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Public Value Governance Indicator for Brazilian States

BELO HORIZONTE

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Public Value Governance Indicator for Brazilian States

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ATA DA DEFESA DE TESE DE DOUTORADO EM ADMINISTRAÇÃO do Senhor **GETÚLIO ALVES DE SOUZA MATOS**, REGISTRO Nº 171/2017. No dia 22 de março de 2017, às 10:00 horas, reuniu-se na Faculdade de Ciências Econômicas da Universidade Federal de Minas Gerais - UFMG, a Comissão Examinadora de Tese, indicada pelo Colegiado do Centro de Pós-Graduação e Pesquisas em Administração do CEPEAD, em 04 de março de 2017, para julgar o trabalho final intitulado **"Public Value Subnational Governance Indicator for Brazilian States"**, requisito para a obtenção do **Grau de Doutor em Administração**, linha de pesquisa: **Finanças**. Abrindo a sessão, o Senhor Presidente da Comissão, Prof. Dr. Hudson Fernandes Amaral, após dar conhecimento aos presentes o teor das Normas Regulamentares do Trabalho Final, passou a palavra ao candidato para apresentação de seu trabalho. Seguiu-se a arguição pelos examinadores com a respectiva defesa do candidato. Logo após, a Comissão se reuniu sem a presença do candidato e do público, para julgamento e expedição do seguinte resultado final:

( ) APROVAÇÃO;

(X) APROVAÇÃO CONDICIONADA A SATISFAÇÃO DAS EXIGÊNCIAS CONSTANTES NO VERSO DESTA FOLHA, NO PRAZO FIXADO PELA BANCA EXAMINADORA (NÃO SUPERIOR A 90 NOVENTA DIAS);

( ) REPROVAÇÃO.

O resultado final foi comunicado publicamente ao candidato pelo Senhor Presidente da Comissão. Nada mais havendo a tratar, o Senhor Presidente encerrou a reunião e lavrou a presente ATA, que será assinada por todos os membros participantes da Comissão Examinadora. Belo Horizonte, 22 de março de 2017.

NOMES	ASSINATURAS
Prof. Dr. Hudson Fernandes Amaral ORIENTADOR (CEPEAD/UFMG)	....
Prof. Dr. Antônio Artur de Souza (CEPEAD/UFMG)	....
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Prof. Dr. Ricardo Carneiro (Fundação João Pinheiro/MG)	....
Prof. Dr. Victor Maia Senna Delgado (Universidade Federal de Ouro Preto/MG)	....

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“The core of public finances is that some people spend other people’s money”

von Hagen, 2007, p.27

RESUMO

No transcorrer das últimas décadas, os países emergentes enfrentaram uma série de dificuldades políticas, econômicas e sociais, que fizeram com que seus cidadãos pressionassem continuamente os governos por melhores condições proporcionadas pelos entes públicos. Neste sentido, sobretudo após os movimentos de reforma do Estado, os estudos em finanças públicas no Brasil se dedicaram majoritariamente a análises de metodologias e resultados gerenciais, ou a avaliações de programas e projetos, desenvolvidos sob o prisma do *New Public Management*. No entanto, a necessidade coletiva de maior atenção à capacidade de solucionar os anseios básicos dos cidadãos requer uma retomada de conceitos anteriores e posteriores ao *New Public Management*, tais como os Modelos Clássicos, o *New Public Service* e os Modelos de Governança. Paralelamente a esta reconstrução, a definição de um Estado Fiscal consolida-se como um dos pilares do presente estudo, ao compreender o poder público com um papel constitucionalmente ativo e com atuação ampla, delimitada e descrita pelo seu orçamento. Neste cenário, a retomada da atuação do serviço público com foco no cidadão proporciona a revisão de parte das proposições frustradas pelos modelos teóricos anteriores. Para esta reorientação, o reconhecimento dos conflitos de agência entre os cidadãos e seus governantes deflagra a necessidade de redução das perdas oriundas deste embate, com algum atributo capaz de compreender igualmente todos os cidadãos de um mesmo território, sem grupos de privilégios. Neste sentido, o *Public Value* demonstra-se como a compreensão teórica mais capaz de ser efetivamente o balizador de um Indicador de Governança, a ser elaborado para os estados brasileiros com base no arcabouço legal do país, o que implica em revisitar alguns dos indicadores anteriormente elaborados. Na presente tese é demonstrada a exequibilidade de um indicador de governança para as finanças públicas estaduais no Brasil. Fundamentado unicamente no cumprimento de requisitos legais, os resultados encontrados diferem dos estudos anteriores, uma vez que encontram que a intensidade da governança não é correlacionada com a riqueza, rompendo assim o entendimento de que estados ricos tenham desempenho superior aos estados menos favorecidos. Ademais, propõe-se a adequação metodológica para outros índices governança orientados às finanças públicas.

ABSTRACT

Over the last decades, emerging countries have faced many political, economic and social challenges. In this context, citizens pressed governments of all levels for them to offer better living conditions. In this sense, especially after the state reform movements, Brazilian studies in public finance were mostly devoted to methodologies and analysis of managerial results, or even reviews of programs and policies developed under the New Public Management movement. However, the collective needs for greater attention to the ability to solve the basic concerns of citizens requires a review of previous and later concepts than the New Public Management, such as the Classic Models, the New Public Service and Governance Models. Alongside this reconstruction, the definition of a Fiscal State is analysed as one of the tenants of the present thesis, providing the comprehension of a constitutionally active governmental role, bounded and described by its budget. In this scenario, the resumption of public service experience with focus on the citizen provides the reviewing part of the propositions frustrated by previous theories. For this reorientation, the recognition of agency conflicts between citizens and their governments triggers the need to reduce losses from this clash, with some attribute that could also involve all citizens of the same territory, without any privileged groups. In this sense, Public Value brings the theoretical comprehension to be the most relevant reference for a Governance Indicator, here developed for the Brazilian states, and based on the country's legal framework. For this purpose, public value theory can provide a neutral perspective for the current studies of public governance, which implies the need for reassessment of some of the former indicators, such as the IGovP and IGEB. This thesis demonstrates the feasibility of this theoretical construction and propose a quantitative multidimensional indicator for state-level public finance in Brazil. Based exclusively on attendance of legal requirements, our results differ from the previous findings, revealing that the quality of governance is uncorrelated with the wealth, breaking the inequality assumption that the richer states perform better than the poor ones. Furthermore, we propose a methodological improvement for the public finance governance indices.

SUMMARY

1 Introduction:

1.1 Research Context

During the second half of the 20th century, countries and governments of Latin America faced several social and economic difficulties. Although this is not a new condition for most of the countries in the region, the years after the World War II gathered political, social and economic factors that led to a stronger presence of the state. After the democratic transition in Latin America, the recent-established democratic governments were pressed by their citizens to play more active roles in the economy, which comprehends social and redistributive functions in their activities. On the other hand, they were not able to raise their public spending, given their inability to raise tax levels[1] (Tanzi, 2008).

Due to a clear exposure to European influences, these countries have developed policies that protect individuals "from the cradle to the grave". Although the extension of this assistance may vary within the region, these programs usually include public pensions, public health, free public schools, subsidies to large families, unemployment compensation and support for the disabled and public housing as examples of assistance (Tanzi, 2008, p.9). In this context, the Brazilian Constitution (Brasil, 1988) is a clear case of later and faster approach to European levels of assistance, which affects both the public spending and the taxation (Tanzi, 2008, p. 9).

On the other hand, the recent pursuit for better private managerial methods, roughly applied to public services, increased the perception that the public sector staff does not have the *ethos* they once had. This can be associated to the narrow focus on performance indicators, the lack of responsiveness to the conceptions of public value and the failure to assess the impacts of the service deliverance to the communities (Blaug, Horner and Lekhi, 2006, p.26).

[1] Thorpe (1998), however, argues that some countries in the region have developed tax reforms, such as Argentina (1991), Peru, and Nicaragua (1992). However, it is important to remember that reforms do not imply raising overall tax levels. However, most of the large economies in the region, such as Brazil, Mexico, Colombia, and Chile, have not substantially increased revenues through tax reforms.

In a context of large social and economic inequalities, Brazil is currently exposed to a widespread discourse of good governance, policies and managerial models whose results do not seem to be good – at least for the governed people. However, there is still a condition that the welfare of country's citizens is linked to values of socio-economic indicators, and governments try to influence them through their spending policies, indicating the pursuit of a notion of a "public value".

This research aims to provide a new tool for state-level governments to evaluate their financial performance, and, for this purpose, "a measurement framework is required and enables politicians, managers and the public to recognise when and the extent to which such value is being created." Furthermore, it contributes to the advance of knowledge by expanding the theoretical comprehension of public value, quantitatively applied to subnational governments in Brazil. (Blaug *et al*, 2006, p.60).

1.2 Research question

This thesis analyses recent practices in public finance in Brazil and finds new means to evaluate the level of governance and the pursuit of public value, with attention to legal and political bases, steering towards the research question:

How to estimate a governance indicator using budget and financial variables in order to evaluate governmental performance by the growth in public value perceived by citizens?

1.3 Objectives

1.3.1 General Objective

To estimate and validate a financial governance indicator for subnational governments, which involves legal determinations and budgetary allocations for enhancing public value creation in Brazil.

1.3.2 Specific Objectives

In order to achieve our general objective, our specific objectives are:

I. Performing a literature review of public management, governance and finance, focusing on agency theory prescriptions, identifying the most recent contributions for public value;

II. Identifying legal determinations for evaluating subnational public finance in Brazil based on historical data of the regional needs as well as public spending patterns;

III. Creating a metric for Public Value Governance, associating requirements and performance as governance requirements for public value creation, with higher reliability and consistency;

IV. Evaluating how the Public Value Governance is perceived by citizens in Brazil.

2 Theoretical Framework

The theoretical references used in this thesis are divided in four different sections. The first one refers to the historical perspective on recent models developed on the studies of Public Management. The second topic discusses the origins of the Fiscal State, our main theoretical starting point for a Public Finance analysis. The third topic fits our purpose by discussing the fundamentals of the Agency Theory – by Jensen and Meckling (1976) – proposed in a Weberian bureaucracy, as well as its implications for public financial management and its socio-economic consequences.

The fourth topic presents the theoretical proposal for the thesis, bringing the three previous topics in one only structure, setting the theoretical baseline for a public value financial analysis.

The fifth topic makes a connection between the core concepts previously discussed and the methodology we intend to use to develop a public value governance indicator. The Brazilian Experience on Public Finance aims to shed some light into the discussion of the necessity and the purpose of establishing a new parameter for evaluating subnational governments by the average citizen's perspective and, furthermore, the criteria we will follow to accomplish this goal.

It is proper to mention that this research faces a concrete socioeconomic problem with a deductive point of view, widely different from the typically inductive methods used by most of research concerning Public Finance. Consequently, the theories embedded, the methods provided and the results achieved can be tested in different samples and time frames, as well as, *mutatis mutandis*, other countries with similar legal structure.

With closer interferences from German and English Historical Schools of Economics – as our references further reveal –, this thesis does not seek to determine any prescriptions about how or how much governments should proceed their earnings or spending. In this sense, Public Value is the central concept of this Theoretical Framework as the key point that the most recent literature faces as a relevant contribution for debate concerning public issues and, for our extension, public governance.

2.1 Public Management

The Public Management studies are often found in Organizational Theory or Economics literature and are barely referred in Finance studies. However, as this thesis establishes a cutting point between private managerial methods and traditionally discussed public service theories, it seems proper to review the most traditional theories, if and when applied to *Public Finance*.

The following sections review central points of some of the recently adopted theories, as useful for Brazilian studies of public sector. As no specific reforms are related, we expect the reader to consider that no assertions should be made in order to place right or wrong points of view, but complementary and groups of characteristics are observed according to the period under analysis.

The first model relates to the Classic Models of public administration, focused on basic topics of public financial management. After that, we discuss the New Public Management and its financial branch. Furthermore, governance models are related since its fundamentals, with former discussion of the New Public Service and Public Value theories.

2.1.1 The Classic Model

The classic model of Public Administration predicts that the government budget must be balanced and each "government unit should not overspend its appropriations" (Chan and Xiao, 2009, p.110). This attends to require more attention over the revenues, in addition to the common approach that focuses on the expenditures management. On this classical approach, one can establish the basic difference between budgetary and financial management. "Whereas the budget embodies substantive decisions – who gets what, how much and when – financial management dutifully carries out spending policies". Whereas, generally, transactions are recorded in budgetary systems by their appropriations, in financial systems they are analysed in terms of their effects on assets and liabilities, revenues and expenses, investment management and debt administration (Chan and Xiao, 2009, p.111; Mikesell, 1995).

Often observed on emerging countries, several issues are faced on a gap between theory and practice, which makes it even more difficult for Classical Public Financial Management to deal with intentional budget deficits and operational inefficiency. Specially stated in a context of legal compliance, one cannot be led to creative thinking and develop actions to achieve lower costs and increasing efficiency.

2.1.2 The New Public Management Approach

Focused on achieving the private efficiency on public sector, New Public Management - NPM briefly turns government bureaucracies into "strategic business units competing with each other, and citizens become costumers" (Chan and Xiao, 2009, p.111). In addition, the common characteristic is the use of market mechanisms and terminology, in transactions similar to those observed in the marketplace.

> "Public managers have concentrated on accountability and high performance and have sought to restructure bureaucratic agencies, redefine organizational missions, streamline agency processes, and decentralize decision making. In many cases, governments and government agencies have succeeded in privatizing previously public functions, holding top executives accountable for measuring productivity and effectiveness, and reengineering departmental systems to reflect a strengthened commitment to accountability" (Denhardt and Denhardt, 2000, p.550).

As a consequence of all the distortions this approach may cause, a government may have his managers focused not on legal requirements, but following market rules of economy and efficiency.

As described by Chan and Xiao (2009, pp.112-113), this rosy scenario enhance managers to:

> "...act like entrepreneurial businessmen, turning cost centers into revenue or profit centers. They master the concept of opportunity costs and (…) think 'outside the box' by defying conventions and offering creative solutions. Instead of following rules, they make the rules." (Chan, Xiao, 2009, pp.112-113).

Olson, Guthrie and Humphrey (1998) define the financial approach as The New Public Financial Management - NPFM, which determines that accounting principles should be used in budgeting, such as a double-entry recording and accrual accounting (instead of single-entry systems and cash budgets, respectively). Therefore, government costs serve as basis for prices for public and internal services and, as outcomes (or outputs), are often compared to benchmarks.

However, Chan and Xiao (2009, p.114) list several issues related to the NPFM, and we highlight two. The first is a reminder that governments should aim for equity instead of efficiency, economy or effectiveness as the ultimate criterion for decision-making in democracies. The second is that NPFM elevates administrative discretion, decreasing legislature power.

Bao, Wang, Larsen and Morgan (2013) relate the objectives of New Public Management as making government services more responsive and accountable by using private sector management principles and tools focused on performance measurement, competition and *customer* satisfaction.

These efforts yielded good results. Ammons and Rivenbark (2008) found that these practices enhanced better initiatives for problem solving in public sector organizations. Moynihan and Pandey (2005) and Wholey (1999) found better systems integration, while Hatry (2010) found better performance measurements.

Although these improvements were registered, Bao *et al.* (2013) highlight three issues concerning the use of business-like principles to enhance government performance.

The first problem is the nonexistence of common benchmarks across public programs, which restricts trusts and legitimacy on political institutions.

The second issue, according to Bao *et al.* (2013), is that public sector comprises fragmented structures of authority in a scenario where moving forward in a straight line towards goals and objectives is desirable.

A third critical point is related to the attempt to use administrative tools to solve problems qualified as “political in nature”. If a private market model assumes that consumers have their own utility curves, in public sector, utility is politically – or, at least collectively – decided by a government (Bao et al, 2013, p.446; Kettl, 2000; Larsen, 2008; Kelly, 1998; Lynn, 1998).

At this point, a new emerging theory takes place, named by academics and practitioners "New Public Governance", emphasizing trust-building and legitimacy characteristics that have been neglected by New Public Management approach. The New Public Governance comprehends, then, all the governmental relations – which include partnerships among public, private or non-profit institutions – focused on the common good (Bao et al, 2012; Osborne, 2008; Sullivan and Skelcher, 2002; Toonen, 1998).

2.1.3 The Governance models

Following a guideline formerly used to private companies, the work of Barnard, originally published in 1938, mentioned that the role of the manager was to motivate the contribution of those who hold resources that are required to run the business. That insight was brought to the government, which finds equilibrium when the contributions and benefits are properly attributed to stakeholders (Barnard, 1938; Chan and Xiao, 2009; Simon, 1945).

On the second half of the 20th century, governance emerged as a key challenging point for academics. The post Second World War context and the transformation of the former western welfare state required a new comprehension of *theory, practice and dilemma* of the new societal construction and its "constantly shifting and contingent nature of practical political activity" (Zumbansen, 2012; Bevir 2010, p.11).

Among different definitions for governance, when applied to public issues, it can be defined as formal and informal arrangements that shape public decision-making and how public actions are led, in a perspective of keeping constitutional values with constant changing problems, environments and actors (OECD, 2005, p.16).

The the term *Governance* is widely used by policy-makers in the attempt to improve the living conditions of the people who experience poverty and oppression. Due to its ambiguity, the concept can be easily reshaped according to the preferences of the author. In this sense, one must be aware that although it may enhance the understanding of governance, the wideness of uses can obfuscate its meaning (Peters, 2012). In its original form, *Governance* refers to "collective choices that cannot be addressed adequately by individual action", and the search for the proper means to make decisions. In this sense, Governance embeds some accountability concepts, as the actors involved to this decision-making are supposed to be held accountable for the actions to the public (Peters, 2012, p.20).

Although some self-regulated initiatives might successfully address these collective issues, such as voluntary agreements and autonomous action, this *style* of problem solving depends on special factors, such as leadership or negotiation networks. In this sense, the public sector remains the main source of public governance, at least for most Weberian-type societies (Peters, 2012; Ostrom, 2005; Lam 1998).

Public governance can be broken down in five different strands, according to Osborne (2010, p.6):

I. Socio-political governance: focused on the interactions among institutions and society, in order to comprehend the creation and implementation of public policies (Kooiman, 1999).

II. Public policy governance is concerned with how policymakers and networks can interact in the public policy process, including meta-governance instruments (Peters, 2008).

III. Administrative governance is based on the need for public administration to encompass the needs of people in the contemporary state. It is often used as a synonym for public policy implementation or public services deliverance (Salamon, 2002).

IV. Contract governance, as an immediate reflex of New Public Management, is focused on contractual relationships in deliveries of public services, not necessarily establishing good control on their objectives (Kettl, 2000).

V. Network governance searches best governance forms for public services and policy, with or without the government as a central agent (Entwistle and Martin, 2005).

Rhodes (2012), however, argues that there were three different waves of governance and that network governance, formerly cited, is the first of these waves.

Network governance is closely related to the public sector reforms that took place in the 1980's Britain and later in the 1990's Brazil, carried out with the changing nature of the state. It reduces the diversity of governance to a modernization logic that embeds institutional norms and classifications across networks. According to Rhodes (2012, p.34-35) network governance has four different faces. The first is a *modern-empiricist* description of public sector changes in the last two decades of the 20th century, given their fragmentation in the first stage of the reforms and the search for coordination in the second stage. The second face is an alternative to the inaccuracy of *responsible government* models. The third offers policy advice about how to work collaboratively. The fourth face is a prescription for increasing participation on democratic governance models.

> "But these corporate management and marketization reforms had unintended consequences. They fragmented the systems for delivering public services, creating pressures for organizations to cooperate with one another to deliver services. In other words, marketization multiplied the networks it aimed to replace. […] The government was hollowed out, swapping direct for indirect controls. Central departments were no longer either necessarily or invariably the fulcrum of a network although the government can still set the limits to network actions: after all, it still funds the services." (Rhodes, 2012, p. 35-36)

The second wave, *metagovernance,* refers to more informal modes of coordinating, in the use of negotiation, rather than directly providing services through public bureaucracies. In this sense, the state governs the institutions that will govern civil society through private sector groups or non-executive governmental agencies. For this purpose, the governmental action is given through regulations, and if the organizations do not infringe these rules they are free to do what they will. These rules, moreover, determine the directions the government steers the action for public services, by the means the organizations have to perform, such as authority and financial resources (Rhodes, 2012).

> "The proponents of metagovernance also continue to claim the state is a material object, a structure, or a social form. They draw on critical realist epistemology and such notions as "emergence" and "mechanisms" against the charge of reification. […] Of course, structure can be used as a metaphor for the way in which practices coalesces into patterns. But the metaphors have a bewitching effect and people treat them as real, reified entities. In short, critical

> realism and the analysis of metagovernance all too often rely on the reification of modernist-empiricism and first-wave governance." (Rhodes, 2012, p. 39)

The third wave, *interpretive governance*, refers to the meanings and beliefs of authors embedded in their everyday practices, informed by traditions and expressed in stories. As different actors come from different backgrounds, different dilemmas arise from the failings in governance, leading to simultaneous contest and, later, ever-changing patterns of rules in constant reforms. "In short, we have to adopt an actor-centered or bottom-up approach to explaining any pattern of rule" (Rhodes, 2012, p.40).

In this sense, Chan and Xiao mention that financial management is a critical point to the analysis of the government's ability and capacity to deliver services (and, extensively, goods, in Musgrave's definition). So, a financial manager is responsible for keeping "a score of finance-related exchanges, advise management on the terms of those exchanges, and monitor financial performance of all the parties concerned" and for watching the viability of the institutional network and its participants, including contractual performances (Chan and Xiao, 2009 p.115).

Feldman and Khademian (2002) propose an alternative view over the governance issue. In contrast to the principal-agent relations, the authors mention that the structure of the interactions between the parts are determined by constitution, statutes and practices. These relationships then determine what actions should be enabled or constrained – or, in other words, who can participate. From this point of view:

> "…the public manager's responsibility rests not only with the policy outcomes, but making visible and continuously evaluating the appropriateness of the nature and quality of the relationship structures they create and recreate through their actions." (Feldman and Khademian, 2002, p. 545)

Osborne (2010) points out that the following steps led to a New Public Governance (NPG) approach – not the best solution, but a conceptual tool for assistance and comprehension of the complex challenges faced by public managers, focused on their realities.

2.1.4 Federalism and subnational governments: a historical review on Brazilian Republican centralization

According to Spink, Rodríguez, Ward and Wilson (2008), recent developments in governance studies made the subnational governments a prominent topic for study, expanding former frontiers that made academic research the only arena for discussion. The authors argue that, as a legacy of volatility with underlying weakness in institutional structures, Brazilian democratic practices reveal tensions and pressures, which lead to *pendulum-like* shifts between centralization and decentralization. In Brazil, local autonomy – although prescribed in a federalist design – remains incipient, with the federative pact defined as an idea that emerged after the federation.

In Brazil, the first attempt to share the national power with the *provinces* was in the 1889 military revolt. After that, the constitution of 1891 recognized the dual nature of authority by establishing federalism as the national legal framework. For the first time in the country, the resources that belonged to the national government were partially shifted to the *states*.

During the *First Republic* (1889-1930), and especially after the 1891 constitution, power was balanced between the federal government and the states. However, the political dominance by rural landowners and local oligarchies from São Paulo, Minas Gerais and Rio Grande do Sul, also known as *milk and coffee bourgeoisies*, ensured that the country would be governed according to the interests of these sectors.

In the last two years of the *First Republic*, the international 1929 crisis had a deep impact in these oligarchies. Due to the refusal of President Washington Luís to provide a special economic aid to coffee and cattle sectors, a military revolt[2] deposed him, and Getúlio Vargas[3] assumed as the new President in November 1930.

Right after assuming as President, Vargas revoked the Constitution of 1891 and established a temporary government, which centralized economic and political powers in the national government by dissolving the Congress and replacing the existing governors

[2] This was formerly called the Revolution of 1930.
[3] Before he was acclaimed as the new president, Vargas was the governor of Rio Grande do Sul.

by the *interventores*. The *interventores* were directly named by the President, and governed without state or municipal legislatures, using limited financial resources given by the national government.

The temporary government that started in 1930 was coming to its end when, in 1934, president Vargas convoked a Constituent Assembly to vote his changes and establish a new constitutional framework. This Assembly extended his mandate until the elections of 1938. However, under the so-called communist threat, Vargas promoted a new state coup and proclaimed himself the dictator of the New State, or *Estado Novo*.

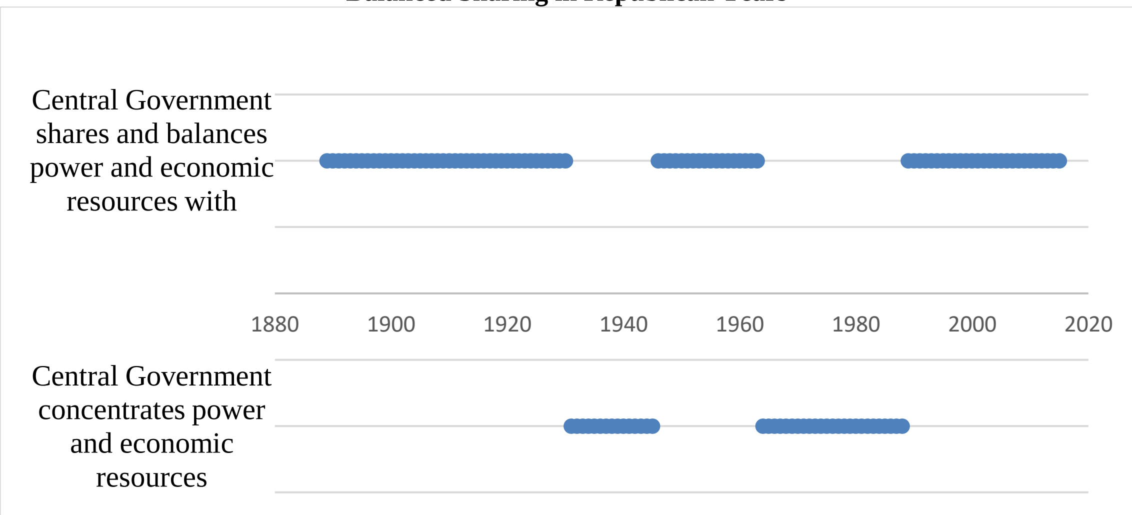
Although the New State did not bring major administrative differences from the previous era, the new mandate brought an additional degree of centralization, since Vargas decreed the formal ends of both federalism and liberal democracy in Brazil.

