasis shifts from compliance with rules to focusing on the essence of transactions. Strict standards often need help to encompass all possible situations and the exceptions that must be considered.

The question that arises is whether, on the other hand, fair value could serve as a pretext for management to do as it pleases, as its inherent subjectivity could facilitate earnings management. However, it should be considered that even strict standards are not immune to creative accounting, as their very rigidity can be used to create interpretive loopholes. Thus, according to Jones' taxonomy (2011), creative accounting appears as a distortion of accounting practices that departs from fair value.

In the same vein, Niyama et al. (2015, p. 71/72) define:

Creative accounting emerges as a window opened by the choices within accounting standards, as engineering artificial profits, as a set of procedures that do not violate the rules of the game but represent a careful management of gaps in accounting law, admitted in a context of flexibility and omission of these same standards, as it operates based on accounting standards, albeit against their spirit.

This trade-off between rigidity and flexibility is a significant challenge for developing accounting standards and legislation. It is a fact that legislators create rules to be complied with, but how can we ensure such compliance when the standard is rigid, and the interpreter may seek loopholes in legal definitions or when principles are stated? The interpreter may argue that the standard does not cover the specific case. This question in conceiving a legal concept for credit operations led to an illustrative concept.

In reality, the faithful interpretation of legal or normative standards will always require a certain degree of ethics and morality to urge the interpreter to seek the logical coherence of the standard itself and its alignment with the set of other applicable standards, as well as the objectives intended with the introduction of the standard and the principles that guided the formulation of those objectives. This aspect is referred to in accounting as the primacy of substance over form and in law as teleological interpretation.

Creative Accounting and Fraud in the Interpretation of Standards

Fraud approaches the concept of creative accounting by aiming to serve the interests of those preparing the financial information rather than providing reliable information to users.

However, the difference lies in compliance with the literal interpretation of the standard, according to Jones' taxonomy (2011). According to IFAC (2009, p.157), fraud is an intentional act by those responsible for governance, employees, or third parties, involving deceit to gain unfair or illegal advantage. Thus, fraud is distinguished from error by whether the action is intentional or not.

Distortions in financial statements can arise from either fraud or error. The distinguishing factor between fraud and error is whether the underlying action resulting in the distortion of financial statements is intentional or unintentional.

Although determining intent can be difficult, non-compliance with the standard in its literal sense suggests an indication of deceit and establishes the relationship between Jones(2011)' taxonomy and IFAC's(2009) definition.

Another important distinction relates to creative accounting instead of earnings management. It must be addressed that since the private sector's objective is profit generation, creativity in corporate accounting often pertains to practices of maximising or smoothing results to improve the company's image or stabilise it to attract investors. Conversely, it may involve reducing results to lower the tax burden. In addition to the corporate objectives, earnings management can be motivated by the private interest of increasing managers' compensation when it is tied to results.

However, earnings management does not encompass all creative accounting practices but is a relevant subset. Another significant aspect of creative accounting is manipulating the financial and asset situation, especially debt and solvency indicators.

In this context, Niyama et al. (2015, p. 74) explain:

This objective can be achieved through two distinct avenues: results or financial and asset situations. The first approach focuses on maximizing results or smoothing income over the years (the well-known "smoothing income"), avoiding volatile profit trends to increase the attractiveness to potential investors. Also, within the context of results, one can choose policies aimed at sustained dividend growth or even stabilising the distribution policy to meet created expectations and pressure from shareholders and significant institutional investors. In the second avenue - financial and asset situation - the goal is to achieve this improvement by disclosing more favourable or at least more stable debt/solvency indicators, apparently reducing debt levels and leading external users to believe there is lower exposure to risk.

In the public sector, where the objective is not profit generation but the provision of goods and services to citizens, the balance sheet results should be more scrutinized, and attention should be focused on the Primary Result and debt and liquidity indicators. In a similar fashion, the objective is to enhance the management's image, either to convince citizens that it is possible to provide more goods and services and that this trajectory is sustainable over time or to gain political support from the population in elections and perpetuate their hold on power.

Creative accounting and, ultimately, fraud can omit liabilities and artificially increase cash to alter debt and liquidity financial indicators, affecting fiscal results over several periods. Some examples include recognising revenues considered atypical or extraordinary and increasing the accounts payable to achieve primary surplus targets. Engaging in credit operations holds a distinct place in this scenario since it is directly related to debt indicators. It is, therefore, the most common way for government officials to advance the benefits of expenditure and postpone its financing burden, not always transparently, to the next fiscal year, the next term, or future generations.

III. The Concept of Credit Operations in the Public Sector

In the public sector, traditional credit operations are usually carried out through a loan contract (mutual agreement) with the financial system or involve issuing a public debt security. In both cases, there is a financial commitment, a temporal mismatch, and compensation through an interest rate "r" that covers the time value of money compared to other available alternatives and the risk of non-payment.

Over time, limits and restrictions on credit operations have been established to prevent government debt from reaching high levels, jeopardizing other expenses and risking the payment of other obligations, including the debt itself. However, other financial instruments and increasingly complex operations have also been designed to circumvent the established controls.

In order to comprehensively encompass the concept of credit operations and prevent loopholes, the Fiscal Responsibility Law (FRL) defined it in an illustrative manner in Article 29, item III. It included other types in Article 29, Paragraph 1, and Articles 35 to 37.

Article 29. For this Complementary Law, the following definitions are adopted:

.....
III - credit operation: a financial commitment undertaken due to a loan, opening of credit, issuance and acceptance of securities, financed acquisition of goods, advance receipt of proceeds from the sale of goods and services, financial leasing, and other similar operations, including the use of financial derivatives;

.....
Paragraph 1. The Federation entity's assumption, recognition, or confession of debts is equated to a credit operation without prejudice to compliance with Articles 15 and 16 requirements.

.....
Article 35. Credit operations between a Federation entity, directly or through funds, autonomous agencies, foundations, or dependent state-owned companies, and another, including their entities of indirect administration, are prohibited, even in the form of novation, refinancing, or postponement of previously contracted debt.

.....
Article 37. The following are equated to credit operations and are prohibited:

I - raising funds in advance of revenue from a tax or contribution whose taxable event has not yet occurred, without prejudice to the provisions of Article 150, Paragraph 7 of the Constitution;

II - advance receipt of funds from a company in which the Government holds, directly or indirectly, the majority of voting capital, except for profits and dividends, as provided by law;

III - direct assumption of commitments, debt confession, or similar operations with suppliers of goods, merchandise, or services through the issuance, acceptance, or endorsement of credit instruments, except dependent state-owned companies;

IV - assumption of obligations, without budgetary authorisation, with suppliers for the subsequent payment of goods and services.

