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ARTIGO

**NATIONAL MULTI-LEVEL COORDINATION OF
BUDGETARY AND FINANCIAL SYSTEMS IN THE
PANDEMIC CONTEXT**

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National multi-level coordination of budgetary and financial systems in the pandemic context

Abstract

This paper explores how the national multi-level coordination of budgetary and financial systems worked as a federation was engulfed by an epidemiological event such as coronavirus disease. We used a qualitative methodology based on secondary data and information available in different portals. We started from the financial resilience framework in the context of Covid-19 by Padovani et al. (2021a) and included two dimensions to the discussion: the multilevel coordination of budget and financial systems, and the effects on regulation. Our findings indicated that budgetary and financial systems that cut across layers of government did not support coordinated responses, nor were they used to hold decision-makers accountable for many problems that arose in the pandemic crisis. As a practical implication, federal countries can use the findings to review all national coordination mechanisms, including budgetary and financial, to be prepared for future similar crises.

Keywords: Pandemic context. Multi-level coordination. Financial resilient

1. INTRODUCTION

In periods of austerity, coordination is a relevant feature for government performance (LAEGREID et al., 2015), and it seems also it matters as one observes how different countries had assimilated the challenges from the current pandemic crisis. Although the accounting and finance literature already discussed the impacts of Covid-19 and how governments are coping with it (e.g., BEL; GASULLA; FERRAN, 2021; VOET, 2021), the presence or lack of multilevel coordination has not been widely explored.

Incidentally, coordination seems to be somewhat implicit in the resilience models developed by scholars, but this is not the case in all countries with federative systems, such as the Brazilian case, as occurred during the pandemic context. Consequently, seeking to advance the literature, in this paper, our focus is on the coordination of central, regional, and local governments, and whether budgetary and financial systems were able to channel resources, protect misappropriations and support rapid responses.

Therefore, in this paper, our objective is to explore how the national multi-level coordination of budgetary and financial systems functioned as a federation that was engulfed by an epidemiological event such as coronavirus disease. To achieve our goal, we depart from the financial resilience framework under the Covid-19 context by Padovani, Iacuzzi, Jorge and Pimentel (2021a), and include two dimensions: (i) the multilevel coordination of budgetary and financial systems; and (ii) the effects on regulation.

We considered a few factors to carry out this paper in Brazil. First, despite the recent study by Padovani et al. (2021b), we study the reaction of a different country to the same crisis, as traditions and administrative arrangements fluctuate (SALITERER; JONES; STECCOLINI, 2017; PADOVANI et al., 2021a). Second, the budgetary and financial systems in an emerging country were addressed, as crisis management literature has focused mainly on financial conditions, performance, and resilience in times of shocks and austerity, mainly in developed

economies, and it has been less concerned with the evolution of public finances in emerging economies (UPADHAYA et al., 2020). Third, the presence or lack of internal government coordination was considered, as it was not explicitly addressed and how this might affect responses to the crisis, with rare exception (e.g., KUHLMANN; FRANZKE, 2021).

This paper offers a new approach, based on the framework with the incorporation of the two new dimensions. Based on this incorporation, such as factors related to multi-level coordination and effects of regulation, a range of expectations can be developed based on the impact of an emerging crisis on a federation marked by budget-generated problems.

2. RECENT LITERATURE ON BUDGET AND CRISIS MANAGEMENT

The budget has an important social function in times of austerity. During a crisis, for example, the budgetary implications for responding to it highlight the importance of the academic community advancing knowledge about it for collective well-being (ANDREW et al., 2020). Generally, the budget is a mechanism used to prioritize different values in an open and democratic way (ARGENTO; KAARBOE; VAKKURI, 2020). According to the latter authors, the budget is considered a crucial element of trust and certainty in society, and serves several important purposes, such as: the realization of fiscal, economic, redistributive, managerial, and social responsibility policies.