The *New State* lasted until October 1945, one month after the end of the World War II. After the military came back from the war with popular support, the dictator was deposed and the following eighteen years faced a more decentralized government. The new president was also the head of the assembly who wrote the 1946 Constitution, which, under the influence of the USA, made the Constitution of The United States of Brazil within the same model of the North American rule. In this sense, as all the states had the same number of legislative representatives, the large urban centres were underrepresented, making it possible for conservative forces to make their interests prevail in a federal level (Graham, Rowland, 2008, p. 71). This arrangement lasted until the early 1960’s, when, in a political crisis context and under the left-wing populist support of president João Goulart, an attempt to establish a semi-parliamentary system was rejected in a referendum. Two years later, in 1964, Brazil faced a military coup that never admitted being authoritarian or dictatorial.

The first formal act after the coup (Institutional Act Number 1), however, was to extinguish all the existing political parties. Three years after the military coup, in 1967, this and other Institutional Acts were codified into a new Constitution, amended in 1969 with the formal centralization of powers and resources in the national sphere.

Around ten years after the coup, with the government having solved issues in the time of an *economic miracle* and being back to a new economic and social crisis, lacking legitimacy – national and international – and facing increasing strikes and political dissidence, a transition period started, with high and wide demand for democracy in Brazil. In 1985, the coalition of parties (by that time they were already allowed to exist again) elected a new president, which died in the eve of assuming the position. So, his vice-president, José Sarney[4] assumed, being in charge of managing central-periphery conflicts, as well as establishing a new democratic constitution in 1988. Graham and Rowland (2008) argue that after the new democratic constitution, due to internal and external pressures, state and local governments gained importance and power compared to national levels. On the other hand, multilateral agencies[5] also exerted pressure for reforming the public sector and cutting public spending – revealing an unforeseen willingness of domestic practices intervention[6].

Figure 1 - Timeline: Brazilian Central Government Decision and Financial Concentration and Balanced Sharing in Republican Years



However, the power that the subnational states exerted after 1988 has limited veto opportunities, whilst the Federal Government holds wide jurisdictional authority. The states hold the responsibility for running public policies, but the Union easily[7] deliberates on these policies and on the federative arrangement, including changes on the federative

[4] The political position of Sarney is defined by Graham and Rowland (2008, p. 73) as “a conservative politician identified with the groups that had supported the authoritarian regime”.
[5] The authors mention International Monetary Fund and World Bank (Granham and Rowland, 2008, p. 74).
[6] After this pressure, the same attempt was performed for several times, such as in Argentina, Portugal, France and Greece.
[7] To create Constitutional Amendments, Brazilian federal governments need to have the approval of 3/5 of the two legislative houses – Senate and Parliament, of a bicameral legislature – in two voting rounds taken in the same 4-year term.

status quo. This scenario, then, by providing barely no deliberative tools for states and municipalities, made no political arrangements that could improve the power of the states, if compared to the central government, setting tight boundaries to the initiatives of subnational governments (Arretche 2012, p. 69).

According to Arretche (2012, p.84), two different types of initiatives have been systematically tackling the autonomy of subnational governments since 1988. The first is the financial issue that recentralized the amount of resources in federal level by creating new contributions that are not shared with states and municipalities or by unlinking 20% of the revenues of the federal level to the sharing obligation. The second type of initiative is the approval of laws that allowed the central level to decide state and municipal issues: competencies, taxes and minimum percentages allocation.

2.1.5 New Public Service Theory

Although it is based on different theories of democratic citizenship, the new public service theory innovates when provides a discussion of a feasible governance system, with citizens at the centre. According to Blaug *et al.* (2006, p.11):

> "The role of public managers is to help build a collective, shared notion of the public interest, not merely to aggregate individual preferences. Policies and programmes that effectively meet public needs are achieved through collective and collaborative processes that emphasize the importance of citizens over customers and people over productivity."

The New Public Service holds seven different principles which are not mutually exclusive (Denhardt and Denhardt, 2000, p.553-557):

I. To help citizens articulate and meet shared interests, instead of controlling society in any direction;

II. To build a shared notion of public interests (based on norms of justice and fairness) instead of trying to find quick solutions from individual choices;

III. Using collaborative processes and collective efforts to meet public needs in programs and public policies;

IV. Enhance dialogues about shared values instead of aggregating self-interests. Instead of responding to demands of customers, establishing relationships with and among citizens;

V. Accountability for the market, laws, community values, political norms, professional standards and citizen interests;

VI. Value people, not only productivity;

VII. Value public service and citizenship above entrepreneurship to make meaningful contributions to society.

However, this theory requires little or no coercive power from the state, as well as full consciousness and shared values from all actors to make the system work. So, as the state cannot be totally removed, a new framework emerges: Public Value.

2.1.6 A New Paradigm: Public Value

As an extension of the Governance Model, Stoker (2006) defines this paradigm as "Public Value Management", a thesis-antithesis-synthesis resulting from the previous NP(F)M, but with the comprehension of its narrow utilitarianism.

In order to have the public management principles back in action, Stoker (2006, p. 47) reminds us that public affairs are considerably different from commercial sector activities. As "governing is not the same as […] buying and selling goods in a market economy", some of the prescriptions of new public management are not appropriate to a public experience.

In order to challenge traditional public administration and new public management, Public Value is defined by Constable, Passmore and Coats (2008) as a broad approach to thinking about public administration and about continuous improvement in public services delivery. For this research, we choose to follow the original approach of Moore (1995), that accepts the value in a concept wider than the economic sense, but evaluated by what citizens consider valuable.

But this evaluation requires the public to participate on the decisions, in a representative democracy, enabled by managers that shall facilitate this procedure by developing powers and emphasizing a representative role of the elected members, gaining strength from the active involvement of the community (Blaug, Horner and Lekhi, 2006, p. 19).

As Blaug *et al.* remark, although the goal-directed models have brought an image of a rational management to government organizations, they often neglect the impacts on operational action, meaning the use of a multi-dimensional approach is required to measure performance in the public sector (Blaug *et al.*, 2006, p. 56; Modell, 2004).

Despite all the traditional methods of measuring government performance, Blaug *et al.* (2006) remind us that:

> "…the goal of public management in a public value framework is to ensure that organisations are more responsive to what the public wants and needs. […] In this respect it moves away from narrow conceptions of performance management or economic evaluations that attempt to sum the social, economic or environmental impact of an institution, towards an analysis of the capacity of organisations to deliver public value". (Blaug *et al.* 2006, p. 56)

In this sense, several attempts were made in order to establish parameters for measuring results from public sector activities. However, here are two different and complementary criticisms of performance measurement on the public sector. The first one states that governments do not measure the right variables, although they measure too many things. The second criticism points out a failure in identifying long-term issues to the strategic planning of public entities. According to this point of view, practices of performance measurement tend to be broad and unfocused, which leads to a large failure on providing public services (Atkinson, Waterhouse and Wells, 1997; Chow, Ganulin, Haddad and Williamson, 1998; Modell, 2004).

Public Value provides, more than one only definition, a "guiding concept" for theorists and practitioners in public administration. Among the many definitions it gained in the last ten years, and given the complete absence of consensus among the authors, two independent schools use it as their core study field (Meynhardt, 2009; Rutgers, 2014).

The first school has its roots in Moore's *Creating Public Value* (1995), focusing on Public Value Management. With an approach that ensures that Public Value is the next step after the New Public Management, this result-oriented school moves away from the stateversus-market perspective. On the other hand, more recently, Bozeman (2002, 2007) opposed the concept of Public Values to the dominant economic approaches for public policy analysis, focusing on and giving birth to analysis of Public Value Failure.

For our purposes, the two schools seem to have significant contributions, despite the need to look beyond the individual.

According to the author, the public values[8] of a society are those which provide normative consensus about citizen's rights and benefits, obligations to the society and the state, and the principles on which governments and policies are based (Bozeman, 2007, p. 13).

Alternatively, there are attempts to define public values by their differences to public interest, although circularity has been typically observed. In this sense, the concept of *public benefit* is also brought to discussion as a close tendency of the literature to focus on what benefits people can take from the public action (Alford and O'Flynn, 2008; Meynhardt, 2009; Rutgers, 2014).

Jørgensen and Bozeman (2007) address two core points in the attempt to define a concept for public value: what are the values referred by the authors when they write about public values; and, after that, what issues should be analysed. After a wide literature review, the authors identified two central tendencies. The first faces the recent public sector reforms as a new public management or a government reinvention. The second – an emerging trend – focuses on former public values of public administration, launching *new progressive models*, such as New Public Governance or new public service.

After obtaining a sample of 72 registered values, Jørgensen and Bozeman (2007, p. 359) grouped different concepts of *public value,* creating a structure where the citizens are in "the environment" and do not belong to the "society at large".

> "…the public sector should create or contribute to the common good and to the public interest. Critics often call these concepts insubstantial and worthless. […] no matter how diffuse the concepts may be, they do incorporate certain characteristic expectations: The public sector must not serve special interests, it must serve society as a whole; the public sector is there for everybody, it is

[8] Bozeman (2007) defines in the plural. Nabatchi (2012) highlights a difference by relating public values to Public Value Failure and public value to Public Value Management.

> not the extended arm of a particular class or group”. Jørgensen and Bozeman (2007, p. 361)

In this sense, the comprehension that the citizens should be equal parts of a system tackles the inequality component (previously discussed along this text), closely related to the core concept of *Public Value*, summarized by Jørgensen and Bozeman (2007, p. 361).

2.2 From the Greek Polis to the Rule of Law in a Fiscal State: why Public Finance rules

As a first appointment for the comprehension of public finance, it is necessary to accept that public finance, as a dimension of the resources required by the state, tend to historically change according to the activities developed (Oliveira, 2009, p. 24).

The Classical origins of what we call nowadays *the rule of law*, the comprehension of a common good, matches the early studies of public finance during the mercantilist period and develops until the most recent global discussions, such as the attempts to determine best government practices worldwide. With that assumption, the definition of the rule of law guides our framework to discuss public financial management and public budgeting, concluding with the wider definition of a *Fiscal State*.

2.2.1 From the Greek Classics to the Modern Era

The notion of publicness is as old as the Classical Greek thought. Since the fifth century BC, the Athenian *polis* orientation has passed through its heyday until the Dark Ages. A thousand years after that period, however, the problems pointed by Aristotle and Plato reveal their "timeless relevance and appeal" (Tamanaha, 2004, p. 7).

At that time, the law was the product of the activities of its citizens. However, as Greek society was categorized, the law would have different implications for each category. The rule of law, thus, means that "the law would be applied to all in accordance with its terms without regard to whom, whether aristocrat or lowly artisan, stood before it" (Tamanaha, 2004, p. 7).

The issue of *whom* to stay before the law was first addressed by Plato, who addressed the state as subject to the laws.

> "We shall assign office to a man, not because he is wealthy, nor because he possesses any other quality of the kind—such as strength or size or birth; but the ministration of the laws must be assigned, as we assert, to that man who is most obedient to the laws and wins the victory for obedience in the State,—the highest office to the first, the next to him that shows the second degree of mastery, and the rest must similarly be assigned, each in succession, to those that come next in order […]. For wherever in a State the law is subservient and

> impotent, over that State I see ruin impending; but wherever the law is lord over the magistrates, and the magistrates are servants to the law, there I descry salvation and all the blessings that the gods bestow on States" (Plato, 2014, Book IV – 715 – pp. 292-293).

Later, medieval times were marked by two distinct stages. In the first five centuries, after the collapse of the Roman Empire and the German invasions[9], vestiges of Roman Law were only remembrance of the classic tradition altogether with ecclesiastic law, since the classical ideas were majorly lost.

The rediscovery of the Aristotelian writings (twelfth century)-and the Justinian Code (thirteenth century) rose amongst the new scholars found in Bologna, Paris, Oxford and Cambridge. However, Aristotle was only made acceptable because Thomas Aquinas[10] proved that a confluence between reason and the Catholic doctrine was possible, establishing the positive written law subject to the Divine Law. Thus, as no other men could ever coerce the sovereign to pass a sentence on himself, the monarch should do it as his own will, as he was subject to the Divine Law, and any sanctions would be established by God (Tamanaha, 2004; Aquinas, 2009).

In a similar fashion to Aquinas, the Hobbesian approach recognizes that no law could bound the powers of the sovereign, for logical and sensible reasons. From the logical point of view, the law is a command from the sovereign, thus, the law could change at the sovereign's will.

Hobbesian writings assert that a government (or any other authority) was the only alternative to the anarchistic chaos, or *Natural State*, via the monopolization of the use of the coercive power avoiding the *war of all against all* (Hobbes, 1651/1998; Brennan, Buchannan, 1980). This complete freedom of exercise of the coercive power by a government[11] is called *order* (Brennan and Buchanan, 1980).

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[9] The two facts are not causal-related, but were time-related.

[10] However, 10 years before Aquinas' birth, King John had signed the Magna Carta in 1215, formally issuing both a protection to citizens from the powers of the king and a monarchial submission to the law. Critiques point out that this document, however, had minor importance until the seventeenth century, which is denied by supporters, who argue that the document was referred over times since the issuing (Tamanaha 2004).

[11] Hughes (2010, p. 90) sets an useful definition of government as the formal apparatus that can impose its will to a society, that has force at its disposal and can require compliance and coerce people through laws.

The Hobbesian approach for the coercive power can, from this point, be split in two different branches.

The first, which we nowadays name the Fiscal State, derives directly from the necessary means to fund this state, "concerning the treasure, as tributes, impositions, rents, fines, or whatsoever public revenue, to collect, receive, issue, or take the accounts thereof" (Hobbes, 1651/1998 p. 111). Brennan and Buchanan (1980, p. 11) argue that for an ordinary citizen, "the power to tax is the most familiar manifestation of the government's power to coerce" and involves the power to impose charges that are only met by transfers of economic resources to governments.

The second branch, what we call nowadays the Rule of Law, is the indistinct application of the rules for those who are ruled. Although Hobbes argued against the inclusion of the state (or the Sovereign) under the rule of law, the later evolution of this idea led, especially after Kant, to a conclusion that the State has at least the moral obligation to obey the law.

2.2.2 The Rule of Law

According to O'Donnell[12] (2004, p. 33), the rule of law can be defined as a written and publicly available law, promulgated by an authority before the events regulated by it, fairly applied by relevant state institution, judiciary inclusive. By "fairly" the author means that the law should have similar effects for equivalent cases, regardless of class, status, amount of power or other attributes of each of the parties involved, and allow each of them to be equally voiced.

Any eventual deviance from this standard might indicate the absence of the rule of law, sometimes replaced by cases constructed as *ruled by law*. Two possibilities arise from this scenario. The first is a violation of the international moral standards that countries

[12] Dicey (1961) defines the rule of law as "the absolute supremacy or predominance of regular law as opposed to the influence of arbitrary power, and exclude existence of arbitrariness, of prerogative, or even of wide discretionary authority on the part of the government. It means, again, equality before the law".

are pushed to agree and write in their constitutions, especially concerning human rights. The second is the disrespect to a fundamental notion of fairness and equity: similar cases should not have different consequences or the responsible authorities do not feel obligated to take similar decisions in future occasions (O'Donnell, 2004, p. 34).

Furthermore, Fuller broadens the definition of the Rule of Law to a moral issue, extending the effects to other demands, from which we highlight the congruence between the official action and the declared rules. In other words, "the respect of citizens and the state for the institutions that govern [...] social interactions among them" is referred as one of the branches of governance, namely the Rule of Law, aside to the Control of Corruption (Kaufmann, Kraay and Mastruzzi, 2011, p. 222).

However, some flaws are easily verifiable in Latin American democracies, especially in subnational level. From flaws in existing laws, in the relationship between citizens and state agencies, in the access to judiciary and to a fair process, to the sheer lawlessness, we highlight the failure in the application of the law.

2.2.3 A legal point of view and the power to tax

According to Brennan and Buchanan (1980, p. 3), a constitution is defined in analogy of the rules to a game and can be stated as "the set of rules, or social institutions, within which individuals operate and interact with one another. [...] they set boundaries on what activities are legitimate, as well as describing the objects of the game and how to determine who wins".

With an approach to a "Virginia School", one can assume that if people are likely to avoid anarchy, it is possible to analyse a government "as if it emerges from the voluntary consent of those who are subject to it". On the other hand, this *voluntary exchange* does not imply that people would unreservedly accept all the attitudes from the government. So, a constitution is a mechanism to restrict the power assigned to a government.

> "Those who might argue that governments should be analyzed on such a presumption of agent benevolence are denying the legitimacy of any constraints on government, including electoral ones. In this setting, there is no logical basis for a constitution". (Brennan and Buchanan, 1980, p. 8)

On the other hand, Musgrave (1999 p. 32) does not mention a *government* when he refers to this "cooperative venture among individuals". Instead, he refers to a *state*, which now has more than the only mercantilist objective of protecting a sovereign. Even more than the notion that the state is an organic unit which absorbs the individuals in a notion of wholeness, it should be faced as an association of individuals, cooperatively engaged to fairly and democratically solve problems of social coexistence.

Brennan and Buchanan (1980, p. 11) argue that for an ordinary citizen, "the power to tax is the most familiar manifestation of the government's power to coerce" and involves the power to impose charges that are only met by transfers of economic resources to governments.

However, Brennan and Buchanan (1980, p. 11) highlight the difference between a rationalization and the understanding of the power to tax; hence it does not carry any obligation to use the obtained revenue in any particular way.

2.2.4 Origins of Public Finance

The first step of the development of the state financial conditions is the mercantilist period. During the mercantilism, the wealth depended strictly on the participation of the State. For the mercantilists, the wealth of a country is provided by the profits obtained from the trade and the industry. As the merchant bourgeoisie could not provide all the conditions to this development, the State should provide these means (such as enhancing labour force, opening roads, determining national borders and strengthening internal markets). From the profits of its activities, it would obtain incomes to spend on military services and build war treasuries, and would become more powerful (Oliveira, 2009; Denis, 1974).

But the power of the State brought further resistance as the merchants realized it was free to establish taxes and make loans for non-productive purposes.

Simultaneously to the political split of the king and the State functions, given by Hobbes, Montesquieu and Locke, and the natural explanations for physical phenomena – Descartes, Galileo and others – the classic economists (Smith, Ricardo and Mill) tried to describe the world with natural laws, with a rejection of the mercantilist model that aimed at the enrichment of the state (Musgrave, 1996, p. 248; Oliveira, 2009, p. 31; Denis, 1974, p. 140).

However, externalities as market failures were mentioned by Mill (1848, p. 150) as cases in which governments “assume powers and execute functions […] which conduce to general convenience”. As Oliveira (2009, p. 33) mentions, all the goods could not be produced and offered in markets, because the signs provided by the buyers to the productive sectors could not be obtained and spread. And if this adjustment does not happen, the system will be inefficient.

Inefficiency situations are found in goods that cannot be divided for individual consumption; hence, they do not provide enough elements for costs, prices and sales amount, which makes it impossible to obtain trustable revenue estimates for producers (Oliveira, 2009, p. 33).

2.2.5 Public Financial Management

According to Chan and Xiao (2009), public financial management, in a broad sense, can be comprehended by three different scopes: budgeting, accounting and auditing. Although it is usually taken for granted, there can be several issues.

In addition, Chan and Xiao (2009, p. 110) mention that public financial management is an activity not closely related to decision-making in public policy, and receives interference from the different budgetary methods (such as Zero-Base Budgeting or PPBS – Planning, Programming and Budgeting Systems). In this conception, one should not be worried about legal aspects or changes of a budgetary system[13].

Chan and Xiao analysed public financial management according to three different theories: a classic model, the new public management, and the Barnard (1938, 1968) –

[13] In 2006, ministers of G8 decided to create a Public Financial Management code, in order to make people understand the choice of priorities and the financial management arrangements (Andrews, 2007, p. 359).

Simon (1945) governance model. In addition to these, the offer of public goods and services can also be faced by two other theories: New Public Service and Public Value (Chan and Xiao, 2009; Denhardt and Denhardt, 2000; Blaug *et al.*, 2006).

It is worth mentioning that there is no consensus the qualification of the New Public Management as a proper theory. For this thesis, however, we understand this as a *sterile dichotomy* and do not advocate for any choices. Instead, we accept the term coined by Chan and Xiao (2009) instead of a post-bureaucratic paradigm or an organizational movement with theoretical background and a mix of values (Ferris and Graddy, 1998; Gruening, 2001; Lynn Jr, 1998a).

For the Public Finance, budgets are the instruments the public sector uses to manage its incomes, expenditures and debts. Historically determined, it assumed different roles and shapes for different governments. Especially after the 1929 crisis, budgets expanded its merely scriptural role to an economic policy instrument, managed to hold economic floats, influence employment and investment rates and promote income redistribution (Oliveira, 2009, p. 84).

Decision-making on public expenditure and the necessary resources for governmental action are not merely economic, but majorly politic, revealing a conundrum of social forces developed by classes and shaping the way government will act. In other words, Oliveira (2009, p. 87) defines: "The budget is a mirror of the political life of a society, since it registers and reveals which class or part of class pays more taxes and which ones obtain more benefits from the expenditure."

Oliveira (2009, p. 91) mentions that the budget is the process that the society decides, via their representatives, the goals for public expenditure and their correspondent financial sources, and the processes for the effective control of the actions.

Guardia (1992) reveals three different issues that budgets generally have in Brazil. The first one refers to the underestimation of incomes, which, in cases of inflation, leads to increases in revenues, requiring additional spending. In a bargaining context, among executive and legislative powers, this "new" spending will not follow the original proportion of the budgetary law, which affects objectives and the execution of public policies.

The second issue relates the poor mechanisms to discuss and create the budgetary proposition. According to Guardia (1992), procedures to define priorities, evaluate spending, efficiency and effectiveness and the nonexistence of budget structures still exist.

The third issue is the lack of legislative will to follow and improve the budgetary rules, due to their individual interests. With better mechanisms and better budgets, the individual politicians' allocations are politically steady, and their clientelism remains alive (Guardia, 1992).

Even with these issues, budgets still play a core role for economic steadiness and income redistribution. Therefore, several studies were highlighted and developed focusing on public spending (Oliveira, 2009, p. 121).

Public budgeting systems, overall, should serve to: "insure fiscal discipline, control, responsibility and fiscal sustainability" (Mikesell and Mullins, 2011, p. 2); insure that programs with greatest public returns receive resources; enhance the most efficient use of resources in each program; and provide information about programs and finance to the public.

According to Mikesell and Mullins (2011, p. 4) the budgetary process lies at the heart of politics, despite its common enactment role for political reasons. Therefore, as the bridge between technical and political aspects of budgeting systems are not well defined, it is convenient to establish, as a starting point, the fact that the public sector did not change the purpose and the function of the budget in the last decades.

Although some reforms were taken worldwide during the last half century, they did not set a clear definition among the objectives defined by Mikesell and Mullins (2011). According to the authors, political will and motivation are *sine qua non* conditions to obtain budgeting and financial management innovations and to achieve the desired results for these changes. Without these conditions, innovation will be – and has been – no other way than *futile*, since it only represents technical elements of the process, without dealing with "economic and political incentives, actors, processes, and institutions that permeate, facilitate and constrain the budgeting and governance function". Moreover, permanent attention and re-evaluation are required.

2.2.6 Public spending

Recent years registered a constant growth in public spending worldwide. At the same time, governments were faced with a broader demand for new and better public services, which made this fact was widely studied from different theoretical perspectives (Tanzi and Schuknecht, 2000).

The first perspective uses empirical data to reveal a growing trend without comprehending the different forces behind the budgets and the factors that determine allocative decisions. Here are highlighted the classics works of Wagner (1883) and Peacock and Wiseman (1961).

Wagner (1883) analysed industrialized countries and realized that the public sector is more likely to grow faster than the wealth level. Peacock and Wiseman (1961) expanded the formerly described theory by finding a limit for the public expenditure, on a tax limit determined by the population of an economy. In special cases, like wartime, economic crisis or natural catastrophes, people are more likely to accept increases in taxesdue to these spendings. After these taxes become efficient, people tend to accept higher taxes permanently.

The second perspective is concerned with how market failures can influence governments and how they should behave in order to correct these failures.

The third perspective gathers both neoliberal and Marxists, and focuses on how different groups shaping the spending on a budget, with different objectives and actions, and on the reflexes for the governmental wealth.

2.2.7 Public Expenditure Management

According to Allen, Schiavo-Campo and Garrity (2004, p. 2), Public Expenditure Management comprehends all the steps of a budgetary process, including arrangements, legal and organizational frameworks in order to achieve fiscal discipline, allocate resources according to policy priorities and, therefore, provide efficient and effective deliverance of public services.