Article 38. The credit operation for the advance receipt of revenue is intended to address cash shortages during the fiscal year and shall comply with the requirements mentioned in Article 32 and the following

.....
The Resolution of the Federal Senate, Article 5, VI, also included in the concept of credit operations the assignment of rights and the advance receipt of royalties by prohibiting such practices about future mandates:

Article 5. States, the Federal District, and Municipalities are prohibited from:

.....
VI - regarding credits arising from the States', Municipalities', and the Federal District's mandatory governmental participation in royalties, special shares, and financial compensations resulting from the exploration of oil and natural gas, water resources for electricity generation, and other mineral resources within their respective territory, continental shelf, or exclusive economic zone:

a) assigning rights related to periods beyond the term of the head of the Executive Branch, except for capitalisation of Pension Funds or extraordinary debt amortisation with the Union;

b) pledging or raising funds as advance or prepayment, whose respective contractual obligations exceed the term of the head of the Executive Branch.

The legislative technique of presenting a list of operations with common characteristics was intended precisely to capture the accounting essence of operations and prevent controls from being circumvented by creating new names or designs. By including the mentioned list and *other similar operations*, it is said that the FRL's concept is illustrative: it includes any operation that is essentially similar to those presented. Therefore, it is a broader concept than traditional credit operations or the concept of a loan in the Civil Code (Law No. 10,406, dated January 10, 2002).

Although the primacy of essence over form cannot be considered a *strict sensu*¹ principle, item 22 of "NBC T 16.5-Registro Contábil," in the Brazilian Accounting Standards Applied to the Public Sector, establishes: *The accounting records of transactions of public sector entities must be made considering the legal, economic, and equity relationships, with the essence prevailing over the form of conflicts between them.*

It is important to recognise credit transactions by their essence so that the financial statements transparently and faithfully reflect the entity's assets. In this regard, Iudicibus (2010) highlights:

For example, suppose an entity needs financing and obtains it only by temporarily transferring legal property ownership to the financier to recover it upon debt settlement. In that case, it typically creates a sales contract with a repurchase clause after a certain period and adds a 'rental' contract. The rentals and the repurchase value are nothing more than the original debt amount and its financial charges.

Now, recording these contracts as per this formalisation does not reflect what is happening: there is no actual rent, the borrower has no interest in selling the property, and the financier has no interest in acquiring it; everything is being somewhat 'staged' for the sake of the financier's legal security. Therefore, to better represent the entity's balance sheet and income statement, showing the economic reality, the accountant needs to ensure that the economic substance of the transactions prevails over these legal forms when they do not match. Thus, the accountant needs to record a borrowing transaction with the proper recognition of interest over time and the final debt payment, not a sale, a rental, or a repurchase. Otherwise, users, especially those external to the entity, will not understand what is happening within the entity; if accounting does not portray it this way, the debt is hidden in the balance sheet, the property temporarily disappears from the balance sheet, and a non-genuine rental emerges, with no indication of financial expenses.

The Fiscal Statements Manual (FSM), edited by the National Treasury Secretariat (NTS), seeks to capture the essence of credit operations based on the characteristics of the traditional ones already mentioned:

As a rule, credit operations have at least one of the following characteristics:

¹ According to CFC Resolution No. 750/93, amended by CFC Resolution No. 1,282/10, the accounting principles are: entity, continuity, opportunity, recording at the original value, competence, and prudence.

- a) They involve the recognition, on the part of the public sector, of a liability, which is equivalent to an increase in public debt with impacts on the amount of public debt and the borrowing capacity of the entity;
- b) They presuppose the existence of a risk of non-fulfilment of obligations, which generally materialises in the form of explicit or implicit interest charges, discounts, and other financial charges, resulting in a reduction of the entity's Net Equity equivalent to an increase in the original value of the debt; and
- c) Deferral in time, since, as a rule, credit operations involve the receipt of financial resources, goods, or the provision of services, which will be offset by the incorporation of a debt to be settled in the future. (MDF, p. 606)

The analysis of species listed by the Fiscal Responsibility Law allows for the understanding that credit operations are not always carried out with a financial institution because they can occur directly with suppliers (financed acquisition of goods, financial leasing, direct assumption of commitment with a supplier, assumption of an obligation without budget authorization for payment afterwards), customers (revenue advances from the forward sale of goods and services), taxpayers (revenue advances from taxes and royalties), and controlled companies (advances from controlled company values, except for profits and dividends)."

It should also be noted that these operations do not always involve the receipt of budgetary revenue and the debiting of cash/banks, as in the traditional case. More precisely, they are represented by advances in the receipt of revenues (from the forward sale of goods and services, tax revenue, controlled company values, royalties, budgetary revenue advances) or postponements in the payment of expenses (financed acquisition of goods, financial leasing, direct assumption of commitment with a supplier, assumption of an obligation without budget authorization for payment afterwards) that result in a financial commitment. As taught in the Manual of Accounting Applied to the Public Sector, published by the National Treasury Secretariat:

It should be emphasised that credit operations do not always involve the usual credit with a financial institution with the subsequent inflow of budgetary revenue into public coffers, as is the case, for example, with the assumption, recognition, or confession of debts. (BRAZIL, 2013, p. 212)

To assist in understanding the essence of the credit operation, which requires an effort from the interpreter of the law, we will now analyse some of its species.

III.I. Mutual loan

According to the Civil Code, a mutual loan involves lending fungible things, i.e., the delivery of money or depositing it into the borrower's account. It also involves a unilateral financial commitment because it only generates an obligation for the borrower to repay what was borrowed, as the lender has already fulfilled their part by delivering the thing subject to the contract. Since the value of money changes over time, repaying it involves the payment of interest at t_2 , as well as commission and monetary correction.

Art. 586. A loan is the lending of fungible things. The borrower is obligated to return to the lender what they received in things of the same kind, quality, and quantity.

Art. 587. This loan transfers ownership of the borrowed thing to the borrower, and all risks associated with it run at their expense from the time of delivery. In this type of operation, a contract is usually signed with a financial institution.

However, credit operations can also be carried out with suppliers, customers, taxpayers, and controlled companies, and their characterisation extends beyond a physical contract. It is sufficient that there is a presumption of payment due to past practices. In this regard, the International Public Sector Accounting Standards (IPSAS 19 - Provisions, Contingent Liabilities, and Contingent Assets) recognise informal obligations that leave the entity with no realistic alternative but to settle them.