Some controversies about the budget are discussed in the literature. Initially, the budget represents a plan and serves as a powerful tool in modern society, as evidenced in an emerging crisis such as the crisis generated by Covid-19 (ARGENTO et al., 2020). However, as the budget is inherent to a political process, while it can alleviate uncertainty during a crisis, as was the case in Taiwan (e.g., LIAO; KUO; CHUANG, 2021), it can also create additional uncertainty, as was the case in the UK (e.g., AHRENS; FERRY, 2020) or France (e.g., CHO; JEROME; MAURICE, 2021), all these cases analysed during the crisis generated by Covid-19. While the purpose of budgeting depends on how the actors, processes and fundamentals of a government's budget system are perceived (SICILIA; STECCOLINI, 2017), pandemic crisis responses have been an opportunity to highlight the need for engagement of various actors and budget decision-makers with each other and at various levels (CHO et al., 2021).

Scholars have struggled to understand how the budget can make responding to a crisis easier or worse, especially in relation to the crisis generated by Covid-19, which required immediate responses from governments (KUHLMANN; FRANZKE, 2021). In the case of Australia, Andrew et al. (2020) indicated that the authorities will need to unlearn the neoliberal concept and its ideological assumptions as the neoliberal budget orientation poorly prepared

the Australian nation for the pandemic crisis. In the study by Argento et al. (2020), which analysed the budget responses of Nordic countries such as Finland, Norway and Sweden, the authors found that the three countries interpreted the Covid-19 threat differently. According to the authors, Sweden seems to have faced an exceptionally more difficult crisis than the other two countries, due to the country's strong decentralization. In the context of South Asian countries, Upadhaya et al. (2020) investigated that India, Nepal and Sri Lanka have weak budgetary and fiscal positions, which made it difficult for these governments to respond effectively to the pandemic crisis. Moreover, in the case of Taiwan, Liao et al. (2021) identified that the country has flexible budget rules and low public debt, which made it easier for the country to cope with an emerging crisis. According to the latter authors, the government was able to make its budget more flexible without the need to issue new debt.

In addition to the countries mentioned, the budgetary and financial implications in responding to the pandemic crisis have also been studied in other regions. Here, we mention a few: Germany (e.g., KUHLMANN; FRANZKE, 2021), South Korea (e.g., KIM, 2020), United States (e.g., JOYCE; PRABOWO, 2020; KETTL, 2020), France (e.g., CHO et al, 2021), Nigeria (e.g., EJIUGU; OKECHUKWU, EJIUGU, 2020), United Kingdom (e.g., AHRENS; FERRY, 2020); Portugal, and Italy (e.g., PADOVANI et al., 2021a). In general, these scholars demonstrated that governments' strategies and responses were based on their budgetary perspectives, with few exceptions. These experiences provide useful lessons for future emerging crises.

The impacts of the crisis led to the approval of a special budget, so that governments could overcome the economic and health impacts of the pandemic, but some regions were effective in responding to the crisis, while others were not. As differences in political and institutional design limited the scope of a response to combat the effects of the pandemic, some scholars argued that financial vulnerability may have been decisive (e.g., PADOVANI et al., 2021a). Other scholars have argued that the presence or lack of coordination may have affected the effective response to the crisis (e.g., AHRENS; FERRY, 2020; KUHLMANN; FRANZKE, 2021). On the latter, at least two types of coordination have been mentioned in recent research: (i) between countries in the same region, and (ii) between governments of the same country.

In relation to coordination between countries in the same region, some examples can be discussed, such as the European and South Asian perspectives. From a European perspective, Cho et al. (2021) highlighted that supranational policy responses showed their weaknesses in the budget. For the authors, although Europe was equipped with a good budget, it was not designed to cope with emergencies. Moreover, the crisis highlighted the importance of the

union being able to react quickly and flexibly to implement a coordinated response (CHO et al., 2021). From the perspective of South Asian countries, Upadhaya et al. (2020) proposed that individual efforts could be complemented by collaboration between countries. According to the authors, based on this strategy, countries in this region can develop long-term resilience as well as a collaborative approach.