Allen *et al.* (2004, p. 2) establish a difference between *public financial management* and *public expenditure management*. The first concept is said to be narrower, related only to the downstream phase of the budget cycle – execution, accounting, controlling, reporting, monitoring and evaluating procedures. Thus, *public expenditure* also carries the upstream part of the budgetary process, with preparation and programming steps.

> "No single measure applies to all services—nutrition programs for mothers and children, safe highways, tax collection, prevention of environmental degradation, and so on yield radically different returns and come in different service units(…)[.] While we do have measures of the work that government agencies do, of the way that they do that work, and of the number of workers who do that work, we lack measures of the results of that work and how those results contribute to the common welfare. The desire for such a measuring stick has, in some ways, been the holy grail of budgeting for nearly a century." Allen *et al.* (2004, p. 2)

Tanzi and Schuknecht (2000) found little evidence of any relationship between the rates of public spending in GDP and desired – or expected – changes in socio-economic indicators. For this analysis, using a database composed by 19 developed economies, *large government* countries did not perform better than the governments that kept lower levels of public use of the GDP. However, it is worth highlighting that the countries that better performed on increases in the Human Development Index have decreased their rates of public participation on GDP. Nonetheless, the authors seem to guide to a "one-size-fits-all" solution, with both positive and normative attempts to establish an optimal rate around 35% of GDP.

Although Tanzi (2008, p. 12) simplifies the question for Latin American countries as "the classic situation of a customer in a restaurant who complains about small portions and bad food", he points to several questions that concern the greater need for a public sector intervention and chronicle inefficiency in Latin American public sectors.

According to a recent study (OECD, 2007), Latin American expenditure on public education has a distortional component because of its allocative problem. Primary education helps almost everyone – in every social condition – and helps even more the poorer, as the richest are more likely to educate their children in private schools. As a result, Brazil dedicates 26% of its resources of primary education to the poorer 20% of the children, and 8% for the richest 20% of the children.

On the other hand, higher levels of education require a spending share allocated to the richest. In this sense, Brazil allocates 76% of its tertiary educational resources on the richest 20% of the people, against 3% spent on tertiary education for the poorer 20% (OECD, 2007).

Tanzi (2008) also points to another core question concerning the labour force of developing countries. A typical mistake, according to the author, is to protect those who have or had formal job positions and completely neglect the ones who work and worked in the informal economy and are far more likely to be on poverty conditions.

Lustig, Pessino and Scott (2014) analysed national *social spending*, subsidies and taxes accomplishing poverty reduction and redistribution for countries in Latin America. For social spending, they used categories as education and health, with their counterparts of direct or indirect taxes and transfers.

In this sense, this thesis aims to dedicate closer attention to one country, and, from its inner differences, to establish a parameter for evaluation.

2.2.8 The Fiscal State

Any attempts to measure economic and social effects of the fiscal policy should consider: the mechanisms the state uses to obtain resources; the force of the government-governed relationship – as the people provide the state the power to tax –; and the principles that guide the loss distribution among taxpayers and for the whole society (Oliveira, 2009, p. 81; Brennan and Buchanan, 1980).

If a government already matches these conditions, it is valid to consider three different functions of the state (Musgrave, 1959).

The first branch refers to the *macroeconomic stabilization*, which is detailed by Matias-Pereira (2009) as keeping high employment and economic growth rates, low inflation rates and equilibrium in the balance of payments.

The second, *distributive role*, aims to promote adjustments in income distribution, since Pareto[14] efficiency does not require – and does not produce – socially fair conditions.

Resource allocation is the third branch, promoting adjustments of resources allocations, especially covering market failures for negative externalities, but also providing public and merit goods.

Public goods can be characterized by their non-rivalry and non-excludability. Thus, with no means for determining their prices or for charging people for their use, they are not offered by the private sector. Merit goods can be shared and are also excludable for non-payers, but require regulation. However, it is hard to balance social demands and the state limited resources, which requires an extensive and continuous analysis.

2.2.9 Considerations on Fiscal Federalism and the reasons for a state-level analysis

Sorens (2014, p. 355-356) defined the phenomenon of Fiscal Federalism as a cluster of institutions that hold politically autonomous sub-central governments which fund their programs and enjoy some economic policy-making authority. Thus, a *fiscal federation* "is more decentralized the greater the policy and the fiscal autonomy enjoyed by the jurisdictions".

In a common definition, Tanzi (2008b) calls *fiscal decentralization* a decrease of the role of the central government simultaneous to the increase of the lower levels of government in order to allow citizens to better control distant political leaders.

Sorens (2014) also argues that in a federal system some subnational governments may offer services only for its residents. If we consider that the benefits on welfare may induce migration, regional governments may under-provide services in order to keep taxes low, as long as voters reward politicians for that. This condition, *Pareto-inferior fiscal federalism*, might result in lower government consumption, social transfers, social

[14] Pareto (1916) denies the applicability of marginalist economic analysis to the public sector.

spending and investment. At the same time, central government grants to lower-level governments supply the welfare-improving spending.

This condition was recently verified by Cai and Treisman (2004), who argue that, for developing countries, interregional competition for capital corrodes the capacity of the central government by decreasing revenues, increasing tax evasion and political conflict over distribution of revenues and regulation.

This second generation of fiscal federalism, as defined by Weingast (2014), however, deserves an extensive discussion of its fundamentals and consequence. However, we believe that, for this thesis, the main topics concerning the issues of fiscal federalism in Brazil are budget, financial and social data. As a strict federalism analysis is not the main topic of our discussion, we believe that this thesis belongs to this *new* generation of studies that face the aspects of subnational governments and the relationships among them in the presence of the same central government.

De Mello (2003) states that subnational governments play a central role in the implementation of public policies that seek social and human development, hence these government units are closer to the beneficiaries. Although central governments typically hold the financial provision, the fiscal role of subnational units is more likely to attend to the allocative function and its efficiency requirements.

Moreover, Yilmaz, Vaillancourt and Dafflon (2012) bring more details concerning the federalism issues within the Financial State construction by Musgrave.

The first branch, *Macroeconomic Stabilization*, relies its basic responsibility under the central government sphere. The main tools used for this task are fiscal and monetary policies. In order to keep fiscal policy tools in federal level, three basic arguments arise. The first is that local economies are open, and, for this reason, it is less likely that local efforts for stabilization would be fruitful in local arena. The second argument, which is due to the first, is that local governments would expect other local governments to determine policies that would spill over in their favour. The third is that local deficits and debts limits might be appropriate if financial markets do not ensure fiscal discipline and accountability (Yilmaz *et al*, 2012).

Central governments, however, should lead income *redistribution*, as we assume that people are allowed to move between subnational entities and differences on tax rates and generous policies would incentivise people to move – in spite of the costs associated with this migration – or deflagrate several types of social segregation.

At last, *efficient allocation* is the main reason for the coexistence of both national and subnational roles according to the three branches of the State, as given by Musgrave (1959) and Oates (1972). As examples, court systems and public health have national effects, whilst public lighting and water distribution have local effects. Within the same function, one can realize different responsibilities for the government levels, such as, in education systems, teachers are hired by local governments and the curricula are made by central governments.

Oates (1972) defines criteria for sharing the responsibilities across the different levels: economies of scale, heterogeneity of preferences, presence of externalities and competition.

In order to provide goods and services not produced by the private sector, governments have three mechanisms: functional spending and budgeting, regulations and revenue losses.

"Each type of government should be assigned taxes that finance the costs of the benefits derived from the services delivered by that governmental unit." (Yilmaz *et al.*, 2012, p. 113)

> "…subnational governments must have enough own revenues to finance the services they provide. Even if such subnational governments rely on grants from a central government, if the grants are determined in an objective way and are guaranteed by the constitution or by long-standing legislation, they may be considered to be own revenues at least in the short term" (Yilmaz *et al.*, 2012, p. 114).

2.3 Agency Theory

In the third section of this Theoretical Reference, we focus on Agency Theory principles that match public sector major needs and goals. The fundamentals of the Agency Theory and its main consequences for public sector analysis were reviewed by Jensen and Meckling in 1976.

This choice of analysis is adopted for this thesis because it reveals the assumption of control and ownership differences and also comprehends the core concepts of what is called *Weberian asymmetry* (Miller, 2005).

Furthermore, we highlight several topics that might be considered for the development of a public-sector governance indicator concerned with public auditing and participating issues and based on the collective action. At last, main accountability topics and public value governance are related to this thesis purpose, always considering the relationships between the agency costs and the fiscal state, previously referred.

2.3.1 The Fundamentals

An agency relationship is defined as a contract among one or more people – named principal(s) that engages another person, an agent, to perform service that involves delegating some kind of *decision making authority* to the latter (Jensen and Meckling 1976). According to the authors, if both parties want to maximize their utility curves, it is plausible that the agent will not always perform to reach the principal's interests.

> "However, it is generally impossible for the principal or the agent at zero cost to ensure that the agent will make optimal decisions from the principal's viewpoint. In most agency relationships the principal and the agent will incur positive monitoring and bonding costs (…), and in addition there will be some divergence between the agent's decisions and those decisions which would maximize the welfare of the principal." (Jensen and Meckling 1976, p. 5)

Usually referred in corporate finance studies, agency costs can be found in any situations that involve two or more parts, even when a principal-agent relationship is not clear (Jensen and Meckling 1976, p. 6).

Brought to public service, the principal-agent theory, as mentioned by Blaug, Horner and Lekhi (2006), faces governance as the means that simultaneously constraint and enable the actions of public managers through constitutional powers (oversight, appointment, budgeting and legislation).

Another perspective concerning governance on public finance assumes that budgeting institutions strengthen the accountability of the political system. This way, it enhances the control of the principal-agent problem of public finances. Eventually, expenditures are hidden in off-budget funds or somehow removed from democratic control. In addition, it is possible to relate a tension between the legal obligation and a management tool, as the proper use of a budget (von Hagen, 2007, p. 37).

> "Emphasizing the use of the budget for making decisions on and implementing political strategies and developing medium-term economic plans creates opportunities for voters to compare the government's performance with its past intentions". (von Hagen, 2007, p. 37)

Political accountability finds an important element on budgeting transparency, since it provides a greater comprehension on fiscal plans to citizens and enables a comparison between the current performance – with numerical targets and objective parameters – and the past plans and intentions (von Hagen, 2007, p. 37).

However, Olson (1971, pp. 6-7) argue that "the state is expected to further the common interests of its citizens", as they have a common interest of a good government, and the existing agency costs depend on human capacity of regulating the contracts. In this approach, the budgeting process is defined as a *Fiscal Contract* by Von Hagen (2007), which aims to be effective by the settlement of fiscal targets and significant punishments for defectors.

In parallel to the contractual approach, the delegation "relies on hierarchical structures within the executive and between the executive and the legislature" (Von Hagen, 2007, p. 44), and is more likely to occur in single-party electoral systems.

If a governance condition of an organisation, such as conceived by Jensen and Meckling (1976), is a "one share, one vote" ownership structure, we can expand the scope of this relationship to governments – at least the ones established under democratic constitutions. Therefore, it is possible to try to reach improvements in good fiscal performance with or without help of external agents, such as International Monetary Fund or European Monetary Union.

Stiglitz (2012, p. 171) highlights that, for most people, democracy is founded in an “one person, one vote” principle. And if one hundred percent of people count for decisions, political and economic outcomes should reflect the view of an independent average person – or citizen.

2.3.2 Developing a Governance Indicator for the Public Sector

Hans-Werner Sinn relates to Buchanan’s work in public finance as one to “use positive models of economic behavior with the ultimate goal of giving policy advice” (Buchanan and Musgrave, 1999, p. 9). But, in a wider comprehension over the theme, Musgrave relates that:

> “…decision making in fiscal economics should be seen in this broader context of social structure and not in simple analogy to individuals, engaged in maximizing their self-interests in the markets.” (Buchanan and Musgrave, 1999, p. 32).

In this context, Musgrave describes the “nature of the fiscal state”, which must be seen as “an association of individuals, engaged in a cooperative venture, formed to resolve problems of social coexistence and to do so in a democratic and fair fashion”, as a part of a multifaceted socioeconomic order (Buchanan and Musgrave, 1999, p. 31).

Public policy enters as a valid and natural means of addressing a different set of problems. In this meaning, the view of fiscal economics that is only concerned with Pareto optimality neglects main components of social coexistence, which leads to failures in normative and positive grounds.

In this sense, Sinn relates constraints to governments and governance as a fundamental part of any governmental improves or reforms, which includes tax reforms (Buchanan and Musgrave, 1999 p. 9).

In this point, Buchanan and Musgrave are said to disagree, hence Buchanan affirms that Musgrave, in a strongly traditional European position, trusts politicians. On the other hand, his position is to distrust politicians, in a sense that constitutions are needed to constrain them (Buchanan and Musgrave, 1999 p. 88).

Chian and Xiao (2009, p. 110) mention two basic rules for good financial public management. According to the first, a government should balance its budget. In Brazil, this principle is also a legal requirement, established by Complementary Law n. 101, from the year 2000 (Brasil, 2000).

Schiavo-Campo (2007, p. 54) states that good governance rests in four tenets:

I. Accountability;

II. Transparency;

III. Predictability;

IV. Participation.

2.3.3 Public Auditing and Citizen Participation: Collective Action

Widely discussed by Olson (1971), a definition of a collective action was also used by Stiglitz (2012), who refers to it as a requirement for a modern society that demands investments in public goods.

The author points out that in the United States – and Brazilian conditions are not different – failure in making public investments in critical areas were recently observed, such as basic education and basic research, as a natural consequence of a “lopsided wealth distribution in society” (Stiglitz, 2012, p. 117).

In a divided society, in terms of wealth, the richest people are more reluctant to spend – directly or via government – their money on providing solutions for common needs, since they can buy the solutions by themselves.

In addition, the wealthier are likely to be worried about a strong government equipped with enough power to correct social imbalances by taking some of their wealth to use in public investments aiming common goods – or even directly helping the poorer.

Nevertheless, the collective action – and by extension interests – revealed by government preferences is being quite suppressed in developing countries. The loss of economic sovereignty through institutional arrangements typically use regulatory and macroeconomic perspectives that follow the interests of a few against the interests of a majority. As the most recent example, the 2011 Greek arrangements in the European Union affected minimum wage, the annual budgets and the health sector financing. This approach seems to be closer to a *one-dollar-one-vote* experience than a *one-person-one-vote* logic.

Haveman (1972) reminds that beyond all economic explanations concerning the collective action and the market failures, ethics arise as a social denial of a market system that unfairly treats the unqualified or poor.

According to this approach, the Collective Action fits our proposal better than the Public Choice, since it does not require a "rational agent", with predictable homogeneous group behaviour for a model fitting political and economic sciences (Buchanan, Tullock, 1962; Olson, 1971). In order to avoid this conceptual disagreement, it is useful to follow the advices provided by Musgrave (1996, p. 256), who considers the formation of the social forces and its interest groups, instead of considering individual agents.

2.3.4 Accountability

Healey (1995, p. 4) associates the concepts of governance and accountability by providing the latter the definition of "holding individuals and organisations responsible for their actions and performance" applied to each and single officer that manages political affairs or public resources. In a similar way, accountability is referred as a responsibility for the decisions that are taken in the name of the public and "conceptualized as a mechanism for enforcing control over public organizations and programs, but it is also a means of guiding the improvement of programs" (Peters, 2010, p. 43).

In shorter definitions, Przeworski (1999) refers to accountability as a class of principal agent relation between citizens and governments, and Gailmard (2012) defines the capacity of principals to evaluate the performance of their agents.

This accountable obligation can be related in terms of the “political accountability” – the one that may be exercised by politicians to the people – or “administrative accountability” – of public administration to the people *and* to the political leadership.

Political accountability can also be seen as a metric for the responsibility from the governors to the governed, as the latter try to hold the first ones into account (Healey, 1995; Hyden and Bratton, 1992; Lonsdale, 1986).

With a main focus on public expenditure, Healey (1995) proposes the nine criteria for analysis of accountability listed below and highlights that an accountable management of public expenditure requires a balance between politic responsiveness and public responsibility:

I. The scope which system allows for peaceful change in political leadership or in policy agenda, including competition for power-holding and accountability for former performance;

II. How balanced is the representation of different social interests in political leadership;

III. Responsiveness of representatives to public interests and pressures;

IV. Effective mechanisms of civil interests’ consultations and decentralization of decision-making processes;

V. Degrees of transparency and openness in public expenditure and allowance for public intervention;

VI. Opportunity for free critical public debate over policy and expenditure;

VII. The extent which governments evaluate their performance and how public expenditure reflects intentions;

VIII. Nature and effectiveness of checks and balances;

IX. Degree of administrative accountability, with neutrality of civil services and criteria for political executives.

Stiglitz (2012, pp. 218-219) reminds us that there are markets failure just as there are government failures, and they can hold a system of checks and balances and complement each other. In order not to fall on the right-or-left political discussion, we shall not qualify government or private failures as anomalies, but try to identify the roles of policies as an attempt to play their general roles, serving their main *shareholders*, the citizens.

To some extent, these conceptions can be synonymous of “answerability, responsibility and liability”, also carrying components of a good governance that are involved with decisions and acts of management. Transparency can also be related to this point since its historical beginning in the United States as the possibility to “see, reflect and communicate on what is being done” of people, by people and for people (Sætnan, Lomell and Hammer, 2011, p. 10; Lincoln, 1863).

2.4 Research core proposal: Public Value Governance Indicator

The last topic of the Theoretical Framework aims to bring all the previous concepts into a single structure. With this construct in hands, we are able to understand how the Governance Indicator will be structured, the reasons for its development and the former experiences from government performance general measures.

2.4.1 Managing the Use of Numbers in Public Management

Although this subtitle may sound redundant or obvious, some reflection seems proper when we try to estimate a measurement standard that would enhance a perception over the public. The mainstream overview on numbers pushes the perspective that statistics and secondary data embed a straightforward nonparticipant point of view. However, all knowledge is produced from a fragmentary and personal point of view, which determines, for instance, what to count and not to count (Sætnan, Lomell and Hammer, 2011).

Furthermore, if and when statistics or any accounting tools are used for social sciences, different forms and forums make analysis susceptible to counterstatements and permanent tests. They will trial the power of the assumptions provided as well as the wisdom of using or not using them, even more than the knowledge of the tools or when to use these techniques (Sætnan, Lomell and Hammer, 2011).

> "Forms of government, concepts of citizenship, and statistical practices closely interact like chips of colored glass in a kaleidoscope, constantly nudging one another and creating new colors where they meet. In this interaction, statistics are not merely free-floating elements, but also play a role like kaleidoscope mirrors, reflecting and linking the shifting relationships of the elements." (Sætnan, Lomell and Hammer, 2011, p. 2)

But:

> "And of course, in the modern democratic State, the State and its citizens also use these statistical mirrors to peer into as self-reflecting actors, learning from reflected policy results and adjusting policies to perfect their mutual relationships according to current values and standards." (Sætnan, Lomell and Hammer, 2011, p. 2)

However, Sætnan, Lomell and Hammer (2011, p. 10) remind us that the government is way more than a context for statistical and accounting practices, but a co-construction of a production of standardized knowledge and the attempts to enhance accountability, manageability and governability.

2.4.2 Considerations on Public Value and a Governance Indicator

In our previous topics, theoretical aspects concerning Agency Theory as appointed by Jensen and Meckling (1976) were recalled. However, the assumption that citizens can be summarized as *costumers* of public services, most of them written under the New Public Management approach, deserves more attention. The assignment over the citizen and the miscomprehension of its role as *shareholder* implies neglecting the most fundamental conditions of a democracy: one-person-one-vote, also referred in ownership structure studies as one-share-one-vote.

That assumption implies a contractual state, in which constitutions – and, by extension, national laws – determine the role and the rights of the public sector. In Brazil, the National Constitution faces core assumptions for the state: National Defense, Health and Education, and other enactments establishing minimum allocation spending rates in these *roles* (Brasil, 1988).

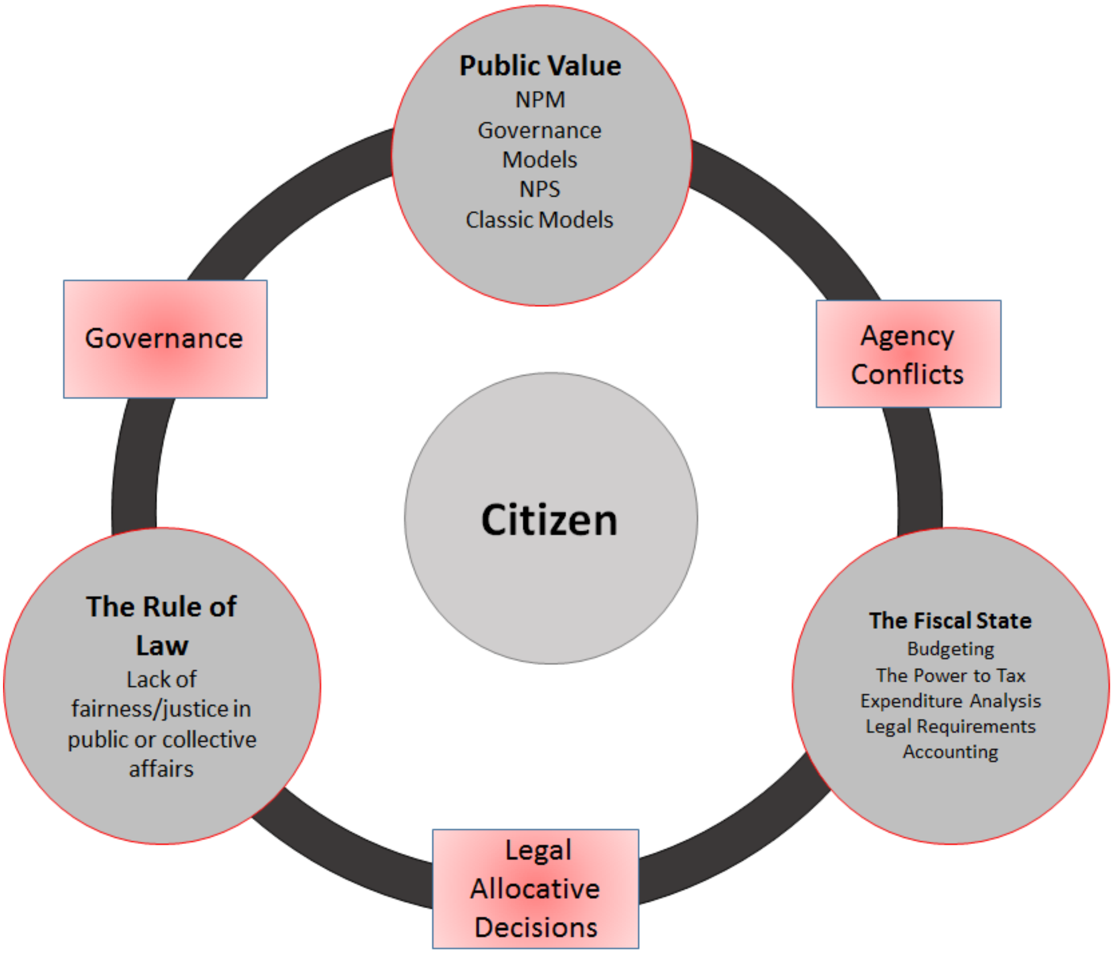
Using the only common point, previously referred, that Public Value requires no privileged groups being gifted by any extended arms of the state, we propose that the states should be evaluated by their legal roles.

Therefore, as we propose to establish a reflection over citizens at their constitutional role – *equal shareholders* –, we seek to evaluate creation of Public Value according to the minimum social conditions in these areas, identifying criteria for determining the *Creation of Public Value* by decreasing inequality in providing these functions, as the contractually assumed preferences of the *citizen-shareholder*, measured in a *Governance Indicator*.

At this point, we propose a new framework, with the citizen at the centre of the system, as partially described by New Public Service. However, as we simplify the decisional process and internal relations inside the government, these *constructs* referred by Jørgensen and Bozeman (2007) are replaced by financial analysis components.

Figure 2 summarizes our research constructs for determining three central units of analysis. The large circles refer to the three main Theoretical groups sustain our object: Agency Theory, The Fiscal State and the Public Value as the objective of Public Management.

Figure 2 - Theoretical Structure



As results of interactions between these areas, we should highlight *social achievements* as the positive outcomes of the roles of governments as agents, *legal allocative decisions*, according to constitutional requirements in a Fiscal State, given the assumptions that the resources allocated represent the performed governmental actions to create *Public Value*.

2.4.3 The indicator construction process

This section, directly designed to the construction of the Indicator, aims to identify the best approach for this development. First, we explain what are indicators, as well as their applications to public affairs; the next topic discusses desired properties of the indicators and some considerations concerning the previous research; at last, we discuss matters of data sources, previous experiences and the limitations of our research.

2.4.3.1 Reasons for developing an indicator for the public sector

An indicator is a sort of data point – or combination of data points – treated for an analytical or policy purpose, explicitly specified and taken into account when one faces the value provided. Therefore, the indicator is not an end in itself, but an analytical tool (Sabatella and Franquesa, 2004).

This analytical tool satisfies basic conditions for a public-sector indicator, as defined in a handbook provided by the Federal Government in Brazil. It combines subjective and objective aspects from empirical evidence, making possible evaluations and comparisons, and provides conditions and support for decision-making processes (Brasil, 2012).