18. The following terms are used in this Standard with the specified meanings:

An informal obligation is an obligation that arises from the entity's actions in which:

- (a) through an established pattern of past practices, published policies, or sufficiently specific current statements, the entity has indicated to other parties that it will accept specific responsibilities and*
- (b) as a result, the entity creates a valid expectation in those other parties that it will fulfil those responsibilities.*

(IFAC, 2010, p. 535)

III.II. Issuance and acceptance of a bond

The issuance and acceptance of bonds were typically seen as an offering of bonds in the market, compensated by interest. The interest rate can be either explicit or implicit, in which case the interest is embedded in the discount of a fixed-rate bond.

Nevertheless, offerings only happen sometimes on the market, and the large number of direct issuances and debt-equity operations in which government debt securities are used to raise money shows that even this traditional type can have more complicated parts.

In the past, the National Treasury put money into the National Bank for Economic and Social Development (NBESD) and other public banks by selling government bonds (Resolution CNM No. 2,543/98, Circular Letter BCB 2,819/98, Circular Letter BCB 2,953/2001). These direct issuances leveraged BNDES as they increased the institution's equity, significantly increasing lending to third parties. From an equity standpoint, the asset that the government securities represent offsets the increase in the controlling entity's stake in NBESD.

The issued bonds are a liability for the Treasury because they increase the nation's debt, but they also increase the asset that the subsidiary stake represents, which is its asset.

However, this accounting record does not exempt it from budgetary accounting. According to Article 32 of the Fiscal Responsibility Law (FRL), all credit operations of all levels of government (including the federal government, as FRL is a general law) should be included in the budget. The issuance, even if direct, represents revenue from a credit operation offset by a capital expenditure-financial investment, and therefore, it should have been accounted for. Although the receipt is not in cash, there are precedents for inclusion in the budget. Roarelli, Ornelas Neto, and Brown (2014) report that these operations did not pass through the budget because there was an interpretation within the Executive branch that direct issuances were merely a patrimonial transaction that did not require budgetary authorisation.

Furthermore, the direct issuances embedded an implicit subsidy, the difference between the cost of raising funds (Selic rate) and the interest on these instruments. The omission of subsidies provided by the Union in the budget prevents the precise calculation of the primary result above the line because the subsidies were not accounted for. The operation is recorded by the Central Bank when assessing the result below the line since it burdens the gross public debt. However, the operation is not included in the net debt, which helps explain the difference between gross and net debts.

It should be noted that NBESD was not the only financial institution benefiting from direct issuances. According to Pederiva, Alves, and Rincon (2016 a, pp. 36 and 37), in 2015, the issuance of government bonds in favour of Banco do Brasil reached R\$ 1.506 million to settle a pre-existing obligation formalised in 1996. This obligation stipulated the payment of the difference between the outstanding balance on 30.11.95 of the renegotiated operation and the amount owed by the borrower on the same date, based on product equivalence. This obligation was regularised by signing a Debt Recognition and Partial Payment Contract No. 017/PGFN/CAF on 30.12.2015 between the Union and Banco do Brasil - BB.

When carried out with controlled financial institutions, all credit operations are prohibited by the FRL, article 36:

Article 36. The credit operation between a state financial institution and the entity of the Federation that controls it, as a beneficiary of the loan, is prohibited. Sole paragraph. The provisions of the main clause do not prohibit a controlled financial institution from acquiring, in the market, government debt securities to meet the investment needs of its clients or government debt securities issued by the Union for its own use.

III.III. Credit Opening

Credit opening is a credit operation in which the creditor (bank) makes disbursements available to the debtor, subject to financial compensation in favour of the creditor. Although credit opening is analogous to a loan agreement, it creates rights and obligations for both parties: the bank is responsible for providing the agreed-upon credit, and the debtor must pay interest, fees, and additional charges. Furthermore, it is of ongoing execution, aiming to cover the debtor's economic needs for a certain period. The non-utilization of the credited sum does not constitute a contractual default, as the credit remains available and can be used.

III.IV. Financed Acquisition of Goods

The financed acquisition of goods is a credit transaction in which the entity finances itself with the supplier. Essentially, the entity does not have the necessary resources to acquire an asset. It could either take out a loan or open a line of credit with a bank, but it chooses to use the supplier as an intermediary. Since this transaction involves a cost, the supplier may also obtain financing from a bank and pass on the cost of this financing to the entity. The transfer of this cost is only sometimes explicit, as it may be embedded in the price of the acquired goods. Even if the supplier chooses not to obtain financing from a bank and uses its own resources, the essence of the transaction remains the same because the use of the supplier's resources also needs to be compensated.

III.V. Advance Receipt through the Forward Sale of Goods and Services

Advance receipt through the forward sale of goods and services is a reverse credit operation compared to the financed acquisition of goods, in which the entity obtains financing from the customer. Similar to the previous case, here, the customer could also obtain financing from a bank or use its own resources and pass on the cost of this financing to the entity, including embedding the financial cost in the price of the goods sold. The interest rate is implicit because, in market conditions, the value of money in t_2 would be lower than in t_1 .

The anticipation of tax or contribution revenue is a type of credit operation in which the taxpayer advances future tax and contribution revenues to the government entity, usually in exchange for a discount, which is a discount on the operation. This anticipation is prohibited when it relates to a taxable event that has not occurred.

III.VI. Anticipation of tax or contribution revenue

The anticipation of tax or contribution revenue is a type of credit operation in which the taxpayer advances future tax and contribution revenues to the government entity, usually with a discount offered, which

serves as a discount in the operation. This anticipation is prohibited when it relates to a taxable event that has not occurred.

III.VII. Direct assumption of commitment, debt confession, or similar operation with a supplier of goods, merchandise, or services through the issuance, acceptance, or endorsement of a credit instrument

The direct assumption of commitment, debt confession, or similar operation with a supplier through issuing, accepting, or endorsing a credit instrument combines two operations described earlier: the issuance and acceptance of an instrument and the financed acquisition of goods. In this case, a credit instrument (such as a bill of exchange, promissory note, check, invoice, etc.) is used, which is not supported by the financial regulations applicable to the Direct Administration and is only used in state-owned enterprises. The Fiscal Responsibility Law prohibits this credit operation.

III.VIII. Advance of resources from a controlled company

The prohibition on advancing resources from a controlled company, except for profits and dividends by the law, aimed to prevent controlled companies, whether financial or not, from being politically used in credit operations characterised by the anticipation of revenues. The classic case was the anticipation of taxes.

For example, in 2012, the Federal Government made an advance of dividends from National Bank for Economic and Social, claiming it was its decision as the controlling entity. The Treasury issued bonds in the market, raising funds at higher rates, which were then lent to National Bank for Economic and Social at lower interest rates. The subsidy was not recorded as a primary expense. It generated a profit in the institution, which was later transferred to the Treasury through the advance of dividends, a primary revenue. Creative accounting, therefore, involves generating an artificial primary result at a significant cost to the Treasury. Although Article 37 of the Fiscal Responsibility Law exempts *profits and dividends, by the law*, this operation was not a usual dividend transfer provided for in the legislation.