Regarding coordination between levels of government in the same country, we discussed about the UK and US scenario. In Ahrens and Ferry's (2020) study on local government responses in the UK, the authors indicated that inadequate support from central governments, given the impacts of Covid-19, weakened the financial resilience of local governments, and consequently affected growth and social response in the region. As support was not on a reliable basis to meet specific demands, funds were distributed randomly (AHRENS; FERRY, 2020). In the American scenario, the question of how to "best respond" to challenges fragmented the intergovernmental sphere (KETTTL, 2020). According to the same author, the central government left most decisions to subnational governments, and they made quite different decisions. While some decisions flowed naturally, there was a surprising degree of different decisions by subnational government authorities, which raised questions about the role of the federal government's leadership (KETTTL, 2020), which affected an effective response to the crisis. While federal aid was maintained, subnational and local governments in the United States faced their own challenges (JOYCE; PRABOWO, 2020).

Despite recent evidence, the discussion of coordination, and how it may affect responses to a crisis, has not yet been explicitly addressed, with the rare exception of the study by Kuhlmann and Franzke (2021). According to the authors, who investigated multi-level responses in Germany, with the country by adopting an intergovernmental approach, which varied throughout the pandemic, it was able to respond adequately to the crisis. In this latest research, the coordination of pandemic management in Germany shifted between two types: (i) in the first and last phase, a multi-level system with sub-national and local authorities as key actors in crisis management, and (ii) in the intermediate phase, a functional orientation with vertical coordination (KUHLMANN; FRANZKE, 2021).

Even with the contribution of Kuhlmann and Franzke (2021), the debate so far reinforces the emerging reality of increasingly divided governments in countries around the world. In Joyce and Prabowo (2020), the authors show that in a federal country, budget policy remains dominant at the central level, which is affecting the debate and expression of financial assistance to subnational and local governments. While in the financial vulnerability frameworks elaborated in the literature it seems somewhat implicit that multi-level coordination

happens naturally, as expected from a happy ending in a movie marked by drama, what will happen if we add the budget policy of a federal country vulnerable to other factors, such as disputes between authorities, possible effects of regulation and its model of public administration? Will all the emerging crises put federal governments (especially the most vulnerable ones) in front of a big bomb, with no countdown to the explosion?

3. METHODOLOGY

This paper analyses how the nation multi-level coordination of budgetary and financial systems operated in a federation was engulfed by an epidemiological event as the coronavirus disease. To achieve this objective, we departed from the framework of financial resilient under the Covid-19 context by Padovani et al. (2021a) and included two dimensions to the discussion. First, the researchers have developed a framework to examine the financial vulnerability before and during the pandemic crisis (or immediate aftermath). Mapping and systematizing its dimensions and contingent sources, the framework considers four fields: (i) overall administrative structure and fiscal rules, (ii) local government structure, (iii) local government expenditure structure and (iv) the assessment of vulnerability. Second, our two added fields correspond to: (v) the multi-level coordination of budgetary and financial systems, and (vi) the effects on regulation.

In relation to the added dimensions, we consider the effect on regulation as a potential side effect of crisis management, especially when a crisis has no precedent in a country and actors are not prepared to enact coordinated actions to deal with it. About the multi-level coordination, we emphasize that the pandemic context requires alignment of responses, and its impacts are supported by budgetary and financial systems.

We briefly illustrate the modified framework in Table 01:

Table 01: Financial vulnerability framework with new dimensions

Vulnerability dimension	Timeline
i. Administrative structure and fiscal rules*	
ii. Government structure*	1 Before pandemic crisis
iii. Government expenditure structure*	
iv. Assessment of vulnerability*	2 During pandemic crisis
v. Multi-level coordination of budgetary and financial systems	
vi. Effects on regulation	

Source: adapted from Padovani et al. (2021a).