Moreover, dealing with numbers for a model is not different from any other types of modelling by providing ways of interpreting coherence and causality. Therefore, the use of numbers mediates the ideas and knowledge that were previous obtained from former standards and quantifications (Hovland, 2011).

However, Rossi, Freeman and Lipsey (2004) remind us that evaluations may have different purposes according to the context and the situation faced. They advise that some of the statements about evaluation may be only rhetorical.

However, Tucker (2010) defines a *gap* between established measurement instruments and the social world, describing these rhetorical statements in a different fashion. According to him, different biases in social research, alongside over-emphasis in verification and simultaneous de-emphasis in creating new indicators, can be reflected by underdevelopment in current literature on social sciences measurement.

In this sense, Chelimsky (1997) highlights that program improvements, knowledge generation, public relations, political ruses and accountability may be different points of view concerning the reasons for evaluating public issues.

With accountability as focus, the evaluation of the full coverage of the programs expects to manage resources effectively and efficiently, producing the intended benefits (Rossi *et al.*, 2004). The measurement for the fulfilment of these expectations is called *Summative evaluation* (Scriven, 1991).

Beyond empirical applications, some conceptual similarities can be found, in the sense that:

> "The indicator is a measure – of quantitative or qualitative order –, endowed of particular meaning and used to capture and organize the relevant information of the components of the object of observation. It is a methodological feature that empirically informs the evolution of the observed aspect" (Ferreira, Cassiolato and Gonzalez, 2009, p.24).

Rua (2004) expands this concept by relating the attempt to quantify an input, an output, certain characteristic or the performance of a process, service, good or organization.

Over the last decades, the continuously increasing demand for social-related indicators for public institutions and policymaking led to a proliferation of indices. Recent discussions, as summarized by Botero, Nelson and Pratt (2011), highlight that indicators should mostly be faced as proxies for underlying concepts, rather than an exact measurement tool. Furthermore, specifically governance and rule of law indicators should not be used as predictors of future behaviour, as the presence of extra-systemic circumstances, lack of measurement standardization or low number of observation are still some of the prevailing features.

2.4.4 Previous recent experiences, existing data sources and research limits

2.4.4.1 Brazilian Initiatives

This thesis aims to establish a more effective way of searching for Public Value creation. In this sense, we take a different approach to the Index developed by Miranda (2012), which focused on public resources management, public goods and services, perception of corruption, social equality and vulnerability indicators.

Although his work created a new attempt to measure governmental performance, it is founded on secondary analysis of secondary data, or proxies that followed previous empirical works. Most of them, following the methodologies and indicators of World Bank end on a narrow focus of indicators, as discussed in sections 2.1.5 and 2.2.6.

2.4.4.2 Public-Value-related Initiatives

Under the scope of the Public Value, several attempts have been made to define how to assess what citizens determine as being valuable. Moore (2014, p. 470) defines the first step as the financial costs of "taxpayer-financed efforts to produce publicly desired results".

In an almost simultaneous effort, Meynhardt (2015) developed a new approach for Moore's suggestion of a Public Value Scorecard. With a strong economic-philosophical basis, it proposes to get the idea of value in a five-perspective diagram, answering five questions that tackle four different dimensions, listed on Table 1:

Table 1 - Questions for a Public Value Scorecard

Values Involved	Question Made
Utilitarian – Instrumental Values	Is it useful?
	Is it profitable?
Hedonistic-Aesthetical Values	Does it allow for positive experiences?
Political-Social Values	Is it politically acceptable?
Moral-Ethical Values	Is it decent?

Source: Meynhardt (2015)

Another attempt to define Public Value and to relate it to public finance was drawn by Bryson, Crosby and Bloomberg (2014). Their approach focuses in the citizen having a more important role, "beyond their roles as voters, clients, constituents, customers, or poll responders to becoming problem solvers, co-creators".

Van de Walle (2008, p. 259) highlights a difference between performance for market-traded services and those who have a public component. Split into public services, essential services or universal services, these latter types are more likely to be referred as holders of a typical performance deficit. However, the values assessed to measure performance are not the most appropriate for services of general interest, defining a new standard for *acceptable criteria* for assessing performance.

In its French origins, the *service public* refers to the principle of provisions and the material services as well. On the one hand, the principles can be commonly defined as equality, continuity of services and adaptability. On the other, the services cannot be defined in a list, for being largely undefined and constant changing (Van de Walle, 2008; Obermann, Hall and Sak, 2005).

2.5 Brazilian Experience on Public Finance: Legal Assessment and Governance Discussion

This chapter discusses the legal evolution of the budgeting procedures in Brazil during the second era of national accounting, which starts in 1964 (Schmidt, 2000). Guimarães Júnior, Lima and Piscitelli (2014) summarized the main events that might have had influence for the enactment of Federal Law 4.320/64, the first general law for Brazilian public finance that still rules both national and subnational budgets, as shown below.

Table 2 - Evolution of normative framework for Public Finance in Brazil 1808-1946

Year	Rule/Law/Norm
1808	Creation of Public Treasury and Finance Council.
1921	Central Directory for Public Accounting was transformed into Central Accounting *Bureau**
1922	General Rules for Public Accounting (Decree 15783/1922)
1937	Creation of the Administrative Department of the Public Service
1940	New rules to elaborate and execute the Public Budget (Decree 2416/1940)

Source: Guimarães *et al.*, 2014
Note: *Translation from Portuguese

Furthermore, we analysed the changes brought by the 1988 constitution and its amendments, the Fiscal Responsibility Law and the recent changes proposed for the public education and health sectors.

2.5.1 1964 onwards: the standardized budget laws

Holding considerable previous commercial deficits, the last democratic government before the Military Coup in 1964 approved law 4.320, focused on the public budget process from 1964 onwards. This law set new structures for accounting registers and reports, with the same criteria for the Federal level, States and Municipalities, creating a standardized budgeting system for the whole country.

However, improvements brought by this law could only be perceived in the federal level, as most of the states and municipalities kept making their “line-item budgets”, without planning for results. Government programs, although referred in the law and in the budgets, were nothing but an accounting system and multiyear planning was only adopted for the 3-year *Orçamento Plurianual de Investimentos* (Azevedo and Aquino, 2016).

2.5.2 The 1988 Constitution and the budget cycle (PPA)

A few decades later, the 1988 democratic Constitution brought the real Program Budgeting orientation to Brazilian financial Law, defined as “a framework that streamlines resource allocation decisions”, as well as “a vehicle for making performance management operational in the public sector” (Kim, 2007, p. 17). For that purpose, two new planning tools were then required to elaborate each year’s budget.

First, article 165, further regulated by the Decree 2.829/98, created the multiyear plan – *Plano Plurianual (PPA) a* – to establish regionalized guidelines and goals for public administration along the four following years, as well as to match long-lasting activities performed by the governments.

Given these objectives, and also required by the article 165, the Budget Guidelines Law, or *Lei de Diretrizes Orçamentárias (LDO)* establishes parameters for resources allocation in the forthcoming budget in order to assure the goals defined in the PPA. As the multiyear plan can be outdated after its enactment, the LDO adjusts the goals to the current financial conditions, adapting the incoming budget to a more realistic scenario.

2.5.3 Fiscal Responsibility Law

In a context of the Reform of the State, the constitutional gap for a Public Finance law, is stated in the article 163 of the 1988 Constitution, coordinated by José Roberto Afonso, with support from International Monetary Fund, Organisation for Economic Co-Operation and Development, Commission for Latin America and the Caribbean, Inter-

American Development Bank, and the International Bank for Reconstruction and Development.

Complementary Law 101/00 aimed to set principles for the responsible management of public finance, with norms to prevent and correct any deviances (Queiroz, 2001). In ten chapters, the Law balance for public results and made financial availabilities reports compulsory, set by Fiscal Management Report and Summarized Report of Budget Execution.

The Fiscal Responsibility Law brings several improvements, mainly in connecting the previous budgeting tools, as mentioned by De Mello (2006, p. 10):

> “The LRF strengthens the legal framework for medium-term budgeting. The LRF requires the inclusion of a Fiscal Policy Annex to the Multi-Year Budget Framework Law (PPA) of the federal government with multi-year fiscal targets and the inclusion of a Fiscal Targets Annex to the Budget Guidelines Law (LDO) for all levels of government. The LDO is also required to include an annex describing fiscal risks with an assessment of contingent liabilities. By introducing more stringent requirements on fiscal targets in the preparation of the LDO, the LRF strengthens its role in budget preparation and fiscal management in general.” (De Mello, 2006, p. 10)

2.5.4 Other Initiatives on Social Spending: Constitutional Amendment 29 and its regulation

The Constitutional Amendment 29, enacted in September 2000, determined minimum budget percentages for the Union, States and Municipalities, in order to tackle the persistent healthcare system underfinancing problem, as well as prohibited the federal government from retaining any financial resources for health. In any deviances, the Union and the States were then authorized to intercede in Municipalities (Campelli and Calvo, 2007).

However, critics argued that despite having clear parameters for what could be accounted as spending in health services and actions, several states included other expenses in their reports in order to reach the goals set by the Constitutional Amendment.

Twelve years after the 29th Constitutional Amendment, Complementary Law 141/2012 regulated the expenses that could be accounted as health services as well as those that should be excluded. This Complementary Law also brought social and economic criteria for redistributive actions using the National Health Fund, which is mostly filled with Federal resources.

2.5.5 Recent studies in state-level Public Governance in Brazil

Over the past five years, academics and practitioners developed initiatives to evaluate and create metrics for Public Governance. Among these, Miranda (2012) and Oliveira and Pisa (2015) quantitatively explored state-level variables and built their own scoring methods.

Miranda (2012) ranked Brazilian states, setting weights for public resource management, public goods and services, corruption, social equality and vulnerability. Although a multidimensional approach was used, the use of other indices may have misled its results. As an example, the use of "perception of corruption" as a proxy for corruption is widely discussed with questionable results (Olken, 2009; Melgar, Rossi and Smith, 2010).

Furthermore, the use of GDP as a proxy for well-being is questioned by the economic literature. Authors such as Atkinson (2015) and Stiglitz (2012) suggest, the use of GDP as a proxy in inequality scenarios might distort social results. Complementary to this proxy, a municipal development index is also used. Put together, these conditions might bring a puzzling result, as, using the last data for the author's sources, Presidente Kennedy is the first GDP in Brazil and Extrema is the most developed city.

The second paper under analysis, written by Oliveira and Pisa (2015), used five principles to define public governance: effectiveness, transparency and accountability, participation and equality and integrity. With two mixed weighting systems, the paper lacks justification for the second level weights, as well as verification methods. We also highlight that the authors used data from different years to obtain the final score.

Despite these methodological questions, the results reveal that, for the results in both papers, wealthy states are more likely to show higher governance levels, although none of the authors tested the relation between GDP (or any other wealth measurement) and the final scores. In order to fill these gaps, the methodology shown in the next section aims to improve the measurement of governance in Brazilian states.

3 Methodological Outline

Initial methodological aspects such as research qualification and data collection process are shown in this section, as well as the multidimensional indicator creation process, with the data treatment and the weighting procedures. After that, the testing procedures for the indicator are presented before the results.

3.1 Introduction

This thesis aims for the creation of an indicator that could measure how well governments conciliate their needs and the needs of their *shareholders*. In other words, what citizens consider as necessary for the best returns on their taxes, as an agent-principal model with a one-share-one-vote model (Jensen and Meckling, 1976), redefined by Stiglitz (2012) as a one-person-one-vote.

Recent experiences focus on new metrics of performance for society as a whole. Attempts on Australia, New Zealand, Scotland, United Kingdom, Germany, France, Korea, Italy and the United States recently came to be (Stiglitz, 2012, pp. 231-232) in an attempt to find new mechanisms for measuring different economic systems. In scenarios of disparity or inequality, traditionally used economic variables – for instance, GDP – are less likely to express well-being for a mean citizen, and can even produce wrong outputs.

This thesis is a descriptive research that aims to describe a determined phenomenon or certain aspects of a determined population. For this purpose, following patterns of data collecting, we may analyse, classify and interpret the facts observed (Marconi and Lakatos, 2003).

3.2 Data Collection and Sample

The data collection process for this Indicator took place between July and August 2015. The absence of a single official database that could provide reliably all the required data made the collection procedure longer than initially expected. Although the Transparency

Law[15] demanded the States publish their acts, some of them strictly followed the text enacted in 2011, making the information in transparency web portals only for 2012 and later years.

In order to avoid inconsistencies, budgetary data was collected from the official websites of Legislative Assemblies, Government (Civil Office, Civil House or equivalent) Secretaries, Planning Secretaries, Finance (Treasury or equivalent) Secretaries or Official Journals of the States. By using this collecting procedure, the only exception was the budget law for the State of Alagoas in 2001, that was not available online but was kindly sent via email on request[16]. The references to the budget laws are detailed on Appendix I, including each State, Fiscal Year of effect, the number of the law and the enactment date.

Financial data was collected from the National Treasury Secretary (*Secretaria do Tesouro Nacional*). However, information for all the years was not available in one single database. Therefore, it was necessary to extract and gather data from four different databases: SISTN (*Sistema de Coleta de Dados Contábeis dos Entes da Federação*), FINBRA (*Finanças do Brasil*), SICONFI (*Sistema de Informações Contábeis e Fiscais do Setor Público Brasileiro*) and the Federal Treasury itself. SISTN was discontinued in 2014, but the data up until 2013 is still available. FINBRA has all the financial data, but we can only browse the years 2013-2015 via SICONFI.

With 15 annual observations between 2000 and 2014 for each of the 27 States[17], the collected variables and the corresponding sources were used to build the five dimension – or constructs – for the indicator. The data interval for this analysis is due to the full availability of the information for all the states under analysis. Major legal requirements

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[15] National Law 12.527, November 18, 2011. For references, see Brasil (2011).
[16] information concerning the law was requested via e-mail, and the law was readily sent from the Office of the parliamentarian Luiz Dantas (at the time, the President of the Legislative Assembly). Afterwards, I was informed about the availability of the law on the website, correcting the "temporary lack of transparency".
[17] The 27 States are, actually, 26 States and 1 Federal District, that, for all practical effects, holds the same responsibilities as the states. For better comprehension, we refer to all of them as *States*. The States are commonly represented by two letters.

were kept untouched for all the interval, which provides no structural changes for the proposed indicator.

As mentioned in the Theoretical References, the most relevant law for the period, the Complementary Law 101/ 2000, or Fiscal Responsibility Law, was enacted in May 2000. Further than the Fiscal Responsibility Law, the Constitutional Amendment number 29, enacted in 2000 and formerly (formally regulated without changes by the Complimentary Law 141/2012) joined the Constitutional Article number 212 and set the minimum values for Education and Health resources.

3.3 Creating a Multidimensional Indicator

A multidimensional indicator gathers different units of analysis in one single measurement, using a standardized method and desirably providing the capacity to be tested. Also named composite indicators, these data are analysed in the following sections according to the procedures used in this thesis. First, we established how to set the weights for the indicator, that we call Governance Intensity. After that, we determine testing conditions for reliability and internal consistency. At last, the indicator is then applied to the Brazilian population, providing the Governance Incidence.

The concept of governance intensity we use emerges from two different sources. First, the Oxford Poverty and Human Development Initiative uses the intensity concept directly applied to poverty in order to measure the extent that people are poor in multiple dimensions, and not only how many can be considered poor. Mostly based in the Alkire-Foster method, we call Governance Intensity the extent to which each State can be evaluated in five different dimensions and, complementary to that, Governance Incidence evaluates the proportion that the Incidence can be observed across the country (Alkire, Foster, Seth, Santos, Roche, Ballon, 2015)

In a different attempt to coin the term Governance Incidence, it was defined and tested for Cameroon, giving scores to six chain governance arrangements for natural resources extraction in the country.

3.3.1 Defining the Weights

The weighting procedures are one of the most controversial issues in the literature concerning multidimensional indicators. Decanq and Lugo (2008) highlighted three among at least six different groups of weighting methods for composite indicators, named as *Normative Weighting*, *Data-driven Weighting* and *Equal Weights*. For all of them, the weights are trade-offs between dimensions under analysis, as they “reflect important value judgements about the (vague) notion of well-being. Researchers should therefore be as clear as possible about how the weights are set” (Decanq, Lugo, 2008, p.2).

The first group, Normative Weighting, relies on the preferences assumed to represent the perceptions of people concerning the trade-offs. For this, the most accurate procedure would be to ask individuals for their personal preferences. As that is impossible, limited samples are built to represent the whole public. Other initiatives are used to validate this sampling procedure: to randomize the sample, experts from local and international communities, policymakers and groups of social representatives are seldom part of the choice to establish a *fair* trade-off for a larger group (Decanq and Lugo, 2008, p. 20).

A feasible approach for establishing normative weights for an indicator brings the budget allocation for the given preferences. In this procedure, experts are asked to pay more for the dimensions that are more important according to the study under analysis (Decanq and Lugo, 2008, p. 21).

Another attempt to establish normative weights for an indicator is a hierarchical process. For this procedure, the members of a representative group are asked to reveal their preferences across the dimensions, always pairwise. The strength of their preferences may range from 0 to 9, which creates a comparison matrix of preferences, and weights are estimated using the eigenvector of this matrix (Decanq and Lugo, 2008, p. 21).

However, Decanq and Lugo highlight some questions about these models. The first is whether a researcher is able to select the unbiased group of participants. Under this condition, the weighting scheme might be skewed for embedding underrepresented or misinformed groups. According to the authors, even with unbiased selection, these groups would have pressures and vested interests, misguiding the final scheme. As a last issue, in some extent, the researcher would find, as in any participatory technique, paternalistic choices (Decanq and Lugo, 2008, p. 21).

The second group is referred as Data-driven weighting. For this category, information embedded in data should provide enough and reliable information for the best possible weights. Decanq and Lugo (2008) split this category of analysis in four subgroups.

The first subgroup is the frequency-based weighting. According to the authors, the proportion of the population under certain condition reveal a proper weight for the dimensions of an indicator.

These weights can be regressive or progressive, according to the set of variables under analysis, and different approaches might have inverse weighting schemes. In early literature, Desai and Shah (1998) argued that smaller populations affected should receive higher weights, since a "hardship shared by few has more impact than one shared by many" (Decanq and Lugo, 2008, pp. 21-22). However, Decanq and Shah omitted that in the study of Desai and Shah (1998) this conclusion was due to the splitting of the notion of subject feeling of deprivation, which should be measured individually and relatively to the surroundings. The objective incidence, however, would be used in a progressive weighting.

This progressive weighting was also used in other multidimensional weighted indicators, all of them weighting the incidence of the variables. Osberg and Sharpe (2002) and the Alkire-Foster methodology (Alkire *et al.*, 2015) also used higher weights for larger proportions of population under certain risk conditions.

The third group refers to the equal weighting procedure. Although controversial, this system recognizes that all the components are equally important, or in a lack of conditions that would provide a reliable basis to determine a different weighting scheme, and should then be considered reasonable. For this situation, an implicit error is known to exist, but this risk is not smaller than the hazard of setting weights in any other ways (Decanq and Lugo, 2008).

Using the last group defined by Decanq and Lugo (2008), this indicator had its dimensions equally weighted at 20% each, making up the total indicator weighting at 1, not allowing non-negative weights. Some of these dimensions were again split, keeping the criterion of holding equal weights within each dimension. The foregoing equations in Table 3 equalize all scores in order to generate scores ranging from a minimum of 0 and a maximum of 1 for each dimension.

$$Intensity_{State/Year} = \frac{1}{5} \times (A + B + C + D + E) \qquad (1)$$

3.4 Analysis of financial data

Taken from budgetary yearly allocation and financial spending, financial variables can reveal a pattern of governmental response to the collective demand. Available data will be analysed under the perspective tested by Rubin and Willoughby (2009). The methods used by them evaluate the practical use of the North American Financial Government Performance Project (GPP), which consider four different evaluation criteria in order to produce a grade for the financial management.

The first dimension (A) is the regularity of the Budget Cycle, as required in the article 34 of the Public Finance Law (Federal Law 4.320/64). To obtain the scores, every Annual Budget Law was awarded with the maximum score if the budget was enacted before the first day of the fiscal year, on January 1st. Delay cases were reduced at 1/365 per day of delay.

The second dimension (B), balance of the current budget, comprises the capacity of the states to sustain current expenditures with current revenues for the same year, as stated in the article 11 of the Federal Law 4.320/64. States that have fulfilled this requirement had grade 1, and those who have not fulfilled it had decreasing grades according to percentage revenue surplus.

The third dimension (C) refers to Debt, and comprises two divisions. The first relates to the payment of interest debts, which were deducted from the maximum score in proportion to their impact on the total expenditure of the States. The second division of the debt comprises the ratio of Net Debt to Net Revenue Stream and Chain of States. According to Resolution No. 40/2001 of the Senate (Brasil, 2001), this ratio should not exceed 2. Therefore, as the ratio approaches the maximum limit, the scores tend to 0.

The fourth dimension (D) is the accuracy of Planning, subdivided into three equally weighted values, according to the Annex 12 of the Federal Law 4.320/64. The first (D_1) concerns the accuracy obtained in the planning of expenditure, where the percentage discrepancy between planned and realized values is deducted from the maximum score of 1. Similarly, the second condition (D_2) applies to the accuracy of revenue. Finally, the accuracy between revenue and expenditure (D_3) makes up the third dismemberment of Accuracy Planning.

The fifth dimension (E) is defined by the constitutional minimum expenditure percentages in education (25%) and health (12%), respectively represented in the two divisions (E_1 and E_2) of the dimension. Compliance with the minimum value determines the maximum grade, while non-compliance follows the highest score in proportion to the expenditure not made in their functions.

After using the collected data in each corresponding equation, as described in the table, each state obtained, for each construct, a score per year, which scales the intensity of governance practiced.

Thus, for each year, the Governance Intensity in each state can be determined by Equation 1, wherein each of the values in brackets represent the corresponding construct (or partition, where there is one) in Equation 2, and detailed in Table 3 (in the end of this chapter):

$$Intensity_{State/Year} = \frac{1}{5} \times \left[A + B + \frac{(C_1)}{2} + \frac{(C_2)}{2} + \frac{(D_1)}{3} + \frac{(D_2)}{3} + \frac{(D_3)}{3} + \frac{(E_1)}{2} + \frac{(E_2)}{2} \right] \quad (2)$$

3.5 Back to the citizen-stakeholder level: testing the variables

At this point, we obtain an indicator with values that range between 0 and 1, with lower values meaning poor governance and values closer to 1, better governance. With these procedures, we expect to fulfil the conditions established by Miranda (2012), completing six steps to build an indicator or index, as listed below:

1st: Define a theoretical structure;

2nd: Identify and choose relevant variables;

3rd: Normalize the variables to make comparisons possible;

4th: Attribute weights to variables and groups of variables;

5th: Define how to aggregate variables in a single indicator;

6th: Provide sensibility tests for the robustness of the results.

As a possible validity test for this indicator, with the *citizen* as the unit of analysis, we can compare a synthesis of a sample of citizens –chosen using demographic variables – and compare their living conditions with others across time, determining a level of *public value creation*, by correcting his equal conditions to any other citizen. As weighting criterion, we used the yearly population for each state in analysis. These data were provided by IBGE – the Brazilian Institute for Geography and Statistics.

Table 3 - Variables, sources, constructs, divisions and scoring equations

Variable	Source	Construct or Using Indicator		Divisions		Scoring equations
		Description	Weight	Description	Weight	
Budget Law Enactment Date	State Budget Laws[18]	A – Budget Cycle Regularity	0,2	-	0,2	$A = 1 - \frac{Days\ between\ the\ enactment\ of\ Budget\ law\ and\ the\ 1st\ day\ of\ the\ year}{365}$
Current Revenue	Balance Sheets	B – Current Budget Balance	0,2	-	0,2	$B = 1 - \frac{Current\ Expenditures - Current\ Revenues}{Current\ Revenues}$
Current Expenditure						
Interest on Debt	National Treasury Secretary	C – Debt Management	0,2	C.1 – Interest-to-Expenditures rate	0,1	$C_1 = 1 - \frac{Interests\ Paid}{Total\ Expenditure}$
Consolidated Net Debt				C.2 - Net Consolidated Debt to Real Revenue rate	0,1	C_2[19] $= 1 - \left\| \frac{\frac{Net\ Current\ Debt}{Net\ Current\ Revenues}}{2} \right\|$
Real Expenditure		D – Planning Accuracy	0,2	D.1 – Revenues accuracy	0,067	$D_1 = 1 - \frac{\|Estimated\ Revenues - Real\ Revenues\|}{Real\ Revenues}$
Real Revenue				D.2 – Expenditures accuracy	0,067	$D_2 = 1 - \frac{\|Planned\ Expenditures - Real\ Expenditures\|}{Real\ Expenditures}$
Planned Expenditure	State Budget Laws			D.3 – Surplus or Deficit	0,067	$D_3 = 1 - \frac{\|Real\ Revenues - Real\ Expenditure\|}{Real\ Expenditures}$
Estimated Revenue						
Education Expenditure	National Treasury Secretary	E – Attendance to legal minimum percentage allocations	0,2	E.1 – Education	0,1	$E_1 = \frac{Education\ Expenditure / Net\ Current\ Revenues}{0.25}$
Health Expenditure				E.2 – Health	0,1	$E_2 = \frac{Health\ Expenditure / Net\ Current\ Revenues}{0.12}$
Population of States	IBGE – Brazilian Institute of Geography and Statistics	Incidence Weighting		-	-	-

[18] The full list of the budget laws with numbers and enactment dates are available on Appendix I.