III.IX. Assumption of obligation, without budgetary authorisation, with suppliers for deferred payment of goods and services (off-the-books contract)

When an entity regularly acquires a good or service, following the stages of commitment, liquidation, and payment, there may be a lapse between liquidation and payment, which is inherent to financial execution. In this case, there is sufficient budget allocation to cover the expenses corresponding to all instalments, budget credits for future periods are not committed, and the amount of the payable obligation remains unchanged, meaning there are no explicit or implicit interest charges, discounts, or other financial charges.

However, suppose the entity enters into an off-the-books contract, assuming an obligation with suppliers without budgetary authorization for deferred payment of goods and services. In that case, it is incurring an expense outside the regular financial execution and possibly doing so because it needs more resources to cover the purchase of the goods or services. In this case, the nature of the operation becomes a form of financing from the supplier who advances the physical execution with no guarantee of payment, as the expense is unauthorised, unaccounted for, and considered a crime under the law. The risk for the supplier is high, and they typically include compensation in the price charged. The operation must be disallowed and considered a prohibited credit operation if discovered. It is a form of fraud.

III.X. Budgetary Revenue Anticipation

Credit operations involving budgetary revenue anticipation are a type of credit operation in which future tax revenues are offered as collateral to obtain loans from financial institutions and are intended to address momentary cash shortages during the fiscal year. However, the term "budgetary revenue" creates an illusion that the revenue already exists, which is not true because the tax liability may not have necessarily been established. Budgetary revenue can be a mere forecast. In this case, the *guarantee* is not firm. This operation is prohibited in the last year of a leader's term.

III.XI. Assumption, recognition, and confession of debts

Assumption, recognition, and confession of debts are equivalent to credit operations under the Fiscal Responsibility Law because such operations result in the incorporation of liabilities expressly authorized by law. Essentially, a credit operation of any species listed here occurred but was not recognized in the accounting records at the appropriate time.

III.XII. Novation, refinancing, or postponement of previously contracted debt.

It should be noted that debt novation (contracting new debt to extinguish and replace the previous one) or contractual amendments, in general, constitute a new credit operation because they alter the original conditions by changing the release and payment schedules of previously contracted credit operations. This classification includes the instalment of tax debts, social contributions, and FGTS.

However, a new credit operation will not be considered if there is no consolidated net debt increase. Therefore, it is possible to conclude that the opposite situation, where the refinancing or instalment of pre-existing debts increases the consolidated net debt, is a credit operation. This determination is perfectly consistent with the concept of credit operation because if there was no increase in interest charges and thus no increase in indebtedness, there was no credit operation.

III.XIII. Similar Operations with the Use of Financial Derivatives

Using financial derivatives to commit financially involves engaging in a highly complex credit transaction. This type of transaction is included explicitly in the Fiscal Responsibility Law's list of examples.

Accounting standards regarding financial derivatives need to address the topic in the public sector. Although the MCASP (BRAZIL, 2013) deals with all other types of credit operations provided for in the Fiscal Responsibility Law, it does not address financial derivatives.

As Lopes and Lima (2001) highlighted, the standardisation process benefited from FASB studies in response to the financial crisis and began at the IASB in 2008. Thus, in the private sector, it occurred in 2009, with amendments in 2012, the issuance of NBC TG 38 - Financial Instruments: Recognition and Measurement, NBC TG 39 - Financial Instruments: Presentation, and NBC TG 40 - Financial Instruments: Disclosure. In the context of the convergence process with the International Financial Reporting Standards (IFRS), issued by the International Accounting Standards Board - IASB, Brazilian standards sought to reflect the provisions of IAS 39 - Financial Instruments: Recognition and Measurement, issued in 2012. As Lopes and Lima (2001) highlighted, the standardisation process benefited from FASB studies in response to the financial crisis and began at the IASB in 2008.

In 2009, with amendments in 2012, the Brazilian Federal Accounting Council (Conselho Federal de Contabilidade - CFC) issued standards on financial derivatives: NBC TG 38 - Financial Instruments: Recognition and Measurement, NBC TG 39 - Financial Instruments: Presentation, and NBC TG 40 - Financial Instruments: Disclosure. In the context of convergence with the International Financial Reporting Standards (IFRS), issued by the International Accounting Standards Board - IASB, Brazilian standards sought to reflect the provisions of IAS 39 - Financial Instruments: Recognition and Measurement, issued in 2012.

NBC TG 38 - Financial Instruments: Recognition and Measurement defines the concept of a derivative as follows: *A derivative is a financial instrument or other contract within the scope of this Standard (...) with all of the following three characteristics:*

(a) its value changes in response to a change in a specified interest rate, financial instrument price, commodity price, exchange rate, price index or rates, valuation or credit index, or another variable, provided that, in the case of a non-financial variable, the variable is not specific to a party to the contract (sometimes referred to as an underlying);

(b) it requires no initial net investment or an initial net investment that is smaller than would be required for other types of contracts that would be expected to have a similar response to changes in market factors and

(c) it is settled at a future date.

IV. Securitization: Concept, Types, and Applicable Rules

Securitisation in the financial derivatives market is one way to sell a group of assets or financial liabilities to a bank. The bank can then set up an Investment Fund in Credit Rights (IFCR)² or a Special Purpose Entity (SPE).

There is widespread recognition in the literature that securitisation can be used not only for debt renegotiation but also for the anticipation of public revenues, such as active debt and royalties (Peskin, 2001; Currie & Velandia-Rubiano, 2002; Meddin, 2005; Jobst, 2006; Das Et Al., 2012; And Bova et al., 2013). It should be noted that the approach in the public sector is limited to generating financial liabilities, as unlike the private sector, there are usually no financial assets of this nature in the Direct Administration. To simplify the analysis, we will assume after this that securitisation is an asset, the active debt of entities, consisting of rights to collect taxes from taxpayers.

Securitisation originated in practices of private sector companies that public companies initially adopted. The state-owned company established an Investment Fund in Credit Rights composed of invoices or receivables to be paid from selling goods and services. In the Direct Administration, the Investment Fund in Credit Rights raises funds from investors by selling shares in the capital market and, with this money, purchases credit rights, such as those related to active debt and royalties or liabilities arising from debt contracts. Investors are reimbursed when cash flows related to securitised financial assets are collected.

In both of the described cases, securitisation involves costs. For the operation of the Investment Fund in Credit Rights, which has been the preferred option for subnational governments, a financial institution is contracted to price the shares, and an administration fee is charged. Since investors are providing an advance on receivables or a debt renegotiation, the shares are traded at a discount, which tends to be higher when the operations are not well-known in the market and when economic conditions are unstable. It should be added that the shareholders assume the risk of default by the entity. In establishing an SPE, subnational governments incur various tax costs associated with the public limited company. For this reason, Fogaça (2007) clarifies that the cost of this financial operation cannot be ignored.