Legends: * the items of enquiry of dimensions i. to iv., that are the same of the framework

Notes: in our additional dimensions, we elaborate some items of enquiry. For dimension v.: before pandemic crisis (what are the expectations of coordinated multilevel responses of budgetary and financial systems?) and during pandemic crisis (how did the coordinated multilevel responses occur during the crisis? what are the first decisions that were taken to fit expected patterns of coordinated multilevel responses, if any?). For dimension vi.: before pandemic crisis (how does regulation determine the adoption of measures by governments during crises?) and during pandemic crisis (what are the first decisions to reduce/increase the effect of regulation on the adoption of intergovernmental responses?).

Finally, we used a qualitative methodology based on secondary data and information available on portals of different levels of government (or branches) in Brazil, data published by government agencies and media articles published before 30 June 2021. A large part of our data was extracted from articles accessible on media portals.

4. THE BRIEF DILEMMA ABOUT MULTI-LEVEL COORDINATION IN BRAZIL

The initial scenario of the Brazilian federation was totally opposed to the current one. Originally inspired by the United States model, the first constitutional Brazilian project emerged in 1891. The initial proposal was of great autonomy for subnational governments, little intervention from the central government and lack of federative coordination (ABRUCIO et al., 2020). The period of just under 100 years was marked by a major transformation of Brazilian federalism, with the increase in the role of the central government (during the military regime), and the consequent reduction in the role of subnational governments.

In 1988, with the redemocratization of the Brazilian federative model, greater autonomy was returned to subnational governments and granted to local governments, but it was counterbalanced by national policies in favour of expanding public policies and combating inequality. Abrucio et al. (2020) point out that these changes required the central government to play an important role in federative coordination. As Brazil became a federation with decentralized responsibility for service delivery, the budgeting process became complex as it started to involve the priorities of a country with more than 200 million inhabitants in 5,569 municipalities (distributed in 26 sub-national governments).

Unfortunately, some problems have been generated by the current budget design, such as dominant central government budget policy, dependence on external transfers (especially local governments), and overlapping or competition between levels of government, among others. Although these problems are mitigated by control and planning mechanisms, they are still present in the structure of a federation, and can be intensified by the context, affecting coordination at various levels. In the area of health (the most paradigmatic Brazilian case), for example, which was built on national guidelines related to standardization and redistribution of resources, decentralized implementation and institutionalized spaces for social participation, and intergovernmental negotiation (ABRUCIO et al., 2020), the reality of the pandemic crisis showed that the government was not prepared to provide a coordinated, led and well-resourced response that would be essential for the viability of a safe and healthy society.

Despite the expectation that resources would be transferred naturally (and more quickly during the crisis) from the central government to sub-national public hospitals, and to local

government health posts, based on the federative model, this did not happen in Brazil. In this country, as budget design problems became embroiled in mutual political disputes, affecting a coordinated response, which was required for the pandemic crisis (KUHLMANN; FRANZKE, 2021), the result was an unsuccessful response to the recent crisis.

5. FINDINGS

5.1 Financial vulnerability

As the financial magnitude of responses to counteract the impacts of the pandemic crisis varied across countries (de JONG; HO, 2020), Padovani et al. (2021a) developed a framework to examine financial vulnerability before and during the crisis, mapping and systematizing its dimensions and contingencies. We note, however, that the coordinated multilevel response by governments seems to be somewhat implicit in resilience models, as was the case established by scholars, but this is not the case for all countries. To advance the discussion, we apply the framework, and consider two new dimensions that may affect financial vulnerability.

The portrait of the factors that affecting financial vulnerability before and during the pandemic crisis in Brazil is described in Table 02:

Table 02: Analysing financial vulnerability in government levels in Brazil by framework with new dimensions