[19] The use of the absolute value is due to the state of Roraima, which had negative values for the Net Consolidated Debt in 2007. After double-checking, the National Treasury Secretary confirmed the value and had no further explanation, as it is provided by each State.

4 Results

In order to provide a deeper comprehension of each dimension, this section was divided in three different topics. The first one brings the analysis concerning the five dimensions for the indicator as referred in the Methodology section, and the overall results for the Governance Intensity. The second concerns the governance incidence of the results obtained in 4.1, applied to the population of each state. The third topic comprises tests for internal consistency and external validity for the Governance Intensity.

Table 4 - Highlighted Results for the Governance Intensity in Brazilian States, by Constructs and Branches for 2000-2014

Intensity, Constructs and Branches			Variables				
			Mean Value	Higher Averages (State)	Lower Averages (State)	Best Yearly Performance (State:Year)	Worst Yearly Performance (State:Year)
Governance Intensity [(A+B+C+D+E)/5]			0.91	0.96 (AP)	0.85 (AL)	0.99 (AP: 2009)	0.72 (MA: 2000)
Dimension 1 – Budget Cycle Regularity [A]			0.98	1.00 (AC, AM, MS, PE, PR, RS)	0.92 (ES), 0.94 (AL), 0.95(RN)	1.00 (255 Observations)	0.44 (ES:2003)
Dimension 2 – Current Budget Balance [B]			0.99	1.00 (20 States)	0.98 (RS)	1.00 (392 Observations)	0.88 (PR:2000)
Dimension 3 – Debt Management [C]	Construct [C]		0.75	0.95 (AP)	0.49 (RS)	0.99 (AP:2008)	0.46 (AL:2002)
	Branches	3.1	0.97	0.99 (AP)	0.94 (RJ)	1.00 (RR:2012)	0.91 (SC:2012)
		3.2	0.54	0.92 (AP)	0.00 (RS)	0.95 (RN:2012)	0.00 (RS: 2000-2014)
Dimension 4 – Planning Accuracy [D]	Construct [D]		0.91	0.96 (RS)	0.79 (RR)	1.00 (RS:2009)	0.52 (RR:2011)
	Branches	4.1	0.89	0.96 (RS)	0.73 (RR)	1.00 (BA:2007)	0.35 (RR: 2011)
		4.2	0.9	0.96 (RS)	0.79 (RR)	1.00 (RS:2012)	0.37 (DF:2003)
		4.3	0.95	1.00 (SP)	0.86 (RR)	1.00 (SE:2004)	0.46 (RR:2011)
Dimension 5 – Attendance to legal minimum percentage allocations [E]	Construct [E]		0.89	0.98 (SP)	0.76 (ES)	1.00 (CE:2001-2011)	0.38 (PE:2000)
	Branches	5.1	0.81	0.88 (SP)	0.42 (ES)	1.00 (CE: 2001-2011)	0.30 (PI:2008)
		5.2	0.96	1.00 (AC, AL, BA, DF, PR, RN)	0.83 (RJ)	1.00 (AC, AL, BA, DF, PR, RN: 2000-2014)	0.12 (MA:2000)

Source: Results

This design for the results of the thesis was adopted in order to make possible to the reader to analyze each dimension regardless of the other ones. Furthermore, encouraged by Tucker

(2010, p.315), this construction tries to emphasize "the process of generating new, situation-specific indicators", instead of establishing the main focus on the commonly over-emphasized verification methods. It does not mean that the verification methods should be neglected, but considered as relevant as the whole generation process.

4.1 Governance Intensity

The results for Governance Intensity are related below in five sections, one for each dimension under analysis. We will first discuss the regularity of the budget cycle, then current expenses and revenues, followed by debt management, planning accuracy and, last, the constitutional requirements.

4.1.1 The first criterion: Regularity of the Budget Cycle

The first construct is the regularity of the Budget Cycle, as required by article 34 of the Public Finance Law (Federal Law 4.320/64). To obtain the scores, every Annual Budget Law was awarded with the maximum score if the budget was enacted before the first day of the fiscal year, on January 1st. Delay cases were reduced at 1/365 per day of delay.

The results reveal that the budget enactments are, in average, a week late. Although the scores might seem to be good, as the mean is still not far from 1. Less than 25% of the states strictly followed their schedules, and less than 60% of the budget laws were approved in proper time.

This decrease has two complementary reasons. First, between 2000 and 2014, the budget enactment delay became, on average, two days longer, when considering all states (scores of 0.987 and 0.981, respectively). Second, the number of states that started the fiscal year with an enacted budget law fell from 21 to 14, meaning 1 out of each 3 states. In other words, more states are late, and the late states are even later.

Several consequences arise from the belated enactment of the budget law. Following a pattern established for the Federal level, most states use the previous year as the main reference for the cases that the budget is not enacted on schedule. In these conditions, states are allowed to spend one twelfth of the previous year's amount for non-compulsory expenses. As the most representative *functions* are exempt from this rule (education and health), most investments and long-term oriented policies face serious risk on this *budget limbo*.

4.1.2 The second criterion: Current Expenses and Revenues

The second construct, balance of the current budget, comprises the capacity of the states to sustain current expenditures with current revenues for the same year, as referred in article 11 of Federal Law 4.320/64. The first annex of the law requires the amount of current deficit or surplus for a year. Further administrative documents, however, such as the Accounting Manual for the Public Sector (Brasil, 2010), name this relation, although estimated as a ratio, Current Budget Execution Quotient (*Quociente de Execução Orçamentária Corrente*).

The States that have fulfilled this requirement had grade 1, and those who did not fulfil it had their grades attributed according to the deficit ratio, as defined below:

The superiority of current revenues compared to current expenditure held the best scores for the whole sample. Only seven states had current deficits between 2000 and 2014. Paraná, Goiás and Piauí had only one year of deficit each (2000, 2001 and 2003, respectively), whilst Minas Gerais (2001 and 2002) and Rio de Janeiro (2012 and 2014) had two years of current deficits. Furthermore, the recent evolution of Rio Grande do Sul and São Paulo urge a deeper analysis, since they hold the worst performances in this construct (3 years of deficit each).

This dangerous fiscal condition for the two states can be easily verified by an empirical check. Among massive salary retains, public servants strikes and repressions of students movements against closing schools, these two states had formal executive actions that revealed how critical their condition was in 2015.

The Government of São Paulo issued Decree n. 61.131 in February 2015 to cut 5% to 10% of the Current Use Expenditure, which provided some temporary relief. However, the first project for the 2017 budget Law brought significant smaller revenue estimates.

In similar fashion, Rio Grande do Sul reduced around 21% of the Current Use Expenditure (São Paulo, 2015; Rio Grande do Sul, 2015), without the temporary relief that São Paulo achieved. Street protests and public servants on strike could anticipate the emergency for the Decree 53.303, that made official the Financial Calamity in November, 2016.

4.1.3 The third criterion: Debt Management

The third construct, Debt, comprises two divisions. The first relates to the payment of interest debts, which were deducted from the maximum score in proportion to their impact on the total expenditure of the States. The second is the ratio of net current debt to net current revenues.

With both values ranging from 0 to 1, the two subscores were equally weighted, providing the total for item 1.3. The two dimensions of debt revealed no significant changes to the results observed in each of them. When they are analysed together, it is worth highlighting the fact that Rio de Janeiro has submitted the second and third worst scores (0.4635 in 2002 and 0.4637 in 2003) of the sample, yet not one of the worst average scores of indebtedness. This is due to recurring scores higher than 0.5234 as of 2007 (including the peak of 0.6132 in 2011), considerably raised its average and demonstrated a striking development in recent years.

The components of these overall results are analysed in the following sections according to each subtopic. However, some conclusions arise from the general aspects of the Debt Management.

Studies comprising the public debt in Brazil are not new, as well as public initiatives to overcome this condition. In 1997, Law number 9.496/97 required the states to have fiscal adjustments in order to be part of a renegotiation program for their debt. Most of the States made it (all of them, except for Amapá and Tocantins). In this attempt, the Federal Government hired 11 percent of the GDP in state-owned debt to be paid in 30 years, with ear-marked state revenues and resources from the State Participation Fund (Fundo de Participação dos Estados) as guarantee. Almost 20 years after that, in a totally different context, most of the States are struggling with their debt, bargaining a new financial aid from the Federal Government, which, at this time, is not happening yet.

Furthermore, in the Big Data generation, the current model of internal and external control of the Public Administration do not seem to be enough to audit the origins and the volume of the Debt (Costa, Dutra, 2014).

4.1.3.1 Debt: Interest to Revenues ratio

Widely used to describe the commitment of the current revenues to pay the interests, several agencies, such as International Monetary Fund and the World Bank, use this data in an "assumption that debt service outlays do not directly generate social utility […], the optimal fiscal policy path depends on current and future costs of servicing the debt (inherited and new)." (Debrun and Kinda, 2013, p. 3).

$$Score_{1.3.1} = 1 - \frac{(Interest\ spend)}{Current\ Revenues}$$

The allocation of expenses for the payment of debt interest shows that, on average, States used 3.3% of their current resources for this purpose. The annual evolution of the joint performance of the states revealed significant improvement. From an initial average of 4.4% of the expenditure in 2000, in 2014, 2.3% of current expenditure was used for the payment of interest. This decline could be explained by lower interest rates nationwide, the better loan contracts and longer payment deadlines that, together, had a negative impact in the present date. It is also worth highlighting the case of the state of Roraima, which achieved the only score one in the sample (2002). It could be an exception or even a refusal to pay any interests, given the fiscal condition of the state. However, Roraima had the second best average score on this criterion analysis, averaging 0.9878 with standard deviation of 0.0078, which makes the score feasible.

Although the average 3% might not to seem a lot, the value does not reveal how deep the debt problem is for the states, as well as an approximate share of 10% of the GDP. In this sense, we understand that the volume of interests paid annually – no matter via direct payment or smaller federal transfers received – drains resources from public policies and investments in a considerably share, as also found by Caldeira, Wilbert, Moreira and Serrano (2016) and Gobetti (2010).

This phenomenon was also referenced in the literature as *Budget Compression* by the debt service. Although the problem may receive several different names, the solution provided for this issue is far from unanimous. Both lowering of the sovereign interest rates or re-establishing the basis for the contracts, such as the definition of dates or methods of defining values have their reasons not to be executed (Dieese, 2015)

4.1.3.2 Debt: Net Debt to Net Revenue Ratio

The second subscore is related to the ratio between Net Current Debt and Net Current Revenues. According to the Fiscal Responsibility Law and Federal Senate Resolution number 40/2001, this ratio must be limited to 2. Following the Resolution, the states that had this ratio greater than 2 were given a score equal to 0, as they do not fulfil the acceptable, legally determined ratios. Complementary to that, the states that had the ratio smaller than 2 were given proportional scores.

The ratio of Net Debt Current and Current Net Revenue of States shows the greatest dispersion and highest volume of minimum scores, revealing that the State debts should receive urgent attention and action by government planners.

Nine out of the 27 states in the sample exceeded the upper limit for this criterion. Mato Grosso, which would have exceeded the limit only in 2000, and again, Rio Grande do Sul, which throughout the observation period did not achieve the limit established by the resolution whatsoever.

However, it is understood that, in general, the States have managed to reduce the ratio of debt to net current revenue. Taken together, the mean scores showed consistent improvement from 0.36 in 2000 to 0.65 in 2014, which, however, raises another question: if the improvement in the debt-income ratio should not be more growth that proportion of revenues, than to a decrease in debt. A brief analysis of the data concurs, but a more detailed analysis on this aspect also entails the dedication of research oriented exclusively to this purpose. This evidence is strongly consistent with the hypothesis mentioned in reducing the payment of interests, which new deadlines postpone the current payment due to an increase debt in the future.

4.1.4 The Fourth Criterion: Planning Accuracy

The Planning Accuracy criterion used three different subscores to measure the performance of each state.

The first criterion analyses the gap between the revenue estimated in the budget law and the total revenue obtained in each year.Scores tend towards 1 the closer the estimates and effective revenues are, according to the formula:

$$Score_{1.4.1} = 1 - \frac{|Estimated\ Revenue - Total\ Revenue|}{Total\ Revenue}$$

Regarding planning accuracy, Brazilian states had 89.15% of average accuracy in predicting the revenues. Although this might sound as a good estimate, we must highlight that the positive difference between the planned and registered values allows the Executive branch to allocate the use of this revenues with minimum legislative interference. On the other hand, if revenues are smaller than the predicted, it also allows the Executive to decide how not to spend public funds, also with minimum legislative interference.

The second criterion analyses the gap between the fixed expenditure in the budget law and the total expenditure made each year. Scores tend towards 1 the closer the estimates and effective expenditures are, according to the formula:

$$Score_{1.4.2} = 1 - \frac{|Fixed\ Expenditure - Total\ Expenditure|}{Total\ Expenditure}$$

The 90.13% accuracy in planning, featuring a balance inherent in the planning stages is slightly higher than the score observed for revenues.

The third subscore analyses the observed gap between the revenue and expenditure for each year, given by the formula:

$$Score_{1.4.3} = 1 - \frac{|Total\ Revenue - Total\ Expenditure|}{Total\ Expenditure}$$

There is not enough information for the analysis of budgeted revenues and expenditure, however. Due to the fact that the states are free to execute their budgets along each year (or not to run), the lack of attachment to the initial plan makes the pure budget analysis a merely formal reading. As evidence of the lack of responsibility, for all the observations in the sample, only the budget of Distrito Federal in 2010 had a written budget deficit, while no surpluses were found.

However, observed revenues and expenses had 94.87% of average accuracy, revealing the higher assertiveness of the execution steps, when compared to the planning stages. This verification therefore reaffirms, for the subnational level, the hypothesis of greater managerial freedom to the executive power in carrying out budgetary expenditures for both cases of inaccuracy. Whether the revenues exceed the planned values, the executive is allowed to increase the budgets for the existing expenses. If the government faces smaller revenues, discretionary cuts in expenditure can also be made without prior legislative approval.

4.1.5 Fifth Criterion: Constitutional Requirements

As the last dimension under analysis, the constitutional requirements of allocation were evaluated. For this procedure, we used two subscores: the first for education and the second for health funds.

Brazilian states are required to spend at least 25% of their tax revenues in Education. Thus, the states that spent 25% or more of their Net Current Revenue were assigned a score of 1. In a similar requirement, however, with lower percentage, Brazilian states are required to spend at least 12% of their tax revenues in health. Despite the decade-long discussion concerning the definition of *health expenditure*, the states that spent 12% or more of their Net Current Revenue were assigned a score of 1. The states that underperformed this percentage were proportionally scored.

The Final Score for the Constitutional Requirements is given by the weighted sum of the two previous components.

The minimum allocation percentage in education, in general, had an average score for the states in the order of 0.8120, with deviation of 0.1483. It is understood, therefore, that although the States, in general, do not meet the legal provision, the high deviation denotes a wide variation within the sample. This result is corroborated by the difference between the lowest and highest average state. With lower average scores observed the states of Espírito Santo (0.4171), Pernambuco (0.4786) and Mato Grosso (0.6142). The Espírito Santo was also responsible for two of the three smaller annual allocations, getting scores og 0.4626 in 2011 and 0.44 of in 2012. The maximum score of 1 was obtained at least once by 22 Federative Units, and Ceará, São Paulo, Paraná, Amapá and the Federal District achieved the total in at least five years of the sample (11, 10, 8, 7 and 5 years, respectively).

The minimum application of health resources showed superior results to those recorded for Education. All federal units obtained the maximum score at least once and six (Acre, Alagoas, Bahia, Distrito Federal, Parana and Rio Grande do Norte) fulfilled the requirement for the entire sample.

Two factors may explain the difference between minimum percentages. First, the complementary responsibility of the different levels in providing basic education, as determined by Brazilian law. The State-level government is not the only one formally responsible for providing and assuring quality on public education. Therefore, the low quality of the services provided due to lack of resources might be obscured by responsibility sharing with municipalities or even the Federal Government. Second, the higher percentage of obligatory expenditure is set in a way higher standard than the health expenditure (25% against 12%), which builds a more severe restriction, especially for the states that have high costs of salaries and debt interests.

With the results of the constitutional minimum in education and health equally weighted, the Federative Units of São Paulo, Acre and Amapá had the highest average scores (0.9800, 0.9784 and 0.9707 respectively). However, Ceará was the state that other times obtained the maximum score, because it met the constitutional minimum health and education for 11 years among the 15 possible. The states with the worst average scores were Espírito Santo (0.7651), Pernambuco (0.7856) and Mato Grosso (0.7926). In addition, nine other states did not obtain the maximum score for any of the years of the sample.

4.2 Governance Incidence

After measuring the Governance Intensity for each Brazilian state, the following step was to investigate how a citizen could perceive this governance. For this goal, the Governance Incidence is the result of the weighted sum of the Intensity. As weights, we determined the proportion of population living in each State, as in Equation 3:

$$Incidence_{Year} = \sum_{n=1}^{27} Intensity \times \frac{Population_{State}}{Population_{Total}} \qquad (3)$$

The underlying concept for this Intensity is the neutrality of the law, referring to every citizen as an equal share of the country. Thus, it is proper to define an equal weight to each citizen instead of ranking the states and verifying relative advantages among the states.

Table 5 shows that the first year in the series, 2000, holds the lowest value for the overall Governance Incidence. This comes mostly from the extremely low scores of the Debt, as well as the low values of health and education allocations[20].

Table 5 – Governance Incidence Population-Weighted for Brazilian States 2000-2014

Year	Population-Weighted Scores					
	Governance Incidence	Score A	Score B	Score C	Score D	Score E
2000	0.8681	0.9862	0.9934	0.5841	0.9077	0.8693
2001	0.8847	0.9881	0.9963	0.5711	0.9174	0.9507
2002	0.8797	0.9916	0.9958	0.5552	0.9332	0.9227
2003	0.8812	0.9795	0.9995	0.5693	0.9385	0.9193
2004	0.8807	0.9893	1.0000	0.5868	0.9384	0.8888
2005	0.8853	0.9882	1.0000	0.6129	0.9441	0.8813
2006	0.8836	0.9493	1.0000	0.6372	0.9438	0.8875
2007	0.8900	0.9534	1.0000	0.6698	0.9387	0.8881
2008	0.8991	0.9777	1.0000	0.6965	0.9261	0.8951
2009	0.9135	0.9905	1.0000	0.7123	0.9455	0.9192
2010	0.9065	0.9918	1.0000	0.7173	0.9321	0.8910
2011	0.9117	0.9885	1.0000	0.7346	0.9325	0.9026
2012	0.9088	0.9927	0.9900	0.7315	0.9359	0.8938
2013	0.8985	0.9884	0.9899	0.7383	0.9004	0.8754
2014	0.8958	0.9802	0.9838	0.7286	0.9158	0.8705

The year 2001 held an inversion in the worst criteria for the states. Planning accuracy was even worse than the constitutional requirements of financial allocation for Education and Health. Meanwhile, Debt is still the lowest grade for the states altogether, even lower than in 2000.

The next years, 2001-2002, show considerable improvement on the grades achieved, as shown in Table 5. As a clear effect of the enactment of the Fiscal Responsibility Law, the States increased their average scores in four out of five dimensions under analysis. The improvements, however, were not enough on the Debt dimension, which kept being critical for the states performance all along the sample.

[20] We acknowledge that the Constitutional Amendment 29 dates back from the year 2000, so one should not be legally forced to spend the minimum amount before the Amendment came into effect in 2001. However, as an academic exercise, we analyze the data as if it were the current norm.

4.3 Testing for Reliability and Validity

4.3.1 Reliability Test: Internal Consistency using Correlation Matrix

The reliability of the proposed indicator was assessed via two measurements. In the first, we checked the internal consistence of the values obtained using a correlation matrix for the indicator and its constructs, as shown in Table 6. The indicator we now propose holds strong internal consistence. We verified the presence of positive correlations to all the components, individually, with significance of 0.001, which means that all the components are relevant for the whole indicator, with the correct positive signal.

The results also reveal that the grades are mostly influenced by the debt criteria, which has strong negative impact for the state-level negative current conditions for most states. In this sense, it also requires deeper further studies, focused in determining the specific conditions for each state.

Furthermore, two positive correlations were found within the indicator constructs. First, we found a weak positive correlation between the current balance and the debt dimensions (B and C). Further work should check the causality direction, but it is and empirically expected that negative unbalance causes debt increase.

Table 6 - Correlation Matrix for Dimensional Results

	Intensity	A	B	C	D	E
Intensity	1					
A	0.24***	1				
B	0.17***	-0.05	1			
C	0.83***	0.02	0.19***	1		
D	0.23***	0.04	-0.03	-0.09	1	
E	0.50***	0.05	-0.01	0.11*	-0.06	1

Note: Significance: *0,005; ***0,001.

Our results show a second positive correlation between debt and minimum allocations in education and health (C and E). Despite this correlation being less significant (0.11), governments should not neglect the harmful effects of the potential trade-off between these two constructs, since a poorer debt management could endanger obligations with social policy in these areas, increasing the mechanisms that would ensure this allocation, even in high debt scenarios.

This result also holds an important social meaning, endorsed by the Citizen Debt Auditing network worldwide, for whom Debt may be a mechanism of transference of public resources to the financial private sector.

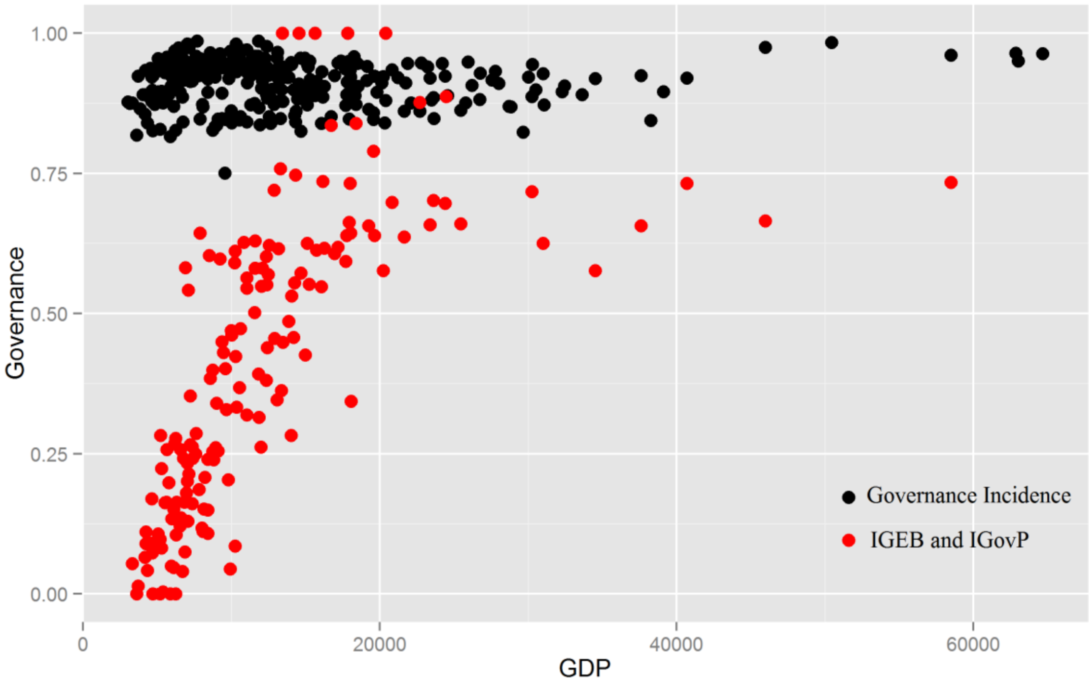
4.3.2 Reliability Test: External Validity

After checking the internal consistence, we compared the results achieved with those provided by the two former attempts to measure subnational governance in Brazil using correlation matrices. For the years 2004-2009, our comparison was to IGEB, developed by Miranda (2012). For 2010, our comparison was to IGovP, developed by Oliveira and Pisa (2015). With results displayed in Table 7, the GI had a negative correlation to both previous indicators in Brazil for all the available sample. The higher value or this correlation was found in IGovP, which is consistent to our findings due to the lack of quantitative consistency tests in the construction of Oliveira and Pisa (2015).

Table 7 - Correlation Between GI and Previous Governance Indices for Brazilian States

	Year					
	IGEB					IGovP
Correlation GI – Other Indicators	2004	2005	2006	2007	2008	2010
	-0.1557	-0.3082	-0.2981	-0.2976	-0.2579	-0.4321

Figure 3 - Scatterplot of Measured Governance and GDP for Brazilian States



In this sense, the plotted indicators with *per capita* GDP reveal clear patterns. Figure 3 shows in black dots the results for GI, which do not have a clear correlation to GDP. However, the red dots that represent the results of IGEB and IGovP have a clear upward trend as the GDP increases. Even if one could treat the extreme right values on the plot, this trend would be even more evident.

The correlation values for both groups reaffirm this evidence, as our indicator does not have a relevant correlation to the GDP: -0.07 for the sample. On the other hand, the previous attempts to measure governance did not have any yearly values lower than 0.70, and a mean of 0.73 correlation with the state GDP for the whole sample. In other words, it is likely that our results were that different from the previous ones as the concept of Governance previously used was mainly measuring wealth.

5 Contributions and Restrictions of the Thesis

As the main finding of this research, we created a composite indicator, identifying legal criteria and estimating grades for the financial governance of Brazilian states between 2000 and 2014. We now dedicate this section to formalize the contributions for theory and knowledge, and, in the second topic, restrictions and intentional omissions for this analysis.