² It is a type of investment fund that focuses on acquiring and managing credit rights, typically in the form of receivables or debt securities.

Similar to the cases presented in the previous section, the characteristics of temporal mismatch and risk remunerated by interest (when implicit, interest may be embedded in the discount), as well as the recognition of liabilities arising from securitised debt shares, allow securitisation to be classified as a credit operation, in the category "other similar operations, including the use of financial derivatives," expressly included in the illustrative list of the Fiscal Responsibility Law (FRL).

Article 37 of the Fiscal Responsibility Law also equates credit operations and prohibits the "raising of resources in the form of anticipation of revenue from taxes or contributions whose taxable event has not yet occurred," which corresponds to the alienation of credit rights related to public revenue. In the case of active debt, however, since the taxable event has already occurred, the credit operation is not prohibited, allowing for securitisation.

Legally, the securitisation of receivables is equivalent to an assignment of credit provided for in Article 286 of Law No. 10,486/2002, called the Civil Code:

Article 286. The creditor may assign his credit if the nature of the obligation, the law, or the agreement with the debtor does not oppose it; the prohibition clause of the assignment cannot be opposed to the assignee in good faith if it does not appear in the obligation instrument.

However, securitisation is not a mere sale of assets. It represents the anticipation of revenue from taxes or contributions in cases where tax credits have already been established, and revenue has already been recognised in accounting. Suppose treating securitisation as something other than a credit operation, like anticipating revenue. In that case, ignoring the need to record liabilities in accounting and circumventing legal limits and conditions will occur.

The Federal Court of Accounts (FCA) also sees it this way. It sees the Investment Fund in Credit Rights as a credit operation subject to the Fiscal Responsibility Law and first needs permission from the National Treasury Secretariat. For example, see the precautionary measure, as per Minutes No. 48 of December 3, 2014 - Extraordinary Session:

PRECAUTIONARY MEASURE GRANTED (see full text in Annex II to this Minutes) The Plenary ratified, under the terms of § 1 of art. 276 of the Internal Regulations of this Court, the granting of the precautionary measure issued in the proceedings No. TC-043.416/2012-8, by Minister Bruno Dantas, for the Brazilian Securities and Exchange Commission to suspend the registration of the FIDC(Investment Fund in Credit Rights)-NP Dívida Ativa de Nova Iguaçu, as well as the registration of any fund that includes credit rights in its constitution that fall within the hypothesis provided for in art. 1, § 1, II, of CVM (Brazilian SEC) Instruction 444/2006, characterised as credit operations by CVM analysis, and that do not have the express authorisation of the Ministry of Finance, issued under art. 32 of the Fiscal Responsibility Law.

Supporting the above understanding, CVM(Brazilian SEC) Instruction No. 444 of December 8, 2006, which regulates the operation of Non-Standardised Credit Rights Investment Funds, provides in § 9 of its art. 7 that one of the conditions for registering Investment Fund in Credit Rights with CVM (Brazilian SEC) is the authorisation of the Ministry of Finance, under art. 32 of the Fiscal Responsibility Law, as it is a credit operation. *§ 9 In funds that make investments in credit rights referred to in item II of § 1 of art. 1 of this Instruction, or in credit rights assigned or originated by companies controlled by the public authorities, a statement about the existence of a financial commitment that characterises a credit operation must be submitted, for Law Complement No. 101, of May 4, 2000, and, in case of a positive statement, the competent authorisation of the Ministry of Finance, according to art. 32 of the mentioned Law Complement must be attached.*

Although national legislation points out the need for the operation to be preceded by a request from the entity and analysis with the respective authorisation from the National Treasury Secretariat, several subnational entities have already carried out securitisation without prior authorisation from the National Treasury Secretariat. Many regulations have been issued at the subnational level without considering national legislation, allowing general rules to be ignored. Subnational managers only sometimes understand the scope of the concept of credit operations and rely on legal opinions from legal consulting firms.

Article 38 of the Fiscal Responsibility Law establishes parameters for the execution of credit operations for the anticipation of budgetary revenue, among which:

- I - *it shall only be carried out from the tenth day of the beginning of the fiscal year;*
- II - *it must be settled, with interest and other applicable charges.*

V. Risks of Securitization

The financial crisis that started in 2007 shows how securitisation can come with unforeseen costs and significant risks. Dechow et al. (2009) describe the risks as follows:

Since businesses do not bear the total default cost when selling receivables to an SPE, there is a moral hazard risk. This event can result in adverse selection as companies with lower-quality receivables are likelier to want to sell them. When receivables are sold, the company no longer has future cash flow from accounts receivable. This action can result in risk because when demand for the underlying product of the receivables decreases, the issuer

may face cash constraints. Finally, accounting rules applicable to securitisation require the derecognition of receivables once they are transferred to the SPE. This accounting creates asymmetric information problems because the company's exposure to risk is opaque to its owners. (Dechow et al (2009, p. 1)

When a company sells its receivables, it receives cash, and any difference is recorded in the income statement as a gain or loss, allowing for result manipulation because accumulated cash flows are recorded at fair value when there is no market value as a reference. If managers use a high degree of discretion in their judgment of "fair value" and report higher gains, this can improve the perception of their current performance at the expense of the future. It is also difficult for users of accounting information to assess the reasonableness of the reported gain since they will only be known accurately in the future.

According to NBC TG 38, *Fair value is the amount for which an asset could be exchanged, or a liability settled, between knowledgeable, willing parties in an arm's length transaction.* It incorporates, among other things, the time value of money and credit risk.

In the private sector, recent events in the subprime mortgage industry illustrate this problem. Credit losses and asset write-downs recorded by central banks and securities firms related to subprime mortgages exceeded \$150 billion. Because mortgage loans are often securitised, original lenders had incentives to issue increasingly risky loans, and investors needed help to effectively control the quality of these loans.

The companies selling asset-backed securities had strong incentives to increase volume because many of the costs associated with securitisation are fixed. Rating agencies, as the entities paid by the securitisers rather than the investors, had incentives to provide high ratings and little incentive to review them later. The FBI and SEC investigated many companies for suspected accounting fraud or insider trading.

There is an intertemporal problem because it can take several years for companies (and the market) to realise the full extent of incorrect predictions. Meanwhile, managers are compensated based on profits affected by their forecasts, and their companies can obtain additional financing for lending to new customers. Executive compensation linked to results generates an incentive for earnings management.