Vulnerability dimension	Timeline	Item of Enquiry	Brazil
i. Administrative structure and fiscal rules*	Before pandemic crisis	<p>a. What is the set of administrative and fiscal rules that apply?</p> <p>b. What are the institutional relationships between local governments and central governments (and/or regional/state government) in terms of intergovernmental transfers, level of dependency, bailout capacity?</p> <p>c. What is the role of the administrative structure and the fiscal rules on local government financial vulnerability</p>	<p>a. Local and sub-national governments enjoy a certain degree of autonomy, materialized by their capacity for self-organization, self-government, and self-management. There is administrative and fiscal decentralization (to the three levels of government)</p> <p>b. Central government budget policy is dominant, making sub-national and local governments (mostly) routinely express themselves through financial aid</p> <p>c. There are rules on the balance of public finances, debt acquisition limits, financial recovery mechanisms and audit mechanism (internal and external)</p>
	During pandemic crisis	<p>a. What are the first decisions that have been taken by the central (and regional) governments to face local financial distress that affected the administrative structure and fiscal rules, if any?</p>	<p>a. The audit and control agencies changed the deadlines for accountability; urged local and subnational governments to develop a budget contingency plan to promote financial balance during the crisis; called for the suspension of hiring and the freezing of salary increases for public employees. Even though the central government did not take a quick position, given the first impacts of covid-19, with the worsening of the pandemic and the benefits granted to subnational and local governments, it called for the development of a fiscal recovery plan</p>
ii. Government structure*	Before pandemic crisis	<p>a. What are the types of revenues local authorities rely on, with particular emphasis on basis (is it affected by Covid-19) and rate (who decides)?</p> <p>b. Are there relevant differences across entities, i.e. different revenues structures for different local governments? (e.g. local governments that rely more on transfers than own revenues, local governments that rely more on business tax than service fees, etc.)</p>	<p>a. For local governments, these are external transfers, mainly from the union. The implicit tax on the movement of services and services is the main source of income for sub-national governments. For the central government, the major source of income is taxes levied on revenue generated by companies</p> <p>b. The most significant difference in local governments refers to their dependence on external transfers (generally smaller municipalities depend more on these transfers). For sub-national governments, the most significant difference is the rate charged on the tax on the circulation of goods and services</p> <p>- 34.8% of municipalities do not sustain themselves with their own resources (FIRJAN, 2020)</p>
	During pandemic crisis	<p>a. What are the first decisions that have been taken by the central (regional) government to face Covid-19 related to revenues (e.g. procrastination of revenue collection, cancellation of taxes for certain types of businesses, relief grants)?</p>	<p>a. After pressure from other branches, the (late) central government approved a package of measures to help local and subnational governments, through a subsidy in the amount of the collection deficit of these governments, and the possibility of refinancing debts with the central government. During this period, a special budget was also approved to facilitate the execution of the central government budget (facilitating the transfer of resources)</p>
iii. Government expenditure structure*	Before pandemic crisis	<p>a. How rigid are local expenditures?</p> <p>b. What are the services provided by local government?</p> <p>c. Are there relevant differences across entities, i.e. different expenditures for different local governments? (e.g. local governments that run hospitals, care homes, tourist sites, cultural services, etc.)</p>	<p>a. In local governments, the budget is at least 40% rigid. In sub-national and central governments, at least 33%</p> <p>- 49.4% of cities have a tight budget due to high personnel expenditure (FIRJAN, 2020)</p> <p>- Of the 26 sub-national governments, 21 spend more than 50% of their income on personnel¹</p> <p>- The central government spends more than 75% on primary spending (e.g., active, inactive, unemployment insurance and continuing benefit benefits)¹</p> <p>b. There is decentralization in service delivery (e.g., health, and education system)</p> <p>c. The lower limit for education is lower for sub-national and central governments. In central government, the ceiling on personnel expenditure is lower compared to other levels of government</p>
	During pandemic crisis	<p>a. What were the direct consequences of Covid-19 (e.g. more sanitization expenditures, higher police control, closure of schools with reduction of costs, etc.)?</p> <p>b. What are the first decisions that have been taken by the central (regional) government to face Covid-19 related to expenditures (e.g. postponement of debt instalments, deferral of transfers to other governments, ...)?</p>	<p>a. Increased personnel costs (mainly in the health area); cleaning and hygiene costs; delivery of food to the vulnerable; increased police supervision to contain crowds</p> <p>b. Financial stimulus packages for local and sub-national populations, businesses, and governments; expenditure restraint in non-essential areas to combat the health effects of the pandemic; contract freezes; debt deferral/renegotiation; compensation for revenue losses; reduction in debt interest; approval of a flexible budget</p>