5.1 Contributions for Theory and Knowledge

As a contribution for theory, we embody the most recent advances in the Public Value theory (or theories) to the Public Finance traditional analysis by developing the link between the desired outcomes defined Jørgensen and Bozeman (2007) and the incomes defined by Moore (2014), using the Public Governance criteria. In other words, this thesis defines how responsive to the public wishes governments are by using an allocative power in order to fulfil legal requirements for state-level agency, as a response for having no privileged groups under the action of the state and wishing the best use of the taxpayer resources to those issues that might be considered *public*.

As a contribution to knowledge, or a practical application of the contribution for theory, our indicator aims to be a more assertive tool for measuring public sector performance. For this achievement, we presented a new metric for Public Value, strictly based on constitutional requirements for financial allocation, attempting to provide a comparable measure across the states. From this point, we aim to determine a new, steady pattern of analysis, creating a new parameter for future research, public policy analysis or further academic and governmental purposes.

In this sense, we understand that this indicator fulfils the properties and requirements set in the literature, divided in Table 8 into essential and complementary. The difference between them is that the complementary properties might face trade-off analysis (which was not the case here) according to the context under evaluation.

Table 8: Properties of Indicators, Characteristics and Description

Characteristic	Property	Description

Essential	Relevance	Representativeness Simplicity Sensibility for Changes Comparability Wide scope Existence of Reference Values
	Adequacy for Analysis	Scientific fundamentals Consensus on validity Usefulness Measurability with permanent update
	Reliability	Trustable sources Recognized methodologies for data collecting, processing and results exposal
Complementary	Simplicity	Easy to obtain, construct, maintain, disclosure and comprehension.
	Sensibility	Quick responsiveness to reflect the determined interventions
	Disaggregated	Possibility of performing regionalized analysis
	Steadiness	Potential time-series Low intervention by other variables
	Measurability	Precision No ambiguity
	Clearness	Registered procedures

Source: Brasil (2012), Ferreira, Cassiolato and Gonzalez (2009), Januzzi (2005), Magalhães (2004), OCDE (2002), Rua (2004).

5.2 Restrictions and intentional omissions

Two main restrictions can be listed for this thesis. First, the lack of strict regulation on public budget reports before the Fiscal Responsibility Law dismantled any possibilities of expanding this analysis with the existing data. However, this restriction will not last much longer, as one can expect improvements or, at least, the remanence of the existing format for the financial reports could make time-series analysis feasible over the next decade.

The second restriction relates to the limits imposed by the Fiscal Responsibility Law on the personnel expenditures by the states. Article 18 of the Law defines that:

> "Art. 18: For the purposes of this Supplementary Law, total personnel expenditure is defined as: the sum of expenditures incurred by the member of the Federation with active and inactive workers, and retirees, in connection with elective mandates, positions, functions or jobs; civil and military personnel and members of the Branches of the government, with any kind of remuneration, such as wages and fixed and variable benefits, subsidies, pensions, including any additional payments, bonuses, overtime and fringe benefits of any kind, as well as social security charges and contributions withheld by the member of the Federation on behalf of the social security agencies." (Brasil, 2000)

Article 19 of the same Law states that these expenses should not exceed 60 percent of the net current revenues, divided in: 2 percent for the Office of the State Prosecutor; 3 percent for the Legislative Branch; 6 percent for the Judiciary Branch; and 49 percent for the Executive Branch.

Furthermore, the first paragraph of article 18 defines *Other Personnel Expenditure* as a proper procedure to register "the amounts of outsourcing contracts relating to the substitution of public servants and employees" (Brasil, 2000).

However, there is a wide discussion on the misuse of the services contracting items for personnel outsourcing, since the former contracts are allowed and regulated by Brazilian laws, including the Law of Public Purchases, number 8.666/93.

For this topic, Di Pietro (2015) highlights the illegal characteristics of this procedure, and Ferraz (2007) draws a line between activities that should and should not be legally outsourced, although referenced by a Decree that is even older than the law.

Legal or not – as this is not the object of this thesis –, these contracts have been widely used to hide outsourcing from the Audit Courts and exempt the governments from paying social charges over these employees, as well as to create opportunities for pork barrel politics and nepotism. According to Di Pietro (2015), the Federal Government and all the states and municipalities use this resource, cheating the personnel expenditure limits and exempting the public administration from the legal effects of the actions driven by these employees.

Furthermore, had we chosen to consider this legal restriction in spite of all the evidences against it, our database would probably bring incorrect data for two main reasons. First, each state is completely free to execute the budget along the year. As a consequence, these controversial contracts could be *hidden* anywhere, making a thorough auditing procedure the only possible way of finding the real values. Second, eventually belated payroll execution could bring values to the wrong years, such as in cases registered in Minas Gerais, Rio de Janeiro and Rio Grande do Sul.

6 Concluding Remarks

This thesis tackles an old challenge of researchers in public issues. Several authors have attempted to measure how governments perform ts in the last years. However, the lack of a *best* performance indicator does not mean that efforts were not made, but, instead, new data availability and research methods always seek to improve the conditions to keep having both empirical and theoretical improvements.

In this sense, contributions have been welcomed from several areas, which include Law, Economics, Sociology, Accounting and Management. This thesis represents one of the first steps on checking Public Finance medium-range data with the conditions that the public officers face for their action. Focusing on Brazil, inequality seems to be systematically neglected on Public Finance, and we now try to shed light on this discussion.

For this discussion, a converging point should be the recent debate concerning the theory of Public Value, which provided the comprehension of measurability according to some condition of fairness – neglected by New Public Management and most of non-theory maximization models.

This work presents the formulation of a financial governance indicator for Brazilian states by establishing weighting criteria and the related notes for the period 2000-2014. Despite the wide range of governance indicators that proliferate every year, this indicator differs from the others in the search for determining exclusively normative criteria, based on existing legal framework. Its potential application would be of immediate use by Public Administration as verification instrument, enabling the citizen an assertive mechanism for monitoring government performance, with nationally applicable criteria (Hood, 2012).

The use of current nationwide time-consistent criteria for measuring governance made possible its backward verification, from the current year to the implementation of the Fiscal Responsibility Law in Brazil, making a consistent gap-free database of 15 years.

The proposed indicator led to fundamentally different results than in previous research that sought an indicator for public governance, such as IGEB (Miranda, 2012) and the IGovP (Oliveira and Pisa, 2015). Two factors led to this discrepancy. First, the incorporation of variables not related to wealth. This choice was due to the criticized use of GDP for public sector performance analysis, either in absolute or weighted by population figures. The incorporation of GDP is not representative of government performance and may distort or mask results in inequality scenarios (Tanzi and Schuknecht, 2000; Stiglitz, 2012; Atkinson, 2015). Thus, our evidence shows that the distribution of the best results is barely correlated to the availability of financial resources as typically south-eastern and southern states, as previous research indicated (Miranda, 2012; Oliveira and Pisa, 2015).

The absence of correlation between GDP and social improvements reinforces the findings proposed by Bourguignon, Bénassy-Quéré, Dercon, Estache, Gunning, Kanbur, Klase, Maxwell, Platteau and Spadaro (2010).

As an extension of the evidence, the adequacy of analysis criteria proposed to the reality of state finances is beyond the scope of this study. Thus, topics such as the redesign of the federal pact, the revision of the constitutional minimum percentages for social expenditure or analysis of state revenue sources, though not as yet addressed, are intrinsically associated with this topic, and have decisive contributions to subnational public finance further studies in Brazil.

As restrictions for this research, we highlight the lack of a database for state budgets in Brazil, which may render some information unavailable according to the will of public servants or politicians.

It would have been possible to rank the states according to the scores, as previous research has done. However, we understand that the ranking system is more harmful than contributory, as the assignment of relative positions might promote erroneous readings on a supposed success against a backdrop of poor general condition.

In the same fashion, we also consider that this indicator should not be used or determined as a managerial target, as the states would face the real risk of entering a *game* condition, as stated by Hood (2006). Among the five damaging possibilities, the states could, in two of them, storm “to meet targets as one point in time”, either with “reported results more or less fabricated”. Consequently, data would show “the target being met, but with no improvement in real performance” (Hood, 2006, p. 519).

In the same fashion, Botero, Nelson and Pratt (2011) remind us that governance indicators mainly differ from other indicators as they should not be used as predictors of governments’ future behaviour, as extra-systemic circumstances, lack of standardization of measurement and low number of observations still persist and may lead to erroneous conclusions. Using the same *gaming* approach, the authors summarize the problems pointed by Hood as attempts to target the indicators, and not the sincere efforts to tackle the underlying revealed problems, reaching what the authors name *the abuse of indicators*.

Among these abuses, we extend the cross-country comparisons to Brazilian states, as they considerably differ from each other, which reinforces our decision not to rank these states and provide erroneous conclusions.

Further advances may arise from this research. If there is any of them that can be said to be more urgent than the others are, one could name the social problems derived from poor financial governance. However, Brazil does not have a consistent database for all the states with regular observations to provide assertive proxies for education and health conditions. Although massive datasets are now provided for education, the time series provided by INEP are not long enough to provide standardized analysis. Even worse, the variables available for health assistance do not match minimum criteria to be organized in a single proxy for the time frame considered in this research. Fortunately, we hope that over the next years this problem will be solved, unless we have dramatic changes for worse in government transparency.

Another possible extension for this thesis is to investigate whether other developing countries who have similar administrative divisions, such as Mexico or Colombia, also have similar legal requirements for subnational governments.

As a final remark, it is relevant to mention that this research does not have any kind of tendency over political parties, association entities or governmental plans. We do not propose a chase for an optimal solution, but an *a posteriori* analytical tool to evaluate how the *public sector* performed. Finally, I also affirm the absence of any conflicts of interest, existing or potential, to carry out this research and further publication.

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8 Appendices

8.1 Appendix 1: Budget laws 2000-2014

The budgeting laws displayed in this Appendix are those used in this thesis. Listed by state and year, we refer the number of each law, the enactment date.

Table 9 - Budget Laws and Corresponding Enactment Dates for Brazilian States 2000-2015

State	2000		2001		2002		2003		2004		2005		2006		2007	
	State Law	Issuing Date	State Law	Issuing Date	State Law	Issuing Date	State Law	Issuing Date	State Law	Issuing Date	State Law	Issuing Date	State Law	Issuing Date	State Law	Issuing Date
AC	1306	24/12/1999	1347	27/12/2000	1425	27/12/2001	1470	27/12/2002	1522	29/12/2003	1593	27/12/2004	1690	21/12/2005	1804	26/12/2006
AL	6142	04/01/2000	6226	15/01/2001	6283	03/01/2002	6352	10/01/2003	6458	22/01/2004	6579	19/01/2005	6691	19/01/2006	6800	24/01/2007
AM	2585	30/12/1999	2625	26/12/2000	2710	27/12/2001	2769	23/12/2002	2870	29/12/2003	2930	21/12/2004	3020	28/12/2005	3106	29/12/2006
AP	494	29/12/1999	596	23/01/2001	649	30/01/2002	729	09/01/2003	796	08/01/2004	877	19/01/2005	958	29/12/2005	1060	10/01/2007
BA	7575	29/12/1999	7755	27/12/2000	7991	28/12/2001	8537	19/12/2002	8968	30/12/2003	9291	29/12/2004	9842	27/12/2005	10548	28/12/2006
CE	12987	29/12/1999	13079	29/12/2000	13182	28/12/2001	13269	30/12/2002	13422	30/12/2003	13558	30/12/2004	13725	29/12/2005	13862	29/12/2006
DF	2514	30/12/1999	2657	29/12/2000	2867	08/01/2002	3119	30/12/2002	3257	29/12/2003	3519	30/12/2004	3766	27/01/2006	3934	29/12/2006
ES	6179	25/02/2000	6487	14/12/2000	7065	28/01/2002	7487	21/07/2003	7725	15/01/2004	7969	17/01/2005	8266	31/01/2006	8458	18/01/2007
GO	13571	28/12/1999	13771	26/12/2000	14080	07/01/2002	14396	13/01/2003	14681	16/01/2004	15075	11/01/2005	15560	16/01/2006	15953	18/01/2007
MA	7497	10/12/1999	7578	15/12/2000	7702	28/11/2001	7800	19/12/2002	8055	19/12/2003	8207	30/12/2004	8359	29/12/2005	8536	14/12/2006
MG	13741	18/01/2000	13825	24/01/2001	14169	15/01/2002	14595	22/01/2003	15031	20/01/2004	15460	13/01/2005	15970	12/01/2006	16696	16/01/2007
MS	2063	28/12/1999	2206	28/12/2000	2390	27/12/2001	2601	27/12/2002	2790	29/12/2003	2967	29/12/2004	3176	28/12/2005	3350	28/12/2006
MT	7240	29/12/1999	7380	27/12/2000	7610	28/12/2001	7880	30/12/2002	8065	30/12/2003	8263	28/12/2004	8340	29/12/2005	8627	29/12/2006
PA	6266	21/12/1999	6343	28/12/2000	6431	27/12/2001	6519	27/12/2002	6612	30/12/2003	6708	29/12/2004	6806	29/12/2005	6939	28/12/2006
PB	6824	29/12/1999	6955	16/01/2001	7043	04/01/2002	7300	27/12/2002	7519	09/01/2004	7717	06/01/2005	7944	10/01/2006	8171	17/01/2007
PE	11724	23/12/1999	11898	19/12/2000	12147	26/12/2001	12298	17/12/2002	12474	01/12/2003	12722	09/12/2004	12933	07/12/2005	13149	04/12/2006
PI	5113	29/12/1999	5179	27/12/2000	5219	28/12/2001	5287	06/01/2003	5365	30/12/2003	5430	29/12/2004	5531	30/12/2005	5619	28/12/2006
PR	12825	28/12/1999	13030	28/12/2000	13386	21/12/2001	13980	26/12/2002	14275	29/12/2003	14600	27/12/2004	14977	28/12/2005	15339	22/12/2006
RJ	3371	17/01/2000	3537	12/01/2001	3743	21/12/2001	4060	30/12/2002	4259	29/12/2003	4490	03/01/2005	4699	04/01/2006	4977	29/12/2006
RN	7795	29/12/1999	7893	19/12/2000	8055	16/01/2002	8263	20/01/2003	8473	12/01/2004	8632	01/02/2005	8797	16/01/2006	8943	15/01/2007
RO	878	31/12/1999	966	15/01/2001	1042	29/01/2002	1179	27/01/2003	1297	29/12/2003	1459	09/03/2005	1584	01/02/2006	1698	01/01/2007
RR	249	17/01/2000	281	23/01/2001	315	31/12/2001	361	03/01/2003	415	08/01/2004	473	11/01/2005	520	16/01/2006	575	29/12/2006
RS	11399	21/12/1999	11564	29/12/2000	11710	20/12/2001	11862	16/12/2002	12020	12/12/2003	12180	09/12/2004	12394	08/12/2005	12662	12/12/2006
SC	11356	26/01/2000	11705	09/01/2001	12110	07/01/2002	12563	15/01/2003	12872	16/01/2004	13327	25/01/2005	13672	09/01/2006	13969	22/01/2007
SE	4161	20/12/1999	4340	21/12/2000	4484	18/12/2001	4700	23/12/2002	5220	16/12/2003	5506	28/12/2004	5782	22/12/2005	6120	22/12/2006
SP	10479	29/12/1999	10707	29/12/2000	11010	28/12/2001	11332	27/12/2002	11607	29/12/2003	11816	30/12/2004	12298	08/03/2006	12549	02/03/2007
TO	1120	16/12/1999	1196	08/12/2000	1285	17/12/2001	1353	19/12/2002	1431	16/12/2003	1544	30/12/2004	1643	28/12/2005	1753	26/12/2006

State	2008		2009		2010		2011		2012		2013		2014		2015	
	State Law	Issuing Date	State Law	Issuing Date	State Law	Issuing Date	State Law	Issuing Date	State Law	Issuing Date	State Law	Issuing Date	State Law	Issuing Date	State Law	Issuing Date
AC	1971	27/12/2007	2093	11/12/2008	2253	21/12/2009	2412	30/12/2010	2523	20/12/2011	2678	27/12/2012	2831	27/12/2013	2882	10/12/2014
AL	6924	08/02/2008	7029	19/01/2009	7146	05/03/2010	7234	04/03/2011	7317	28/12/2011	7446	10/01/2013	7579	27/01/2014	7691	06/04/2015
AM	3202	20/12/2007	3334	26/12/2008	3473	29/12/2009	3571	23/12/2010	3697	26/12/2011	3845	26/12/2012	3978	26/12/2013	4109	22/12/2014
AP	1172	12/12/2007	1283	23/12/2008	1448	13/01/2010	1533	31/12/2010	1617	20/01/2012	1729	11/01/2013	1794	30/12/2013	1856	19/01/2015
BA	10956	28/12/2007	11354	30/12/2008	11630	30/12/2009	12041	29/12/2010	12503	29/12/2011	12612	28/12/2012	12935	31/01/2014	13225	23/01/2015
CE	14054	07/01/2008	14285	30/12/2008	14608	06/01/2010	14827	28/12/2010	15110	02/01/2012	15268	28/12/2012	15495	27/12/2013	15753	30/12/2014
DF	4073	28/12/2007	4293	26/12/2008	4461	30/12/2009	4533	30/12/2010	4744	29/12/2011	5011	28/12/2012	5289	30/12/2013	5442	30/12/2014
ES	8822	25/01/2008	9111	15/01/2009	9400	21/01/2010	9624	20/01/2011	9782	04/01/2012	9979	16/01/2013	10164	06/01/2014	10347	09/02/2015
GO	16194	29/01/2008	16473	23/01/2009	16860	29/12/2009	17266	26/01/2011	17544	11/01/2012	17967	17/01/2013	18366	10/01/2014	18766	08/01/2015
MA	8755	17/03/2008	8928	12/01/2009	9110	30/12/2009	9331	12/01/2011	9554	16/01/2012	9756	15/01/2013	9976	06/01/2014	10183	22/12/2014
MG	17333	10/01/2008	18022	09/01/2009	18693	04/01/2010	19418	03/01/2011	20026	10/01/2012	20625	17/01/2013	21148	15/01/2014	21965	09/04/2015
MS	3485	21/12/2007	3610	19/12/2008	3825	22/12/2009	3998	17/12/2010	4150	19/12/2011	4291	20/12/2012	4462	19/12/2013	4642	26/12/2014
MT	8828	17/01/2008	9077	29/12/2008	9298	30/12/2009	9491	29/12/2010	9686	28/12/2011	9868	28/12/2012	10037	30/12/2013	10243	31/12/2014
PA	7095	23/01/2008	7239	31/12/2008	7370	30/12/2009	7493	28/12/2010	7597	30/12/2011	7688	28/12/2012	7797	14/01/2014	8095	30/12/2014
PB	8485	09/01/2008	8708	02/12/2008	9046	07/01/2010	9331	12/01/2011	9658	06/01/2012	9949	02/01/2013	10262	03/02/2014	10437	12/02/2015
PE	13342	07/12/2007	13679	10/12/2008	13978	17/12/2009	14223	10/12/2010	14640	16/12/2011	14898	20/12/2012	15202	17/12/2013	15436	23/12/2014
PI	5715	26/12/2006	5832	30/12/2008	5962	07/01/2010	6037	30/12/2010	6155	05/01/2012	6305	10/01/2013	6477	16/01/2014	6610	23/12/2014
PR	15750	27/12/2007	16032	30/12/2008	16369	29/12/2009	16739	29/12/2010	17012	14/12/2011	17398	18/12/2012	17886	20/12/2013	18409	29/12/2014
RJ	5182	02/01/2008	5369	01/01/2009	5632	04/01/2010	5858	03/01/2011	6125	28/12/2011	6380	09/01/2013	6668	13/01/2014	6955	13/01/2015
RN	9060	25/01/2008	9170	16/02/2009	9314	01/02/2010	9449	24/01/2011	9613	02/02/2012	9692	18/01/2013	9826	10/01/2014	9933	20/01/2015
RO	1842	28/12/2007	2009	29/12/2008	2210	21/12/2009	2368	22/12/2010	2676	28/12/2011	2961	28/12/2012	3313	20/12/2013	3497	29/12/2014
RR	635	14/01/2008	701	15/01/2009	760	15/01/2010	801	12/01/2011	838	17/01/2012	889	14/01/2013	951	22/01/2014	988	29/01/2015
RS	12880	27/12/2007	13092	18/12/2008	13309	07/12/2009	13574	20/12/2010	13844	07/12/2011	14146	17/12/2012	14375	19/12/2013	14642	17/12/2014
SC	14360	23/01/2008	14648	09/01/2009	15032	30/12/2009	15433	28/12/2010	15723	22/12/2011	15944	21/12/2012	16287	20/12/2013	16530	23/12/2014
SE	6305	19/12/2007	6568	23/12/2008	6830	18/12/2009	7100	23/12/2010	7330	27/12/2011	7589	28/12/2012	7800	03/01/2014	7953	30/12/2014
SP	12788	27/12/2007	13289	22/12/2008	13916	22/12/2009	14309	27/12/2010	14675	28/12/2011	14925	28/12/2012	15265	26/12/2013	15646	23/12/2014
TO	1863	10/12/2007	2010	18/12/2008	2251	07/12/2009	2437	31/03/2011	2547	22/12/2011	2678	20/12/2012	2816	27/12/2013	2942	25/03/2015

8.2Appendix 2: Table of Results for Governance Intensity

Table 10 - Regularity of Budget Cycle Scores

State	Year														
	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
AC	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
AL	0.9918	0.9616	0.9945	0.9753	0.9425	0.9507	0.9507	0.937	0.8959	0.9507	0.8274	0.8301	1	0.9753	0.9288
AM	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
AP	1	0.9397	0.9205	0.9781	0.9808	0.9507	1	0.9753	1	1	0.9671	1	0.9479	0.9726	1
BA	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.9178
CE	1	1	1	1	1	1	1	1	0.9836	1	0.9863	1	0.9973	1	1
DF	1	1	0.9808	1	1	1	0.9288	1	1	1	1	1	1	1	1
ES	0.8493	1	0.926	0.4493	0.9616	0.9562	0.9178	0.9534	0.9342	0.9616	0.9452	0.9479	0.9918	0.9589	0.9863
GO	1	1	0.9836	0.9671	0.9589	0.9726	0.9589	0.9534	0.9233	0.9397	1	0.9315	0.9726	0.9562	0.9753
MA	1	1	1	1	1	1	1	1	0.7918	0.9699	1	0.9699	0.9589	0.9616	0.9863
MG	0.9534	0.937	0.9616	0.9425	0.9479	0.9671	0.9699	0.9589	0.9753	0.9781	0.9918	0.9945	0.9753	0.9562	0.9616
MS	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
MT	1	1	1	1	1	1	1	1	0.9562	1	1	1	1	1	1
PA	1	1	1	1	1	1	1	1	0.9397	1	1	1	1	1	0.9644
PB	1	0.9589	0.9918	1	0.9781	0.9863	0.9753	0.9562	0.9781	1	0.9836	0.9699	0.9863	0.9973	0.9096
PE	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
PI	1	1	1	0.9863	1	1	1	1	1	1	0.9836	1	0.989	0.9753	0.9589
PR	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
RJ	0.9562	0.9699	1	1	1	0.9945	0.9918	1	0.9973	1	0.9918	0.9945	1	0.9781	0.9671
RN	1	1	0.9589	0.9479	0.9699	0.9151	0.9589	0.9616	0.9342	0.874	0.9151	0.937	0.9123	0.9534	0.9753
RO	1	0.9616	0.9233	0.9288	1	0.8164	0.9151	1	1	1	1	1	1	1	1
RR	0.9562	0.9397	1	0.9945	0.9808	0.9726	0.9589	1	0.9644	0.9616	0.9616	0.9699	0.9562	0.9644	0.9425
RS	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
SC	0.9315	0.9781	0.9836	0.9616	0.9589	0.9342	0.9781	0.9425	0.9397	0.9781	1	1	1	1	1
SE	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.9945
SP	1	1	1	1	1	1	0.8192	0.8356	1	1	1	1	1	1	1
TO	1	1	1	1	1	1	1	1	1	1	1	0.7562	1	1	1

Table 11 – Current Balance Results

State	Year														
	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
AC	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
AL	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
AM	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
AP	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
BA	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
CE	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
DF	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
ES	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
GO	1	0.9511	1	1	1	1	1	1	1	1	1	1	1	1	1
MA	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
MG	1	0.9785	0.9602	1	1	1	1	1	1	1	1	1	1	1	1
MS	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
MT	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
PA	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
PB	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
PE	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
PI	1	1	1	0.9692	1	1	1	1	1	1	1	1	1	1	1
PR	0.8836	1	1	1	1	1	1	1	1	1	1	1	1	1	1
RJ	1	1	1	1	1	1	1	1	1	1	1	1	0.9869	1	0.9997
RN	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
RO	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
RR	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
RS	1	1	1	1	1	1	1	1	1	1	1	1	0.9296	0.9181	0.8922
SC	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
SE	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
SP	1	1	1	1	1	1	1	1	1	1	1	1	0.977	0.9745	0.9529
TO	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1