In the public sector, treating securitisation as a credit operation in the Fiscal Responsibility Law expresses the legislator's concern about creative accounting and the risks of worsening the financial fragility of entities due to increased debt.

However, securitisation has been presented as a solution based on alienating assets and liabilities, generating immediate cash flow advantages. When an entity sells its receivables, it does so because it wants to obtain resources immediately to meet its cash needs. In the next moment, when it receives the active debt from taxpayers, it must distribute revenue with other entities and meet spending limits on education and health calculated as a proportion of revenue. If these instalments are not deducted from the value of the subordinated shares and the discount, the entity may face severe liquidity problems in the second moment. The problem tends to be even greater if securitisation is not considered a credit operation to calculate the primary result, which will reduce the need to adjust other expenses to meet fiscal targets.

Furthermore, it is difficult for users of accounting information to assess the reasonableness of the operation since its effects will only be known accurately in the future. Current standards prevent the definitive assignment of rights to the active debt, with the responsibility to collect remaining with the entity based on its constitutional competencies. Therefore, there are two types of risk:

- a) The value of the active debt may have been overestimated, and there may be frustration in payment by taxpayers;
- b) Faced with constitutional revenue-sharing requirements, education and health limits compliance, and legal challenges, the entity may face a cash shortage and fail to honour its commitment to the Investment Fund in Credit Rights.

IPSAS 29 - Financial Instruments considers the substantial transfer of risks and benefits of ownership of the financial asset as a criterion for the derecognition of financial assets, and if there is no transfer of risks, the entity will need to recognise the financial asset:

When an entity transfers a financial asset (see paragraph 20), it shall evaluate the extent to which it retains the risks and rewards of ownership of the financial asset. In that case:

(a) if the entity transfers substantially all the risks and rewards of ownership of the financial asset, the entity shall derecognise the financial asset and recognise separately any rights and obligations created or retained with the transfer as assets or liabilities;

(b) if the entity retains substantially all the risks and rewards of ownership of the financial asset, the entity shall continue to recognise the financial asset.

VI. Forecasting the Impact of Securitization on the Interest Rate of Federal Government Bonds

As interpreted solely based on Chapter XV of The General Theory, Keynesian interest rate theory relies on the quantity of money in circulation and liquidity preference. According to this view, when agents decide on

the composition of their portfolio or the portion of it to be held in the form of money, they take into account three motives:

- a) Transaction motive, where agents reserve the money needed for current transactions.
- b) Precautionary motive, where agents preserve resources to address contingencies.
- c) Speculative motive, which involves hoarding for speculative reasons, the amount of which depends on agents' forecasts regarding bond prices. Agents compare the current interest rate with the expected future interest rate to seek higher gains in the future bond market. Thus, when agents believe that interest rates will rise, they increase hoarding, and when they anticipate bond prices will fall, they reduce demand for liquidity (Nunes, (2023)).

This section proposes a model to determine the average cost of the DPMFi (Federal Public Debt) to estimate the impact of Investment Fund in Credit Rights issuances on the average cost of federal government securities. The interest rate is explained as a result of the interaction between the supply of bonds (changes in the stock) and liquidity preference, represented by M1 (currency and demand deposits), and the acquisition of assets competing with government bonds, namely inflation (which reduces M1 in real terms and also provides returns on bonds). The higher the uncertainty, the more people postpone purchases, a decision that can only be reversed with increased interest rates. The increase in M1 due to uncertainty requires increased interest rates for agents to forego liquidity. This results in an inverse relationship between interest rates and M1.

We also used future exchange rates in the estimations, which many studies have identified as an explanatory variable for bond interest rates. The depreciation of the national currency reduces bond profitability.

In summary, the interest rate results from the interaction between changes in the stock, inflation rate, exchange rate, M1, competing assets for federal government bonds, and exchange rate. The aim is to assess the cost to the Union by comparing the average debt cost resulting from securitisation with the adoption of the hypotheses listed below.

In estimating the impact of securitisation on the average interest cost of Treasury Bonds due to the securitisation of subnational government debt, Keynes' interest rate theory was employed, with the introduction of some variables while maintaining the essence of the Keynesian model, as interpreted solely based on Chapter XV of The General Theory.

The Ordinary Least Squares (OLS) method assumes a linear equation. It uses the regularity and past patterns of historical data as a basis for prediction, including inflation, liquidity index, debt stock, and risk level. The choice of OLS adhered to the principle of parsimony, which holds that the best model is the simplest one, focusing on employing a few explanatory variables. The primary advantage is that variations in past observations of explanatory variables can be considered in future projections. The behaviour of the estimated interest rate throughout the year reproduces what was observed in previous years. Therefore, the method can be used for re-estimations in subsequent years and is quickly applicable. On the other hand, the model imports forecast errors from the macroeconomic model.

Taking into account that, in Keynes' theory, the interest rate depends on the quantity of money and liquidity preference, demand functions could be represented as follows:

$$EM^T = g(M^1, Ca, Inf, r, i) \tag{1}$$

$$FM^T = g(M^1, Ca, Inf, r, i) \tag{2}$$

$$M^d = EM^d + FM^d \tag{3}$$

$$S^T = \Delta Q \tag{4}$$

By combining equations (3) and (4) and expressing it in terms of average cost, we obtain: $i = g(M^1, Ca, Inf, r, \Delta Q)$ (5)

Onde,

EM^T = Demand for household securities. M includes currency held by the public and demand deposits in commercial banks.

FM^T = Demand for bonds by companies.

r= Rate of return on assets competing with federal government securities.

The search for this asset measures the market's perception of risk in acquiring government bonds and its expectations for the future behaviour of inflation and exchange rates. Here, we strongly see the influence of Keynesian speculation motive. The risks of government bonds are associated with governments not honouring their commitments. Uncertainties in the economy and politics make it difficult to obtain higher credit ratings. Rating agencies provide an assessment of the risk involved in granting credit. The criteria for classification include current information on the economy, politics, and finances provided by the issuer and obtained through the media. Inf. = a positive coefficient between the average cost of DPMfi and inflation, meaning that when inflation increases, the interest rate is also raised or vice versa.

S^T = supply of government bonds, given by the variation in the stock of federal government bonds.

Q^T = public debt stock in period t, where t = 1, ...n. A negative sign is expected from market saturation with government bonds, showing an inverse relationship between market demand for government bonds and the supply

of bonds. In other words, when the supply of bonds increases more than their demand, the interest rate is high or vice versa.

Cam = a negative sign is expected, showing a direct relationship between the exchange and interest rates. In other words, when the exchange rate increases, the average cost is high or vice versa.

One of the assumptions of the least squares method is that errors are not autocorrelated. However, errors are expected to be autocorrelated when working with economic variables. These properties of random error mean that the least squares process may not be the most appropriate linear estimation method or may alternatively recommend corrections.