iv. Assessment of vulnerability*	Before pandemic crisis	<p>a. How financial forecasts were approached by central (and regional) government and by local governments, usually (e.g. historic perspective, analysis of economic cycles in the medium-short run, etc.)?</p> <p>b. How local government financial vulnerability was measured?</p>	<p>a. Drop in revenue; updating the budget; fiscal situation indicators; audit, and control bodies</p> <p>b. Budgetary rigidity; degree of dependence on intergovernmental transfers; capacity to generate savings</p>
	During pandemic crisis	<p>a. What are the expected impacts on local finances? In the short run? In the medium run?</p> <p>b. How many local government will face financial distress?</p> <p>c. Had local governments room for manoeuvres (financial buffers, rainy days funds, ...) to (partially) face the crisis?</p> <p>d. Has the central government, or the association of local governments provided a sensitivity analysis/stress test to forecast the impacts? If so, was the analysis carried out by surveying local authorities about their perceived effects on their budget? Or how?</p> <p>e. How financial local government vulnerability is measured?</p>	<p>a, b, c. The states and local governments have not carried out a formal assessment of the financial impact of Covid-19 in the medium and long term. In the central government, in the short/medium term, the estimated deficit is between 5-10% (after review), and there is no formal record of the financial impact in the long term</p> <p>- Central government help meant that most of these governments ended the year with no budget deficits (some with a record 2020 cashflow)²</p> <p>- The central government ended 2020 with record debt and a budget gap of approximately \$150 billion²</p> <p>d. In large cities, sub-national governments, and central government, analyses were conducted to identify the financial impact of the pandemic. Audit and control bodies also monitored the impact of the pandemic on government budgets.</p> <p>e. There has been no change in the way financial vulnerability is measured.</p>
v. Multi-level coordination of budgetary and financial systems	Before pandemic crisis	<p>a. What are the expectations of coordinated multilevel responses of budgetary and financial systems?</p>	<p>a. While central government budget policy is dominant, service delivery has a shared responsibility, which requires budgetary and financial coordination for continuity of service delivery</p>
	During pandemic crisis	<p>a. How did the coordinated multilevel responses occur during the crisis?</p> <p>b. What are the first decisions that were taken to fit expected patterns of coordinated multilevel responses, if any?</p>	<p>a. As central government responses were delayed, local and sub-national government authorities made their own decisions to combat the health effects of Covid-19</p> <p>b. With the involvement of other branches, the central government was pressured to adopt measures to combat the effects of the pandemic. Without effect, subnational and local government authorities gained autonomy to adopt measures to counter the effects of the pandemic, eroding the coordinated response between the levels.</p>
vi. Effects on regulation	Before pandemic crisis	<p>a. How does regulation determine the adoption of measures by governments during crises?</p>	<p>a. In periods of calamity, the central government has a legal responsibility to adopt measures to reverse the situation, such as sending resources to other levels of government (especially to local government, which speaks directly to the population), or acquiring debt, etc., to ensure the continuity of public service delivery</p>
	During pandemic crisis	<p>a. What are the first decisions to reduce/increase the effect of regulation on the adoption of intergovernmental responses?</p>	<p>a. The delay by the central government has prompted other branches to move to ensure, through regulation, the transfer of resources to subnational and local governments, autonomy, and other guarantees</p>

Legends: *as we will study different levels of government, our analyses are comprehensive on some of the items of enquiry of dimensions i. to iv