Table 12 – Debt Management – Interest to Current Expenses Ratio Subscore

State	Year														
	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
AC	0.965	0.9661	0.9693	0.95	0.9738	0.9777	0.9791	0.9775	0.982	0.9841	0.9757	0.9714	0.9745	0.9722	0.9733
AL	0.9294	0.9284	0.9254	0.9439	0.9428	0.9475	0.9557	0.9457	0.9619	0.9733	0.9695	0.9681	0.9597	0.9609	0.9698
AM	0.9588	0.964	0.9669	0.9636	0.9732	0.9771	0.981	0.9831	0.9862	0.9863	0.9841	0.9824	0.9851	0.9867	0.9835
AP	0.9873	0.9907	0.9949	0.9973	0.9918	0.9941	0.9902	0.9968	0.997	0.9954	0.9918	0.9911	0.9935	0.9893	0.9817
BA	0.933	0.947	0.9506	0.9442	0.9561	0.9583	0.9625	0.9662	0.9716	0.9754	0.9793	0.9814	0.983	0.9855	0.985
CE	0.9449	0.9524	0.9526	0.9535	0.9599	0.9656	0.9769	0.9751	0.9804	0.9855	0.9882	0.9868	0.9851	0.9866	0.9863
DF	0.9808	0.9836	0.9856	0.9775	0.981	0.9842	0.986	0.9862	0.9884	0.9889	0.9887	0.9894	0.9907	0.9911	0.9904
ES	0.9664	0.9688	0.9721	0.9715	0.9661	0.9785	0.9819	0.9843	0.9858	0.9875	0.9891	0.9892	0.9877	0.9859	0.9835
GO	0.9489	0.96	0.9513	0.9577	0.965	0.9602	0.9481	0.9574	0.9539	0.9525	0.9557	0.9451	0.9452	0.9356	0.951
MA	0.9528	0.96	0.9625	0.9618	0.9403	0.9418	0.9439	0.9383	0.9408	0.9424	0.9373	0.9325	0.9374	0.9671	0.9813
MG	0.9443	0.9313	0.9417	0.9374	0.9369	0.935	0.934	0.9342	0.9353	0.9454	0.951	0.9528	0.9627	0.9629	0.9624
MS	0.9621	0.9628	0.9462	0.9595	0.9585	0.9592	0.9613	0.9718	0.9729	0.9745	0.9802	0.9797	0.9787	0.9818	0.9841
MT	0.9302	0.929	0.9203	0.9384	0.9488	0.9408	0.9355	0.9402	0.9469	0.9491	0.9406	0.9593	0.984	0.9773	0.9732
PA	0.9646	0.9672	0.972	0.9714	0.9764	0.9797	0.9837	0.984	0.9862	0.9861	0.9857	0.9832	0.9866	0.9896	0.9896
PB	0.9567	0.9577	0.9429	0.9504	0.959	0.9628	0.9561	0.9647	0.9803	0.9814	0.9825	0.9836	0.9849	0.9858	0.9868
PE	0.9555	0.963	0.963	0.9594	0.9669	0.9702	0.97	0.9766	0.9815	0.9847	0.9856	0.9855	0.985	0.983	0.9818
PI	0.9254	0.9436	0.9569	0.9519	0.9398	0.9564	0.9483	0.9312	0.9506	0.9705	0.9761	0.9761	0.9802	0.9851	0.9836
PR	0.9514	0.9465	0.9452	0.9404	0.9465	0.9499	0.9591	0.9589	0.9625	0.9655	0.9685	0.9725	0.9761	0.9782	0.979
RJ	0.9503	0.9331	0.927	0.9275	0.9391	0.9339	0.9366	0.9334	0.9384	0.9467	0.9542	0.9563	0.9587	0.9591	0.9573
RN	0.9744	0.9772	0.9732	0.975	0.981	0.9841	0.9857	0.9862	0.988	0.9896	0.9894	0.9891	0.99	0.9922	0.9926
RO	0.9364	0.9424	0.953	0.9444	0.9521	0.9583	0.9619	0.9644	0.9708	0.9751	0.9763	0.9769	0.9799	0.9806	0.9869
RR	0.9887	0.9887	0.9842	0.9924	0.9907	0.9916	0.9897	0.9928	0.9925	0.9933	0.9848	1	0.9813	0.9806	0.9663
RS	0.9777	0.9785	0.9783	0.981	0.9818	0.9833	0.985	0.9867	0.9889	0.9929	0.9953	0.9965	0.9631	0.9666	0.9698
SC	0.9709	0.9544	0.9604	0.9428	0.9392	0.943	0.9302	0.9316	0.937	0.9353	0.9382	0.9332	0.9092	0.9653	0.9618
SE	0.9623	0.962	0.9614	0.9611	0.9673	0.9659	0.9737	0.9736	0.9815	0.9843	0.9831	0.9801	0.98	0.9804	0.9793
SP	0.9381	0.9333	0.9349	0.9303	0.9372	0.9346	0.9368	0.9466	0.9505	0.956	0.9577	0.9556	0.9555	0.9577	0.9543
TO	0.9788	0.9808	0.9842	0.9815	0.9839	0.9873	0.9903	0.9906	0.9913	0.9917	0.9895	0.9883	0.9874	0.9847	0.9852

Table 13 – Debt Management – Net Current Debt Ratio Subscore

State	Year														
	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
AC	0.48	0.585	0.635	0.66	0.69	0.775	0.74	0.795	0.86	0.815	0.73	0.75	0.71	0.655	0.63
AL	0	0.11	0	0	0	0	0	0	0.015	0.095	0.19	0.26	0.25	0.27	0.23
AM	0.5	0.655	0.665	0.72	0.775	0.815	0.835	0.905	0.935	0.88	0.865	0.905	0.925	0.89	0.845
AP	0.975	0.975	0.86	0.86	0.885	0.945	0.945	0.95	0.98	0.945	0.91	0.94	0.91	0.87	0.795
BA	0.18	0.145	0.09	0.185	0.29	0.415	0.49	0.59	0.64	0.685	0.74	0.77	0.755	0.765	0.8
CE	0.565	0.53	0.41	0.47	0.54	0.635	0.7	0.81	0.88	0.915	0.86	0.855	0.86	0.855	0.79
DF	0.82	0.825	0.8	0.82	0.86	0.825	0.835	0.905	0.92	0.915	0.91	0.92	0.95	0.92	0.895
ES	0.51	0.585	0.42	0.49	0.635	0.78	0.83	0.905	0.95	0.96	0.915	0.93	0.925	0.895	0.865
GO	0	0	0	0	0	0.075	0.09	0.195	0.3	0.36	0.35	0.495	0.49	0.54	0.55
MA	0	0	0	0	0.13	0.335	0.425	0.545	0.63	0.66	0.68	0.765	0.795	0.81	0.77
MG	0.295	0	0	0	0	0	0.055	0.06	0.12	0.105	0.09	0.09	0.125	0.085	0.105
MS	0	0	0	0	0	0	0.095	0.26	0.425	0.425	0.4	0.435	0.475	0.49	0.51
MT	0	0.015	0.205	0.12	0.35	0.445	0.45	0.53	0.65	0.73	0.725	0.8	0.85	0.825	0.79
PA	0.715	0.685	0.665	0.695	0.7	0.77	0.78	0.825	0.86	0.88	0.855	0.905	0.945	0.95	0.95
PB	0.235	0.45	0.29	0.415	0.46	0.555	0.62	0.7	0.76	0.83	0.82	0.875	0.87	0.865	0.815
PE	0.57	0.44	0.375	0.415	0.48	0.585	0.665	0.735	0.79	0.785	0.81	0.805	0.77	0.735	0.71
PI	0.135	0.13	0.18	0.24	0.29	0.455	0.575	0.61	0.7	0.7	0.73	0.715	0.75	0.705	0.695
PR	0.355	0.33	0.38	0.475	0.46	0.355	0.37	0.42	0.405	0.44	0.555	0.62	0.7	0.7	0.71
RJ	0	0.05	0	0	0	0.05	0.14	0.135	0.2	0.185	0.22	0.27	0.175	0.23	0.11
RN	0.645	0.73	0.675	0.735	0.81	0.84	0.87	0.89	0.905	0.915	0.9	0.935	0.945	0.925	0.92
RO	0.445	0.475	0.275	0.395	0.485	0.575	0.64	0.68	0.75	0.735	0.73	0.75	0.775	0.69	0.69
RR	0.845	0.86	0.825	0.785	0.98	0.925	0.95	0.935	0.935	0.845	0.98	0.95	0.9	0.815	0.91
RS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SC	0.085	0.275	0.025	0.165	0.18	0.405	0.455	0.55	0.615	0.695	0.685	0.77	0.795	0.76	0.775
SE	0.56	0.61	0.635	0.66	0.675	0.775	0.715	0.79	0.89	0.865	0.835	0.785	0.735	0.725	0.715
SP	0.035	0.015	0	0	0	0.015	0.055	0.145	0.185	0.25	0.235	0.27	0.23	0.29	0.26
TO	0.825	0.865	0.815	0.87	0.825	0.93	0.935	0.96	0.95	0.945	0.92	0.895	0.895	0.87	0.835

Table 14 – Debt Management Scores

State	Year														
	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
AC	0.7225	0.7756	0.8021	0.805	0.8319	0.8763	0.8595	0.8863	0.921	0.8996	0.8529	0.8607	0.8423	0.8136	0.8017
AL	0.4647	0.5192	0.4627	0.472	0.4714	0.4738	0.4779	0.4729	0.4885	0.5342	0.5797	0.6141	0.6049	0.6155	0.5999
AM	0.7294	0.8095	0.8159	0.8418	0.8741	0.8961	0.908	0.944	0.9606	0.9331	0.9246	0.9437	0.955	0.9383	0.9142
AP	0.9811	0.9828	0.9275	0.9286	0.9384	0.9696	0.9676	0.9734	0.9885	0.9702	0.9509	0.9656	0.9517	0.9296	0.8884
BA	0.5565	0.546	0.5203	0.5646	0.6231	0.6867	0.7263	0.7781	0.8058	0.8302	0.8597	0.8757	0.869	0.8752	0.8925
CE	0.755	0.7412	0.6813	0.7118	0.7499	0.8003	0.8384	0.8925	0.9302	0.9502	0.9241	0.9209	0.9226	0.9208	0.8882
DF	0.9004	0.9043	0.8928	0.8988	0.9205	0.9046	0.9105	0.9456	0.9542	0.952	0.9493	0.9547	0.9704	0.9556	0.9427
ES	0.7382	0.7769	0.6961	0.7308	0.8006	0.8792	0.906	0.9446	0.9679	0.9737	0.952	0.9596	0.9564	0.9405	0.9242
GO	0.4745	0.48	0.4757	0.4789	0.4825	0.5176	0.519	0.5762	0.627	0.6563	0.6528	0.72	0.7176	0.7378	0.7505
MA	0.4764	0.48	0.4813	0.4809	0.5352	0.6384	0.6845	0.7417	0.7854	0.8012	0.8086	0.8487	0.8662	0.8885	0.8756
MG	0.6196	0.4657	0.4708	0.4687	0.4684	0.4675	0.4945	0.4971	0.5276	0.5252	0.5205	0.5214	0.5438	0.524	0.5337
MS	0.481	0.4814	0.4731	0.4797	0.4793	0.4796	0.5281	0.6159	0.699	0.6997	0.6901	0.7074	0.7269	0.7359	0.7471
MT	0.4651	0.472	0.5627	0.5292	0.6494	0.6929	0.6927	0.7351	0.7984	0.8396	0.8328	0.8797	0.917	0.9011	0.8816
PA	0.8398	0.8261	0.8185	0.8332	0.8382	0.8749	0.8819	0.9045	0.9231	0.933	0.9203	0.9441	0.9658	0.9698	0.9698
PB	0.5958	0.7039	0.6164	0.6827	0.7095	0.7589	0.788	0.8324	0.8702	0.9057	0.9012	0.9293	0.9275	0.9254	0.9009
PE	0.7628	0.7015	0.669	0.6872	0.7235	0.7776	0.8175	0.8558	0.8858	0.8848	0.8978	0.8953	0.8775	0.859	0.8459
PI	0.5302	0.5368	0.5685	0.5959	0.6149	0.7057	0.7617	0.7706	0.8253	0.8352	0.853	0.8455	0.8651	0.8451	0.8393
PR	0.6532	0.6382	0.6626	0.7077	0.7033	0.6524	0.6645	0.6894	0.6837	0.7027	0.7617	0.7963	0.838	0.8391	0.8445
RJ	0.4751	0.4916	0.4635	0.4637	0.4696	0.4919	0.5383	0.5342	0.5692	0.5659	0.5871	0.6132	0.5669	0.5945	0.5336
RN	0.8097	0.8536	0.8241	0.855	0.8955	0.9121	0.9278	0.9381	0.9465	0.9523	0.9447	0.962	0.9675	0.9586	0.9563
RO	0.6907	0.7087	0.614	0.6697	0.7185	0.7667	0.8009	0.8222	0.8604	0.8551	0.8532	0.8634	0.8775	0.8353	0.8385
RR	0.9168	0.9243	0.9046	0.8887	0.9853	0.9583	0.9699	0.9639	0.9638	0.9192	0.9824	0.975	0.9407	0.8978	0.9381
RS	0.4888	0.4893	0.4891	0.4905	0.4909	0.4916	0.4925	0.4933	0.4945	0.4964	0.4976	0.4983	0.4815	0.4833	0.4849
SC	0.528	0.6147	0.4927	0.5539	0.5596	0.674	0.6926	0.7408	0.776	0.8152	0.8116	0.8516	0.8521	0.8626	0.8684
SE	0.7612	0.786	0.7982	0.8106	0.8211	0.8705	0.8444	0.8818	0.9358	0.9246	0.9091	0.8826	0.8575	0.8527	0.8472
SP	0.4865	0.4742	0.4675	0.4651	0.4686	0.4748	0.4959	0.5458	0.5677	0.603	0.5964	0.6128	0.5928	0.6238	0.6071
TO	0.9019	0.9229	0.8996	0.9257	0.9045	0.9586	0.9627	0.9753	0.9706	0.9683	0.9548	0.9417	0.9412	0.9273	0.9101

Table 15 – Planning Accuracy Revenue Gap- Subscore

State	Year														
	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
AC	0.8217	0.8629	0.7872	0.8795	0.9955	0.8751	0.8763	0.9043	0.8807	0.9363	0.9342	0.9825	0.541	0.5017	0.4779
AL	0.8757	0.5935	0.9104	0.8139	0.7079	0.8325	0.8495	0.8172	0.8744	0.8223	0.996	0.9441	0.9326	0.8542	0.9317
AM	0.9746	0.9264	0.8641	0.8982	0.9181	0.8385	0.9489	0.9427	0.8555	0.965	0.8719	0.9561	0.8763	0.8246	0.8676
AP	0.8162	0.7788	0.8404	0.9616	0.9989	0.8551	0.7941	0.814	0.8542	0.9512	0.9497	0.823	0.8677	0.7833	0.9593
BA	0.7999	0.973	0.999	0.9986	0.9277	0.9957	0.9699	0.9998	0.9685	0.9511	0.9363	0.8587	0.9051	0.8932	0.8578
CE	0.8516	0.9553	0.9783	0.962	0.7906	0.998	0.9932	0.995	0.9781	0.9776	0.8859	0.982	0.8884	0.9228	0.9006
DF	0.8086	0.9589	0.9393	0.3724	0.9079	0.8746	0.9635	0.8533	0.9345	0.9511	0.8061	0.7029	0.8201	0.8471	0.868
ES	0.7056	0.9515	0.8865	0.8602	0.9121	0.9261	0.9028	0.9275	0.9793	0.9391	0.981	0.9164	0.9127	0.7896	0.8001
GO	0.6963	0.6229	0.8817	0.991	0.6487	0.6676	0.7907	0.8998	0.9862	0.9145	0.951	0.9546	0.9555	0.9025	0.8177
MA	0.7871	0.8613	0.882	0.9977	0.938	0.8603	0.9123	0.9257	0.8642	0.946	0.9852	0.8779	0.9946	0.8789	0.9174
MG	0.9968	0.8849	0.8043	0.9632	0.9893	0.939	0.9283	0.9363	0.8915	0.9609	0.8834	0.8217	0.7901	0.8735	0.9313
MS	0.9762	0.883	0.9235	0.9171	0.8982	0.9799	0.8804	0.9626	0.9371	0.9494	0.8886	0.9862	0.9831	0.8482	0.8527
MT	0.9649	0.9699	0.9905	0.8604	0.8969	0.9677	0.9472	0.8777	0.8514	0.8793	0.882	0.9482	0.9749	0.7036	0.5466
PA	0.9582	0.9467	0.9514	0.9722	0.9753	0.9599	0.912	0.9406	0.9455	0.9706	0.9186	0.8354	0.9072	0.7651	0.9836
PB	0.5912	0.9294	0.7729	0.8153	0.771	0.9613	0.9415	0.9622	0.9807	0.9632	0.9685	0.9606	0.9005	0.9133	0.9023
PE	0.9778	0.84	0.8056	0.8507	0.9665	0.9425	0.9614	0.8953	0.9538	0.9978	0.9559	0.9662	0.9661	0.992	0.9609
PI	0.8859	0.9107	0.9422	0.7896	0.9642	0.9055	0.8123	0.8241	0.8705	0.8446	0.9232	0.9941	0.903	0.8109	0.8434
PR	0.9813	0.6254	0.9794	0.9618	0.9513	0.7903	0.8089	0.826	0.9327	0.7945	0.8717	0.9307	0.8341	0.9433	0.9895
RJ	0.9386	0.9761	0.9882	0.9193	0.8819	0.9344	0.9736	0.991	0.9285	0.8931	0.9329	0.9784	0.9931	0.9496	0.9337
RN	0.962	0.9598	0.9432	0.9361	0.8812	0.99	0.9628	0.9057	0.9571	0.8241	0.9405	0.7789	0.9252	0.9854	0.9303
RO	0.8759	0.9169	0.8667	0.8824	0.9052	0.9903	0.9829	0.9915	0.8685	0.9406	0.9623	0.9112	0.9667	0.9247	0.8888
RR	0.8065	0.8306	0.7126	0.9368	0.9681	0.8609	0.812	0.7773	0.6483	0.7187	0.716	0.3465	0.5967	0.5433	0.7022
RS	0.9809	0.994	0.9881	0.9567	0.9477	0.9623	0.9217	0.9923	0.8713	0.9984	0.9484	0.99	0.9799	0.9301	0.9273
SC	0.7576	0.5388	0.6619	0.4759	0.8364	0.9723	0.7619	0.9747	0.9263	0.9401	0.9789	0.9845	0.9658	0.7094	0.727
SE	0.8134	0.9385	0.8667	0.9326	0.9786	0.9459	0.9511	0.9432	0.954	0.917	0.8973	0.9027	0.8208	0.8827	0.893
SP	0.8912	0.9232	0.9373	0.9422	0.946	0.9182	0.965	0.8831	0.8011	0.8994	0.8416	0.8838	0.9065	0.881	0.9027
TO	0.989	0.9796	0.9727	0.8572	0.8417	0.9862	0.9348	0.9674	0.8862	0.9272	0.8809	0.8561	0.8498	0.9868	0.9734

Table 16 – Planning Accuracy Expenditure Gap Subscore-

State	Year														
	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
AC	0.8442	0.8647	0.7856	0.8751	0.9935	0.9648	0.845	0.9344	0.9546	0.9692	0.9135	0.9971	0.5623	0.5393	0.5248
AL	0.9235	0.494	0.8503	0.8467	0.7274	0.8888	0.8291	0.7551	0.8649	0.8615	0.989	0.9309	0.989	0.9916	0.9813
AM	0.8309	0.8606	0.8533	0.9022	0.9212	0.8358	0.9542	0.9844	0.8778	0.9403	0.8666	0.955	0.9343	0.9092	0.9566
AP	0.9398	0.8189	0.8443	0.9455	0.9796	0.9826	0.8153	0.8825	0.938	0.991	0.9556	0.9153	0.947	0.9135	0.8548
BA	0.7896	0.9905	0.9745	0.9777	0.9205	0.9888	0.9639	0.9796	0.9575	0.9483	0.9435	0.8567	0.9529	0.99	0.9937
CE	0.8934	0.9799	0.9662	0.9398	0.7989	0.9581	0.9318	0.9275	0.9563	0.9705	0.8648	0.9906	0.8992	0.9343	0.978
DF	0.8226	0.9442	0.9242	0.3691	0.9055	0.8729	0.9741	0.7848	0.9603	0.9731	0.7803	0.6981	0.8289	0.8251	0.7693
ES	0.7271	0.9739	0.8864	0.9273	0.9545	0.9867	0.8819	0.8849	0.9366	0.9662	0.9144	0.9263	0.9755	0.9801	0.9771
GO	0.6737	0.8386	0.8946	0.9887	0.6883	0.679	0.7995	0.9117	0.9725	0.9394	0.999	0.8961	0.9765	0.807	0.9685
MA	0.5233	0.8349	0.8651	0.9328	0.8663	0.9976	0.9421	0.9602	0.8869	0.9201	0.9541	0.8872	0.9763	0.9281	0.966
MG	0.9763	0.9722	0.9439	0.9756	0.9851	0.9473	0.9309	0.9418	0.9056	0.9681	0.8982	0.8272	0.8189	0.9471	0.9934
MS	0.9707	0.8783	0.9152	0.8872	0.8832	0.974	0.9132	0.9782	0.9773	0.9561	0.9302	0.996	0.9775	0.9153	0.9101
MT	0.9924	0.9401	0.9164	0.8526	0.9041	0.9642	0.9398	0.8809	0.8714	0.8328	0.9084	0.9715	0.989	0.993	0.9717
PA	0.9551	0.9483	0.9576	0.9745	0.9752	0.9837	0.9129	0.9789	0.9811	0.9365	0.9399	0.8904	0.9685	0.8939	0.9618
PB	0.4991	0.9787	0.8892	0.898	0.8668	0.9395	0.9442	0.939	0.9373	0.9176	0.9635	0.8905	0.9398	0.8429	0.8502
PE	0.7759	0.9243	0.9074	0.8916	0.9739	0.9573	0.8522	0.8663	0.9819	0.9881	0.9781	0.9792	0.9417	0.8549	0.9764
PI	0.9618	0.898	0.8546	0.9696	0.9492	0.9646	0.7917	0.7646	0.8584	0.8334	0.9147	0.9948	0.9796	0.9865	0.9742
PR	0.9376	0.6377	0.9906	0.9617	0.9212	0.7767	0.8245	0.8213	0.9091	0.7991	0.8706	0.9089	0.861	0.8131	0.8658
RJ	0.987	0.9747	0.9305	0.9203	0.876	0.9321	0.9768	0.9689	0.9774	0.9161	0.9294	0.994	0.9967	0.985	0.9817
RN	0.9412	0.9669	0.9673	0.9492	0.9025	0.9522	0.9798	0.9032	0.9357	0.8567	0.9002	0.7594	0.9183	0.8823	0.798
RO	0.8569	0.892	0.848	0.9063	0.9031	0.9941	0.9866	0.975	0.8983	0.9621	0.9654	0.9561	0.9723	0.9873	0.963
RR	0.7405	0.7747	0.8829	0.8477	0.7577	0.9302	0.8472	0.7744	0.7894	0.7712	0.7979	0.7596	0.7264	0.5805	0.9685
RS	0.9212	0.9463	0.9583	0.931	0.9895	0.9831	0.9727	0.9772	0.8873	0.998	0.9441	0.9766	0.9985	0.9889	0.9873
SC	0.7664	0.5037	0.7006	0.6517	0.8509	0.9741	0.8931	0.9256	0.9902	0.9697	0.9787	0.9952	0.9476	0.995	0.997
SE	0.8601	0.9591	0.8911	0.9452	0.9786	0.9889	0.9096	0.8643	0.9843	0.9455	0.8897	0.9005	0.8434	0.8812	0.8856
SP	0.8921	0.9242	0.9484	0.9489	0.9467	0.9202	0.9663	0.8844	0.8024	0.904	0.8548	0.8798	0.9052	0.8766	0.9012
TO	0.9274	0.8425	0.9447	0.7983	0.7758	0.8956	0.8607	0.8532	0.8367	0.8403	0.7853	0.7545	0.6691	0.8057	0.7787