Therefore, statistical tests are conducted in the simulation on the properties of Ordinary Least Squares (OLS) and issues related to the series stationarity and cointegration vectors' existence.

In the specific case of an annual series with the abovementioned characteristics, applying this method will result in considering the predicted value for a certain period as the value observed in the previous year plus the stipulated coefficient.

Different combinations of regressions were performed, testing the variables listed above as explanatory variables. In all regressions, tests of stationarity of the explanatory variables and non-autocorrelation of errors (DW test) were performed to preserve the properties of OLS so that the regression presents the best unbiased estimator. In the estimation, some simplifying assumptions were adopted:

a) We assume that the securities derived from the securitisation of subnational government debt are similar to government bonds, meaning there is a substitution between them, albeit imperfect, because the Union guarantees the bonds issued in the securitisation process. In addition, government bonds can be fixed-rate or floating-rate, depending on the characteristics of each bond. They can be traded at a premium, discount, or par, allowing bonds with different characteristics to become substitutable. When demand for the bond is lower, it is traded at a discount, and when demand is higher, it is traded at a premium. We assume that the securitisation of subnational government debt considers securitized bonds similar to government bonds. An increase in the interest rate contributes to debt, but an increase in public debt stock can also raise the interest rate.

b) An increase in the interest rate contributes to an increase in debt, but an increase in public debt stock can also raise the interest rate.

c) Use the natural logarithm in the DPMFi stock variable to have a more linear relationship with CME, following guidance from (Wooldridge, 2006, p. 179). Another motivation was to reduce potential problems of heteroscedasticity.

d) Use the variables r and M to replace future exchange rate and inflation variables in our model because the search for an increase in demand for r reflects agents' expectations of exchange rates and inflation.

CME results from current inflation and exchange rates because they remunerate bonds, but also from expectations of future exchange rates and inflation rates. The depreciation of the national currency against the dollar would lead investors to seek assets competing with government bonds or to hold onto the currency, expecting a higher return or a return to economic stability in the future. Thus, in times of unfavourable expectations regarding the dollar or inflation, there would be an increase in investments in assets. Therefore, when agents believe interest rates will rise, they would increase hoarding or invest in assets competing with national government bonds. When they predict that bond prices will fall, demand for liquidity will decrease. It should be clarified that the bond price fluctuates depending on market conditions and expectations about interest rate behaviour. Reducing market interest rates relative to the bond's purchase rate increases the bond's price. Conversely, an increase in interest rates has the opposite effect.

The appreciation of initial estimates for interest rates results from the securitisation process. In the regression below, for example, an increase of 1 billion in the stock would raise CME by 0.12% (0.0012). Estates with more recent periods tend to show a stronger relationship between stock and interest rates. It was impossible to estimate a regression with the variables d (risk) and $M1$ simultaneously as explanatory variables, possibly because they compete as predictors of inflation and exchange rates.

Dependent Variable: CME				
Method: Least Squares				
Date: 03/01/16 Time: 15:44				
Sample: 2006:01 2015:11				
Included observations: 119				
White Heteroskedasticity-Consistent Standard Errors & Covariance				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	7,669665	7,950288	0,964703	0,3367
EST	7,110426	4,252197	1,672177	0,0972
CAMB	1,358873	0,25028	5,429408	0
M1	-13,72522	2,834953	-4,841429	0
INFL	4,5642	0,330626	13,80473	0
R-squared	0,691626	Mean dependent var		12,46025
Adjusted R-squared	0,680806	S.D. dependent var		1,744761
S.E. of regression	0,985742	Akaike info criterion		2,850263
Sum squared resid	110,7723	Schwarz criterion		2,967033
Log likelihood	-164,5907	F-statistic		63,92037
Durbin-Watson stat	0,89523	Prob(F-statistic)		0

VII. Implications of Securitization in the Context of Financial Fragility of Subnational Entities

In various countries, the public sector has turned to securitisation to facilitate investments in a context of fiscal constraints. The World Bank estimates indicate the growth of the securitised bonds market worldwide (WORLD BANK, 2013, p. 50). Jobst shares the belief that securitisation can be an alternative means of financing: *Over many years, securitisation has proved to be an expedient and highly flexible refinancing tool for corporates and public sector entities that seek a more accurate capital-market-based valuation of asset performance. After successful securitisation by public sector entities in advanced countries, sovereigns in emerging economies are gaining experience in understanding the concept of securitisation as an efficient means of asset-liability management.* Jobst (2006, p.2)

In Brazil, securitisation has been presented as an alternative to reduce the cost of raising funds in the financial market and decrease the growth of the public debt of subnational entities in the long term, consequently allowing the release of resources to finance investments and boost economic growth. This proposal is attractive to subnational entities because their investment expenses often need to be limited due to fiscal constraints.

However, securitisation is not, for several reasons, a solution to the financial resource scarcity of entities. First, sufficient domestic and external savings must finance existing asset markets. Commercialising securitised bonds could replace financing other assets already traded in the capital market without increasing savings volume to finance economic expansion.

Second, in addition to the small size of the capital market, the capacity of securitisation to leverage public investment competes with the issuance of public debt bonds, the volume of which has been increasing at the expense of the number of shares traded on stock exchanges. In particular, since 2007, the Brazilian capital market has been more geared towards financing the public sector than financing companies. While the issuance of public bonds increased to finance debt, the volume of stocks in IBOVESPA decreased from July 2007 to October 2015, according to data available at the Central Bank. In other words, with the increase in the public deficit, the government had to increase the public debt, competing with the private sector for financial resources. The private sector is disadvantaged since the government pays high-interest rates, as Treasury bonds are risk-free. Thus, securitisation complicates the Brazilian financial market by competing with conventional public bonds.

Third, in the current management model of subnational governments, the volume of current expenses is very high compared to investments, compromising economic growth. There is no guarantee that the increased flow of resources to subnational governments will be reinvested in more investments or even in balancing public accounts.

Fourth, securitisation entails high risks for the financial situation of subnational governments.

On the one hand, securitisation contributes to increasing the credit supply in the economy by allowing the transformation of less liquid assets into more liquid securities, which harks back to the situation already diagnosed by Minsky, for whom financial conditions are seen as an additional impulse, breaking the limits imposed by the budgetary constraints of capitalists. On the other hand, the fact that currency can be created endogenously weakens the financial system. An excessive expansion of public bonds in a situation of fiscal imbalance could lead to an increase in interest payments with a risk of default.