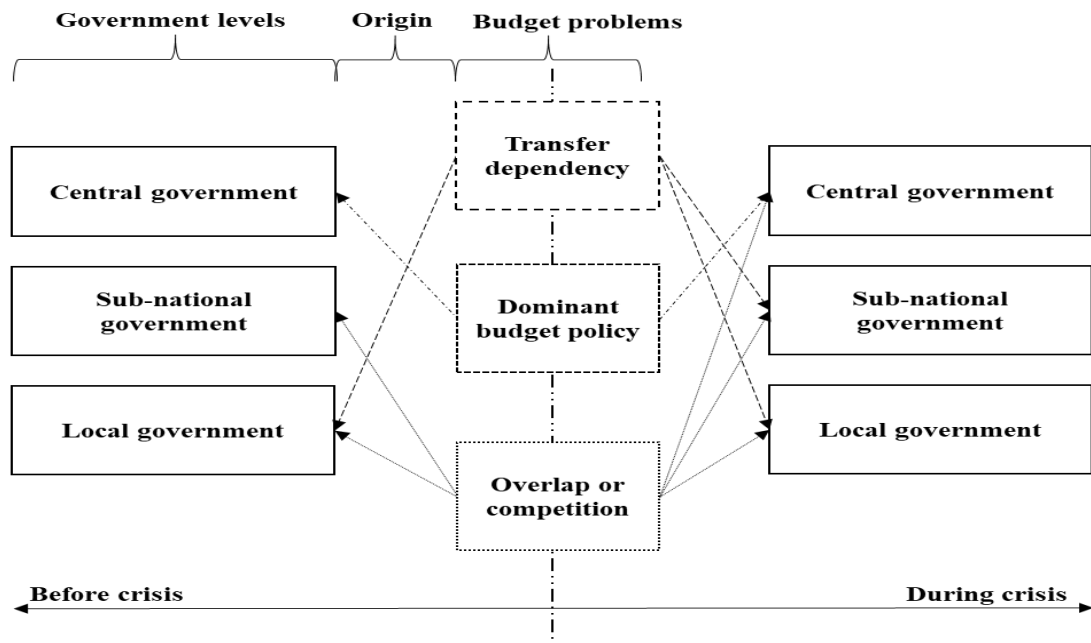
5.2 Associated coordination problems with the budget

In federalist governments, intergovernmental (or multilevel) coordination is fundamental, as it is not easy to reconcile the coexistence between autonomy and interdependence, which marks federations and their decision-making process. However, a few coordination problems, due to the federalist logic, have surrounded budget system. Here, we highlight issues that affect the system's ability to channel resources, protect misappropriations and support immediate responses. Although these problems are distinct, they are interconnected at the same time:

- (1) Transfer dependency: external resources generally represent the largest share of local government revenues, and a share of subnational government revenues. Problems at the top of the federal government pyramid can affect finances at the other, lower levels of government. In the Brazilian case, despite flexibility, the rigidity of the central government budget with mandatory expenditures affects the response in periods of austerity, and consequently the coordinated response;
- (2) Dominant budget policy: since it is the central government's duty to act on a day-to-day basis and in periods of austerity, acquiring debt and providing resources to lower-level governments, this means that other levels of government must wait for signals from the central government to act, which is not always feasible. In the interim, coordination problems arise; and,
- (3) Overlap or competition: the assumption that states and municipalities are more efficient in resource allocation decisions, so that the central government should intervene minimally on a daily or crisis basis, creates a competition problem that affects the coordinated response. Once the central government sends resources to lower levels of government, the problems generated by the bottom of the pyramid with overlapping tasks can make it difficult for new resources to arrive.

As governments seek responses to counteract the effects of the crisis, these problems associated with federal financial and budgetary systems intensify, with a consequent impact on resilient response, and coordinated work is exacerbated. The graphic below provides an insight into where problems originated at different levels of government and how budgetary problems were intensified by the impact of the crisis. Equally importantly, the graphic reveals how vulnerability is affected in response to the crisis, and whether this change reflects an increase or decrease in a coordinated response.

Graphic 01: Budget problems and origin



6. BRIEF DISCUSSION

Despite knowing the risk of global pandemics, many countries were slow to respond to the Covid-19 outbreak (DUMAY; ROONEY; GUTHRIE, 2020), and this was no different in Brazil. Through analysis of Brazil's copying the Covid-19, we observed the president's complacency in keeping the economy running during the crisis was problematic for government policies. While the moment called for cooperation and union, the Brazilian federation faced a deterioration of intergovernmental coordination. With the evolving needs of society in recent decades, these efforts have become extremely delicate during the pandemic crisis.