Table 17 – Planning Accuracy   Budget-Financial Gap Subscore-

State	Year														
	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
AC	0.9733	0.9979	0.998	0.995	0.9891	0.9071	0.9629	0.9678	0.9225	0.966	0.9773	0.9796	0.962	0.9303	0.9106
AL	0.9556	0.934	0.9477	0.9715	0.9847	0.9494	0.9826	0.9502	0.9916	0.9656	0.9852	0.9859	0.9442	0.8471	0.9146
AM	0.8771	0.9235	0.9873	0.9956	0.9967	0.9968	0.9945	0.9576	0.9746	0.9737	0.9939	0.9988	0.9379	0.9069	0.907
AP	0.8685	0.951	0.9954	0.9847	0.979	0.8702	0.974	0.9224	0.9107	0.9427	0.9938	0.8992	0.9162	0.8575	0.8377
BA	0.9915	0.9826	0.9761	0.9757	0.9934	0.9932	0.9942	0.9798	0.9886	0.9973	0.9923	0.9976	0.9498	0.8844	0.8633
CE	0.9622	0.9338	0.9426	0.9763	0.9931	0.9617	0.9194	0.9278	0.9371	0.9927	0.9755	0.9728	0.9902	0.8659	0.9209
DF	0.9882	0.986	0.9859	0.998	0.9978	0.9985	0.9896	0.9436	0.973	0.9786	0.9784	0.9963	0.9925	0.9813	0.9198
ES	0.9831	0.977	0.9999	0.9276	0.9555	0.9386	0.9813	0.9618	0.921	0.9738	0.9272	0.9893	0.9356	0.7741	0.7822
GO	0.983	0.8142	0.9883	0.98	0.9698	0.9913	0.9926	0.989	0.9866	0.9765	0.952	0.947	0.9795	0.7565	0.7928
MA	0.8214	0.9684	0.9804	0.9305	0.9367	0.8624	0.9684	0.8902	0.9745	0.9718	0.9674	0.9895	0.9813	0.9471	0.8872
MG	0.9724	0.915	0.8678	0.9879	0.9958	0.9913	0.9972	0.9942	0.9844	0.9926	0.9835	0.9934	0.9647	0.9223	0.9374
MS	0.9454	0.9947	0.9908	0.9663	0.983	0.9527	0.9698	0.9421	0.9589	0.9936	0.9611	0.9902	0.9942	0.9267	0.937
MT	0.9727	0.9718	0.9191	0.991	0.992	0.9963	0.993	0.9964	0.977	0.9442	0.9708	0.9773	0.9857	0.6987	0.5625
PA	0.997	0.9983	0.9935	0.9977	0.9999	0.9758	0.9991	0.9608	0.9638	0.9679	0.9774	0.9382	0.9367	0.8559	0.9474
PB	0.9387	0.9496	0.8953	0.925	0.9155	0.9794	0.9972	0.9782	0.9591	0.9579	0.9295	0.9368	0.9629	0.7893	0.7847
PE	0.7988	0.9216	0.9068	0.9631	0.9928	0.9846	0.8376	0.9744	0.9714	0.9902	0.9773	0.9873	0.9769	0.8802	0.9388
PI	0.8533	0.9858	0.8976	0.7516	0.9088	0.9387	0.974	0.9222	0.9858	0.9865	0.9907	0.9993	0.9218	0.822	0.8222
PR	0.9589	0.9909	0.9886	0.9998	0.9721	0.9889	0.9868	0.996	0.9783	0.9962	0.999	0.9801	0.9763	0.8903	0.8724
RJ	0.9522	0.9986	0.9379	0.9989	0.9947	0.9979	0.9968	0.9786	0.9499	0.9788	0.9963	0.9843	0.9964	0.9355	0.917
RN	0.9803	0.9931	0.9767	0.9875	0.9806	0.9639	0.9826	0.9977	0.9799	0.9715	0.9634	0.9843	0.9936	0.8816	0.8899
RO	0.9778	0.9721	0.978	0.9737	0.9981	0.9845	0.9963	0.9673	0.9669	0.8989	0.997	0.9531	0.9946	0.9131	0.8571
RR	0.9108	0.9279	0.807	0.8948	0.8306	0.9254	0.9584	0.9963	0.8213	0.9319	0.8973	0.4561	0.8214	0.9358	0.7251
RS	0.9352	0.9368	0.969	0.9724	0.9364	0.9444	0.9503	0.9701	0.9819	0.9996	0.9955	0.9863	0.9814	0.9405	0.9392
SC	0.9884	0.9765	0.9703	0.8696	0.9874	0.9982	0.8815	0.9543	0.9173	0.9713	0.9999	0.9798	0.9808	0.7058	0.7248
SE	0.9458	0.9784	0.9726	0.9881	1	0.9565	0.9544	0.9306	0.9392	0.973	0.9916	0.9981	0.9804	0.789	0.8014
SP	0.9991	0.999	0.9883	0.993	0.9993	0.9979	0.9986	0.9985	0.9985	0.9949	0.9845	0.9955	0.9986	0.9949	0.9983
TO	0.9221	0.8815	0.9735	0.951	0.9462	0.9179	0.9349	0.9004	0.9575	0.925	0.9213	0.9184	0.8642	0.8484	0.8406

Table 18 – Planning Accuracy Score

State	Year														
	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
AC	0.8797	0.9085	0.8569	0.9166	0.9927	0.9157	0.8947	0.9355	0.9193	0.9572	0.9417	0.9864	0.6884	0.6571	0.6378
AL	0.9183	0.6738	0.9028	0.8774	0.8066	0.8902	0.8871	0.8408	0.9103	0.8832	0.9901	0.9536	0.9553	0.8977	0.9425
AM	0.8942	0.9035	0.9016	0.932	0.9453	0.8904	0.9658	0.9616	0.9026	0.9597	0.9108	0.97	0.9162	0.8802	0.9104
AP	0.8748	0.8496	0.8934	0.964	0.9858	0.9026	0.8612	0.873	0.901	0.9616	0.9664	0.8792	0.9103	0.8515	0.8839
BA	0.8603	0.9821	0.9832	0.984	0.9472	0.9926	0.976	0.9864	0.9715	0.9656	0.9574	0.9043	0.9359	0.9225	0.9049
CE	0.9024	0.9563	0.9624	0.9594	0.8609	0.9726	0.9481	0.9501	0.9572	0.9803	0.9087	0.9818	0.9259	0.9076	0.9332
DF	0.8731	0.963	0.9498	0.5798	0.9371	0.9154	0.9758	0.8606	0.9559	0.9676	0.8549	0.7991	0.8805	0.8845	0.8524
ES	0.8053	0.9675	0.9243	0.905	0.9407	0.9504	0.922	0.9247	0.9456	0.9597	0.9409	0.944	0.9413	0.8479	0.8531
GO	0.7843	0.7586	0.9215	0.9866	0.7689	0.7793	0.861	0.9335	0.9818	0.9435	0.9673	0.9325	0.9705	0.822	0.8597
MA	0.7106	0.8882	0.9092	0.9537	0.9137	0.9068	0.9409	0.9254	0.9085	0.946	0.9689	0.9182	0.984	0.918	0.9235
MG	0.9818	0.924	0.872	0.9756	0.9901	0.9592	0.9522	0.9574	0.9272	0.9739	0.9217	0.8808	0.8579	0.9143	0.9541
MS	0.9641	0.9187	0.9432	0.9235	0.9215	0.9689	0.9211	0.961	0.9578	0.9663	0.9266	0.9908	0.9849	0.8967	0.8999
MT	0.9766	0.9606	0.942	0.9013	0.931	0.9761	0.96	0.9183	0.8999	0.8854	0.9204	0.9657	0.9832	0.7984	0.6936
PA	0.9701	0.9645	0.9675	0.9815	0.9835	0.9732	0.9413	0.9601	0.9634	0.9583	0.9453	0.888	0.9375	0.8383	0.9643
PB	0.6763	0.9526	0.8525	0.8794	0.8511	0.9601	0.9609	0.9598	0.959	0.9462	0.9539	0.9293	0.9344	0.8485	0.8457
PE	0.8508	0.8953	0.8733	0.9018	0.9778	0.9615	0.8837	0.912	0.969	0.992	0.9704	0.9776	0.9616	0.909	0.9587
PI	0.9003	0.9315	0.8981	0.8369	0.9407	0.9363	0.8593	0.837	0.9049	0.8882	0.9429	0.9961	0.9348	0.8731	0.8799
PR	0.9593	0.7513	0.9862	0.9744	0.9482	0.8519	0.8734	0.8811	0.9401	0.8633	0.9138	0.9399	0.8905	0.8822	0.9092
RJ	0.9593	0.9832	0.9522	0.9462	0.9176	0.9548	0.9824	0.9795	0.9519	0.9293	0.9529	0.9856	0.9954	0.9567	0.9441
RN	0.9612	0.9733	0.9624	0.9576	0.9214	0.9687	0.9751	0.9355	0.9576	0.8841	0.9347	0.8409	0.9457	0.9164	0.8727
RO	0.9036	0.927	0.8976	0.9208	0.9355	0.9896	0.9886	0.9779	0.9112	0.9339	0.9749	0.9401	0.9778	0.9417	0.903
RR	0.8193	0.8444	0.8008	0.8931	0.8522	0.9055	0.8725	0.8493	0.753	0.8073	0.8037	0.5207	0.7148	0.6865	0.7986
RS	0.9458	0.959	0.9718	0.9534	0.9579	0.9633	0.9482	0.9798	0.9135	0.9987	0.9627	0.9843	0.9866	0.9532	0.9513
SC	0.8375	0.673	0.7776	0.6657	0.8916	0.9815	0.8455	0.9515	0.9446	0.9604	0.9858	0.9865	0.9647	0.8034	0.8163
SE	0.8731	0.9587	0.9101	0.9553	0.9857	0.9638	0.9384	0.9127	0.9592	0.9452	0.9262	0.9338	0.8815	0.851	0.86
SP	0.9275	0.9488	0.958	0.9614	0.964	0.9454	0.9766	0.922	0.8673	0.9328	0.8936	0.9197	0.9368	0.9175	0.9341
TO	0.9462	0.9012	0.9636	0.8688	0.8546	0.9332	0.9102	0.907	0.8935	0.8975	0.8625	0.843	0.7944	0.8803	0.8642

Table 19 – Constitutional Requirements – Education Subscore

State	Year														
	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
AC	1	1	0.9099	0.9529	0.9711	0.96	0.94	0.969	1	0.9854	0.999	0.9004	0.9365	0.9633	0.8634
AL	0.8729	0.932	1	1	0.9593	0.6282	0.6557	0.6539	0.6795	0.6775	0.675	0.6725	0.8066	0.7427	0.7637
AM	0.9438	0.925	0.8737	0.7546	0.7526	0.7421	0.7627	0.7427	0.7524	0.7732	0.8007	0.7601	0.7521	0.8273	0.8263
AP	0.9067	1	1	1	1	0.8345	0.9974	0.8831	0.9253	1	1	0.968	0.9358	1	0.9225
BA	1	1	0.9077	0.8572	0.7633	0.7922	0.7571	0.7188	0.7711	0.7908	0.6713	0.7706	0.7563	0.7018	0.664
CE	0.9843	1	1	1	1	1	1	1	1	1	1	1	0.8113	0.7392	0.737
DF	1	1	1	0.7299	0.56	0.5489	0.61	0.5844	0.9315	1	0.9998	1	0.9331	0.9603	0.9486
ES	0.5545	0.5505	0.5618	0.4171	0.6917	0.643	0.6032	0.5755	0.5278	0.6214	0.5205	0.4626	0.44	0.4939	0.5047
GO	0.8927	1	0.9588	0.8679	0.8503	0.8201	0.9361	0.8242	0.727	0.7461	0.8099	0.7159	0.7895	0.7779	0.9191
MA	0.6714	1	1	1	0.7732	0.7225	0.7232	0.6891	0.7247	0.8176	0.8182	0.8093	0.7961	0.8976	0.8361
MG	1	1	1	1	0.6706	0.6494	0.6566	0.6835	0.6683	0.652	0.5988	0.6683	0.6506	0.6941	0.702
MS	1	1	0.7617	0.7393	0.7811	0.634	0.6635	0.6911	0.6809	0.7857	0.6736	0.8128	0.8324	0.7523	0.6385
MT	0.7616	0.6424	0.6333	0.6142	0.6212	0.6537	0.6611	0.7252	0.7098	0.7088	0.7504	0.739	0.7152	0.7413	0.6716
PA	0.9216	0.9799	0.8767	0.7472	0.6875	0.6033	0.609	0.6877	0.71	0.7652	0.7606	0.7487	0.7218	0.7874	0.7833
PB	1	1	0.8768	0.7799	0.8313	0.8243	0.8438	0.7745	0.7322	0.8882	0.9071	0.8404	0.9393	0.8893	1
PE	0.4786	0.5551	0.6302	0.557	0.5651	0.5804	0.5496	0.6158	0.6465	0.6938	0.7225	0.6934	0.6921	0.6387	0.6613
PI	0.9148	1	1	1	0.9478	0.9478	0.6551	0.7705	0.3008	0.7102	0.8128	0.7977	0.7037	0.8062	0.6972
PR	0.9507	0.9535	0.8604	0.8887	0.8756	0.9039	0.9792	1	1	1	1	1	1	1	1
RJ	1	0.9154	0.7617	0.9432	0.6873	0.6656	0.7867	0.8348	0.7936	0.7687	0.7166	0.6901	0.7501	0.5135	0.5427
RN	1	1	0.8745	0.8259	0.7802	0.7779	0.7833	0.8535	0.7916	0.7984	0.7603	0.7674	0.9016	0.8445	0.7832
RO	1	0.99	0.9512	0.8247	0.8334	0.8027	0.7716	0.7654	0.7498	0.8214	0.7965	0.76	0.7505	0.7848	0.7388
RR	1	1	0.9712	1	0.9146	0.8311	0.9603	1	0.9687	0.9005	0.944	0.7933	0.7425	0.9545	0.7599
RS	1	0.856	1	1	0.8331	0.5676	0.5747	0.5733	0.9142	0.9544	0.9292	0.9215	0.9634	0.5278	0.5357
SC	0.9778	0.9463	1	1	0.962	0.9136	0.8588	0.6402	0.663	0.6988	0.6431	0.6128	0.6866	0.6277	0.6287
SE	0.8753	1	0.7563	0.7344	0.6798	0.6758	0.7103	0.6942	0.6405	0.7131	0.7258	0.6178	0.6918	0.5848	0.5639
SP	0.9468	1	1	1	1	1	1	1	1	1	0.8896	1	0.8925	0.9286	0.8806
TO	1	1	0.9341	0.9166	0.8212	0.7017	0.7052	0.7164	0.7626	0.7775	0.7064	0.7093	0.7348	0.7005	0.596

Table 20 – Constitutional Requirements - Health Subscore

State	Year														
	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
AC	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
AL	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
AM	0.4657	1	1	1	1	1	1	1	1	1	1	1	1	1	1
AP	0.745	1	1	1	1	1	1	1	1	1	1	1	1	1	1
BA	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
CE	0.7422	1	1	1	1	1	1	1	1	1	1	1	1	1	1
DF	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
ES	1	1	0.9455	0.9203	0.9193	1	1	1	1	1	1	1	1	1	1
GO	0.5355	1	1	0.9518	1	1	1	1	1	1	1	1	1	1	1
MA	0.1291	0.9127	0.9233	0.8805	0.516	0.7404	0.8085	0.819	1	1	1	1	1	1	1
MG	0.971	1	0.9904	0.9611	1	0.9669	0.9244	1	1	1	1	1	1	1	1
MS	0.7557	0.6847	0.7205	0.7922	0.8838	0.9314	0.9478	1	1	1	1	1	0.8552	0.8028	0.7211
MT	0.4226	0.5454	0.6961	0.982	1	1	1	1	1	1	0.9824	0.973	0.972	0.9676	0.8893
PA	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
PB	0.7971	1	1	1	1	1	1	1	1	1	1	1	1	1	1
PE	0.286	1	1	1	1	1	1	1	1	1	1	1	1	1	1
PI	0.875	0.9731	0.9144	1	0.7014	1	1	1	1	1	1	1	1	1	1
PR	0.7961	0.8002	0.8228	0.8642	0.9715	1	1	1	1	1	1	1	1	1	1
RJ	0.834	1	0.581	0.6253	0.7884	0.8432	0.9054	0.7846	0.7823	0.994	0.8477	0.8224	0.871	0.8742	0.9235
RN	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
RO	0.4868	1	0.8616	1	1	1	1	1	1	1	1	1	1	1	1
RR	1	1	0.8403	1	0.911	1	1	1	1	1	1	1	1	1	1
RS	0.6546	0.9953	0.9149	0.7815	1	1	0.9614	0.9979	1	1	1	1	1	1	1
SC	1	0.9091	1	1	1	1	1	1	0.8157	1	1	1	1	1	1
SE	1	0.9951	0.9726	1	1	1	1	1	1	1	1	1	1	1	1
SP	0.9217	0.9579	0.9835	1	1	1	1	1	1	1	1	1	1	1	1
TO	0.7632	0.4819	0.9662	0.9446	1	1	1	1	1	1	1	1	1	1	1

Table 21 – Constitutional Requirements Score

State	Year														
	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
AC	1	1	0.955	0.9764	0.9855	0.98	0.97	0.9845	1	0.9927	0.9995	0.9502	0.9683	0.9817	0.9317
AL	0.9365	0.966	1	1	0.9796	0.8141	0.8278	0.8269	0.8398	0.8388	0.8375	0.8363	0.9033	0.8713	0.8818
AM	0.7047	0.9625	0.9369	0.8773	0.8763	0.871	0.8814	0.8714	0.8762	0.8866	0.9003	0.88	0.876	0.9136	0.9132
AP	0.8259	1	1	1	1	0.9172	0.9987	0.9415	0.9626	1	1	0.984	0.9679	1	0.9613
BA	1	1	0.9538	0.9286	0.8817	0.8961	0.8785	0.8594	0.8856	0.8954	0.8356	0.8853	0.8782	0.8509	0.832
CE	0.8633	1	1	1	1	1	1	1	1	1	1	1	0.9057	0.8696	0.8685
DF	1	1	1	0.8649	0.78	0.7745	0.805	0.7922	0.9657	1	0.9999	1	0.9665	0.9802	0.9743
ES	0.7773	0.7753	0.7537	0.6687	0.8055	0.8215	0.8016	0.7877	0.7639	0.8107	0.7603	0.7313	0.72	0.7469	0.7524
GO	0.7141	1	0.9794	0.9098	0.9252	0.9101	0.9681	0.9121	0.8635	0.873	0.905	0.858	0.8947	0.8889	0.9595
MA	0.4003	0.9564	0.9617	0.9402	0.6446	0.7315	0.7658	0.754	0.8623	0.9088	0.9091	0.9046	0.8981	0.9488	0.9181
MG	0.9855	1	0.9952	0.9806	0.8353	0.8082	0.7905	0.8418	0.8341	0.826	0.7994	0.8341	0.8253	0.847	0.851
MS	0.8778	0.8423	0.7411	0.7658	0.8325	0.7827	0.8057	0.8456	0.8405	0.8928	0.8368	0.9064	0.8438	0.7776	0.6798
MT	0.5921	0.5939	0.6647	0.7981	0.8106	0.8268	0.8305	0.8626	0.8549	0.8544	0.8664	0.856	0.8436	0.8544	0.7805
PA	0.9608	0.99	0.9383	0.8736	0.8437	0.8016	0.8045	0.8439	0.855	0.8826	0.8803	0.8744	0.8609	0.8937	0.8916
PB	0.8985	1	0.9384	0.8899	0.9156	0.9121	0.9219	0.8873	0.8661	0.9441	0.9536	0.9202	0.9696	0.9446	1
PE	0.3823	0.7776	0.8151	0.7785	0.7826	0.7902	0.7748	0.8079	0.8233	0.8469	0.8612	0.8467	0.8461	0.8194	0.8307
PI	0.8949	0.9865	0.9572	1	0.8246	0.9739	0.8275	0.8853	0.6504	0.8551	0.9064	0.8989	0.8518	0.9031	0.8486
PR	0.8734	0.8769	0.8416	0.8764	0.9235	0.9519	0.9896	1	1	1	1	1	1	1	1
RJ	0.917	0.9577	0.6714	0.7842	0.7379	0.7544	0.8461	0.8097	0.7879	0.8813	0.7822	0.7563	0.8106	0.6939	0.7331
RN	1	1	0.9372	0.9129	0.8901	0.889	0.8916	0.9268	0.8958	0.8992	0.8801	0.8837	0.9508	0.9222	0.8916
RO	0.7434	0.995	0.9064	0.9123	0.9167	0.9013	0.8858	0.8827	0.8749	0.9107	0.8983	0.88	0.8752	0.8924	0.8694
RR	1	1	0.9058	1	0.9128	0.9155	0.9802	1	0.9844	0.9503	0.972	0.8967	0.8713	0.9772	0.8799
RS	0.8273	0.9256	0.9574	0.8907	0.9166	0.7838	0.768	0.7856	0.9571	0.9772	0.9646	0.9608	0.9817	0.7639	0.7678
SC	0.9889	0.9277	1	1	0.981	0.9568	0.9294	0.8201	0.7394	0.8494	0.8215	0.8064	0.8433	0.8138	0.8144
SE	0.9377	0.9975	0.8644	0.8672	0.8399	0.8379	0.8551	0.8471	0.8202	0.8566	0.8629	0.8089	0.8459	0.7924	0.7819
SP	0.9342	0.9789	0.9917	1	1	1	1	1	1	1	0.9448	1	0.9462	0.9643	0.9403
TO	0.8816	0.741	0.9502	0.9306	0.9106	0.8509	0.8526	0.8582	0.8813	0.8888	0.8532	0.8547	0.8674	0.8502	0.798

Table 22 – Constitutional Requirements Score

State	Year														
	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
AC	0.9204	0.9368	0.9228	0.9396	0.962	0.9544	0.9449	0.9613	0.9681	0.9699	0.9588	0.9595	0.8998	0.8905	0.8742
AL	0.8622	0.8241	0.872	0.8649	0.84	0.8258	0.8287	0.8155	0.8269	0.8414	0.847	0.8468	0.8927	0.872	0.8706
AM	0.8657	0.9351	0.9309	0.9302	0.9391	0.9315	0.951	0.9554	0.9479	0.9559	0.9471	0.9587	0.9494	0.9464	0.9476
AP	0.9364	0.9544	0.9483	0.9741	0.981	0.948	0.9655	0.9526	0.9704	0.9864	0.9769	0.9657	0.9556	0.9507	0.9467
BA	0.8834	0.9056	0.8915	0.8954	0.8904	0.9151	0.9162	0.9248	0.9326	0.9382	0.9305	0.9331	0.9366	0.9297	0.9094
CE	0.9041	0.9395	0.9287	0.9342	0.9222	0.9546	0.9573	0.9685	0.9742	0.9861	0.9638	0.9805	0.9503	0.9396	0.938
DF	0.9547	0.9735	0.9647	0.8687	0.9275	0.9189	0.924	0.9197	0.9752	0.9839	0.9608	0.9508	0.9635	0.9641	0.9539
ES	0.834	0.9039	0.86	0.7508	0.9017	0.9215	0.9095	0.9221	0.9223	0.9412	0.9197	0.9166	0.9219	0.8988	0.9032
GO	0.7946	0.8379	0.872	0.8685	0.8271	0.8359	0.8614	0.875	0.8791	0.8825	0.905	0.8884	0.9111	0.881	0.909
MA	0.7175	0.8649	0.8704	0.875	0.8187	0.8553	0.8782	0.8842	0.8696	0.9252	0.9373	0.9283	0.9414	0.9434	0.9407
MG	0.9081	0.861	0.852	0.8735	0.8483	0.8404	0.8414	0.851	0.8529	0.8606	0.8467	0.8462	0.8405	0.8483	0.8601
MS	0.8646	0.8485	0.8315	0.8338	0.8466	0.8462	0.851	0.8845	0.8994	0.9118	0.8907	0.9209	0.9111	0.882	0.8654
MT	0.8068	0.8053	0.8339	0.8457	0.8782	0.8992	0.8967	0.9032	0.9019	0.9159	0.9239	0.9403	0.9488	0.9108	0.8711
PA	0.9541	0.9561	0.9449	0.9377	0.9331	0.9299	0.9255	0.9417	0.9362	0.9548	0.9492	0.9413	0.9528	0.9404	0.958
PB	0.8341	0.9231	0.8798	0.8904	0.8909	0.9235	0.9292	0.9271	0.9347	0.9592	0.9584	0.9497	0.9636	0.9432	0.9312
PE	0.7992	0.8749	0.8715	0.8735	0.8968	0.9058	0.8952	0.9151	0.9356	0.9448	0.9459	0.9439	0.937	0.9175	0.9271
PI	0.8651	0.891	0.8848	0.8777	0.876	0.9232	0.8897	0.8986	0.8761	0.9157	0.9372	0.9481	0.9282	0.9193	0.9054
PR	0.8739	0.8533	0.8981	0.9117	0.915	0.8913	0.9055	0.9141	0.9248	0.9132	0.9351	0.9472	0.9457	0.9443	0.9507
RJ	0.8615	0.8805	0.8174	0.8388	0.825	0.8391	0.8717	0.8647	0.8613	0.8753	0.8628	0.8699	0.8719	0.8446	0.8355
RN	0.9542	0.9654	0.9365	0.9347	0.9354	0.937	0.9507	0.9524	0.9468	0.9219	0.9349	0.9247	0.9553	0.9501	0.9392
RO	0.8675	0.9185	0.8682	0.8863	0.9141	0.8948	0.9181	0.9366	0.9293	0.9399	0.9453	0.9367	0.9461	0.9339	0.9222
RR	0.9385	0.9417	0.9222	0.9553	0.9462	0.9504	0.9563	0.9626	0.9331	0.9277	0.944	0.8724	0.8966	0.9052	0.9118
RS	0.8524	0.8748	0.8837	0.8669	0.8731	0.8477	0.8417	0.8518	0.873	0.8945	0.885	0.8887	0.8759	0.8237	0.8192
SC	0.8572	0.8387	0.8508	0.8363	0.8782	0.9093	0.8891	0.891	0.8799	0.9206	0.9238	0.9289	0.932	0.896	0.8998
SE	0.9144	0.9484	0.9146	0.9266	0.9294	0.9344	0.9276	0.9283	0.943	0.9453	0.9396	0.925	0.917	0.8992	0.8967
SP	0.8696	0.8804	0.8834	0.8853	0.8865	0.884	0.8583	0.8607	0.887	0.9072	0.887	0.9065	0.8905	0.896	0.8869
TO	0.9459	0.913	0.9627	0.945	0.9339	0.9485	0.9451	0.9481	0.9491	0.9509	0.9341	0.8791	0.9206	0.9316	0.9145