However, the securitisation of financial assets by subnational entities implies an increase in the interest rate of the Union and, therefore, federal charges that will be paid with government revenue. The stock of DPMFi depends on the nominal interest rate on public bonds. There would then be an apparent inconsistency, as states, through the securitisation process, would be financed more advantageously than the National Treasury. Coordination between the issuance of securitised bonds and those of DPMFi is also necessary because simultaneous or closely timed market placements could further increase the cost of the National Treasury debt. In

other words, the securitization process can increase public debt by raising the average cost of issuing National Treasury bonds.

Such an overcoming is possible because, in Minsky's view, the amount of resources the system can lend depends not on previous savings but on agents' expectations. The modern financial system with distributors, brokers, finance companies, and banks is responsible for creating money endogenously. It is worth noting that securitisation played a significant role in the crisis that erupted in the USA in 2008. The use of derivatives postponed the crisis but also exacerbated it. Credit allows crises to be postponed, and although the economy may continue to grow, the payment of debts incurred through additional financing makes them more violent. Minsky considers such financing speculative: the payments flow exceeds their revenue.

It can be generated endogenously, either when the public releases the currency, through the acquisition of less liquid assets, or banks, through credit expansion, or finally, by the monetary authorities, when they sanction the creation of bank money. (MINSKY, 1986)

However, this procedure tends to be stimulated by banks that seek to sell this financial innovation to their depositors. For creditor banks, the process has the main advantage of recovering the liquidity of their assets. As Minsky observes (1986, p. 232), *Bankers need to structure the loans they make so that borrowers have a good chance of meeting contractual obligations.* It should be added that the use of derivatives aligns with the interests of the financial system, as pointed out by Minsky: *A banker is always trying to find new ways to lend, new customers, and new ways to acquire funds, which is to borrow; he is always under pressure to innovate.* (MINSKY, 1986, p. 237)

Minsky thus exposes the contradictory nature of banking activity: While it is an essential element in financing investment activity and a necessary condition for the satisfactory operation of a capitalist economy, it can induce or amplify financial instability, making the economy more vulnerable to fluctuations in interest rates, exchange rates, and income, especially in situations of economic expansion when entrepreneurs' debt levels tend to increase significantly.

The Union assumes the burden of adjustment by states—unfavourable prospects for new issuance. The Union would pay a higher interest rate, and entities would sell assets at a discount. An increase in the interest rate of DPMF and postponement of expenditure. Increases the financial fragility of the Republic. Financing the fiscal deficit with government bonds could lead to higher interest rates, reducing private investment and income.

This form of financing inevitably increases interest expenses. To avoid an explosive trajectory, the government may need to increase tax collection or reduce public administration expenses in the future, although the latter is more challenging to implement.

Using financial derivatives to solve cash flow problems without creating new designs that bring greater fiscal responsibility can lead to increased expenses with a consequent reduction in economic growth and an increase in the public deficit. The collection of future revenues could burden future generations by reducing their income, a form of Ricardian Equivalence action.

To improve the financial situation, it would be vital for the states to use their resources to fulfil their obligations regarding financing basic public infrastructure projects such as transportation, energy, and healthcare while maintaining fiscal balance. This scenario is the diagnosis outlined in the work of Barro (1990) and Barro and Sala-i-Martin (1992), who emphasise that fiscal balance, public savings, and investments in infrastructure should accompany economic growth.

Securitisation would be sustainable if the entities generated more significant revenue at the end of the process. The limit for interest payments is the growth of net current revenue, as it is impossible to make larger payments than the inflow of resources from the growth of Net Current Revenue (NCR).

Notably, the recovery of the subnational public sector depends on increased tax and fee collection, which can be stimulated by creating favourable conditions for private investments. Therefore, seeking mechanisms that allow subnational entities to have a more significant share in the nation's budget with fiscal responsibility is necessary.

Understanding the concept of credit operations in light of the prevalence of substance over form has become essential for analysing public finances in Brazil. The complexity and volume of operations being carried out require institutional solid action to increase transparency and control, ensure compliance with the law, and preserve the public interest. Both creative accounting and fraud serve the interests of those who prepare accounting information rather than providing reliable information to users. The omission of liabilities and the artificial increase in cash have allowed for changes in financial indicators of indebtedness and liquidity, affecting fiscal results over a sequence of periods.

States and municipalities have resorted to the securitisation of liabilities as an alternative means of financing public expenditure, making it essential to analyse the impact on the interest rates of federal bonds in the National Treasury Secretariat, considering the similar characteristics and the guarantee of the Union. This action is an expensive and inefficient measure. It is also essential to be concerned about the excessive growth in issuing government bonds at all levels.

VIII. Conclusion

Fraud and error are two distinct concepts in financial accounting. Fraud involves intentional acts by those responsible for governance, employees, or third parties involving deceit to gain an unfair or illegal advantage. Distortions in financial statements can arise from either fraud or error, with non-compliance with the standard indicating deceit. Creative accounting, on the other hand, focuses on maximising or smoothing results to improve a company's image or attract investors. Earnings management can be motivated by the private interest in increasing managers' compensation tied to results. Creative accounting also involves manipulating financial and asset situations, particularly debt and solvency indicators. In the public sector, the objective is not profit generation but to provide goods and services to citizens, with balance sheet results scrutinised inattention focused on primary results and debt and liquidity indicators. Fraud and creative accounting can hide weaknesses and artificially raise cash to change debt and liquidity financial indicators, which can have long-lasting effects on the budget.

The work discusses credit operations in the public sector, emphasising the need to understand their economic essence and adhere to established controls. It highlights the importance of aligning economic transactions with legal forms for accurate financial statements and results. It also emphasises the need for accounting standards and fiscal responsibility laws to regulate these operations and ensure transparency and accountability.

The work concludes that securitisation can reduce the resources of the Union, states, and municipalities due to the increase in borrowing costs. It also warns that securitisation may hinder economic growth by allocating resources to current expenses. It also warns of risks to financial stability, such as higher interest payments and default risks. The text also highlights the need for fiscal responsibility, sound financial management, and transparency in securitisation. It suggests sustainable securitization should be accompanied by increased revenue generation and commitment to public infrastructure projects.

According to the Fiscal Responsibility Law, financial derivatives are credit operations, and therefore, their execution must meet specific requirements even if securitisation is accounted for as an asset sale. Opinions from the Federal Court of Accounts indicate that the Receivables Investment Fund is considered a credit operation, subject to the Fiscal Responsibility Law, and requiring prior authorisation from the National Treasury Secretariat.

In this regard, Iudicibus (2010, p.12) teaches:

If not, how can the user, especially the external one, know what actually happens? Moreover, if he does not have the correct information and comes to know this, his insecurity and doubts about the accounting information also increase. Furthermore, if he is about to grant credit or invest in this company or bank, he will require a much higher return due to the increased risk he assumes for not knowing well what is happening.

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