Even with the pandemic being accentuated by the lack of coordination between levels of a federation, so identified in the United States (e.g., JOYCE; PRABOWO, 2020), we note that the dilemma on the subject has been present for at least 100 years in Brazil, since the enactment of its first constitution and even with the changes in the redemocratization in 1988. Recently, however, the incomplete transformation of Brazilian federalism was increased by the incumbent president who accentuated the conflict between the spheres of government, a fact also identified by the literature (e.g., ABRUCIO et al., 2020).

Until here, the coordination problems appear to be entirely underpinned by political disputes, observed throughout much of Brazil's history copying Covid-19. But this was not the only incentive for such a problem. In this paper, we also identified that the lack of coordination may be related to problems generated by the budget system, in a scenario similar to that identified in the US (e.g., KETTLE, 2020). With a dominant central government budget policy,

problems of overlap and disputes, and transfers dependency, governments at lower levels are affected by budgetary problems at the top of the pyramid, as is the case of the central government in Brazil, which has a very rigid budget because of mandatory spending, which prevents the refinancing of debts of other levels of government or the sending of resources more easily, for example. Also, in our observation, the problems generated by the budget system talk between different levels of government during a crisis, changing or adding to the source of the problem.

The coordination problem, however, was not the only one to haunt Brazil during the pandemic crisis. Applying the framework with the new dimensions, we not only confirm the previous condition of no coordination, but also reveal how financially vulnerable Brazil is to deal with an emerging crisis, after observing the country's financial condition in the pre-crisis period and during the crisis. Furthermore, we identify which are the most important fields and sources of funding, whether they are related to the ability to anticipate (weakened in many cases), or to the ability to deal with the crisis, such as the emergence of regulation, as an effect to circumvent the absence of coordination, or even by the lack of preparedness of the authorities.

In sum, the analysis of the modified framework confirms that the Brazilian response to neutralize the pandemic crisis was not effective. In particular, when comparing the results of the analysis with the findings in the literature, we observed that the Brazilian scenario was far behind other governments, even countries with large budget constraints such as Taiwan (see LIAO; KUO; CHUANG, 2021). While most countries adopted strategies based on their budgets, this was not seen in Brazil. Added to vulnerability, Brazil's short/medium-term budget orientation may be detrimental to future emerging crises.

7. CONCLUSIONS AND IMPLICATIONS

This paper explored how the national multilevel coordination of budgetary and financial systems functioned as a federation that was engulfed by an epidemiological event, such as coronavirus disease. To contribute to the literature, we started in the Brazilian trajectory by copying Covid-19. We then analyse its responses to counteract the effects of Covid-19 from Padovani, Iacuzzi, Jorge and Pimentel's (2021a) financial resilience framework, with the inclusion of two dimensions: (i) the multilevel coordination of budgetary and financial systems; and (ii) the effects on regulation.

The results of the analysis suggest three main contributions. The first, indicates that budgetary and financial systems that cut across layers of government did not support

coordinated responses, nor were they used to hold decision makers accountable for many problems that arose in the pandemic crisis. The second, deals with an intriguing aspect. According to our perspective, it is that in developing countries, the pandemic may have loosened protections on fiscal and environmental regulation. The last, is that Brazil's polyphonic and sometimes schizophrenic crisis management has opened space for relaxed regulation, which has pushed the country backwards on other issues such as environmental protection.

As a practical implication of particular interest for federal countries, they can use these results (or the modified framework) to review all national coordination mechanisms, including budgetary and financial, to be prepared for future similar crises. Additionally, there is a commitment to financial discipline, as the Brazilian federation is marked by a high financial vulnerability.

Finally, while this is a preliminary set of findings, they offer a way to explore vulnerability and coordination and test it in a significant global event, such as a pandemic crisis itself or an upcoming emerging crisis. Analysis in underdeveloped countries, a range of countries and even the inclusion of new research items to check dimensions of coordination are recommended.

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NOTES

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