

Economic growth and inflation rate: implications for municipal revenue and health expenditure of the municipalities of Pernambuco, Brazil

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Abstract *This paper analyzes the implications of municipal budget revenue growth and the monetary policy's inflation rates goals in the availability of public health resources of municipalities. This is a descriptive, exploratory, quantitative, retrospective and longitudinal cross-sectional study covering the period 2002-2011. We analyzed health financing and expenditure variables in the municipalities of the state of Pernambuco, Brazil, describing the trend and the relationship between them. Data showed the growth of the variables and trend towards homogeneity. The exception was for the participation of Intergovernmental Transfers in the Total Health Expenditure of the Municipality. We found a significant correlation between Budget Revenue per capita and Health Expenditure per capita and a strong significant negative correlation between Inflation Rate, Budget Revenue per capita and Health Expenditure per capita. We concluded that increased health expenditure is due more to higher municipal tax revenue than to increased transfers that, in relative terms, did not increase. The strong inverse relationship between inflation rate and the Financing and Expenditure variables show that the monetary policy's inflation goals have restricted health financing to municipalities.*

Key words *Decentralization, Inflation, Health care financing*

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Introduction

In the 1970s and 1980s, decentralization became an important principle of public sector reforms in several countries. In those emerging from authoritarian experiences, as in the case of Brazil, decentralization has also been understood as an essential realm of democratization¹. In response to redemocratization and Health Reform movements, health decentralization began to appear as a guideline enshrined in the 1988 Federal Constitution.

It is worth mentioning that this guideline was aligned with both the neoliberal interests and aspirations of the Health Reform activists. In the case of the former, decentralization is a way of guiding the restructuring of the public/private mix, decentralizing both responsibilities and funding to subnational levels and to the private sector. In the neoliberal conception, the decentralization guideline also facilitates a flexible management, separating the financial role from the service provision role². In the case of the latter, the decentralization guideline was understood as a realm of democracy and, thus, aligned with its socializing and democratizing agenda. In the list of interests were also those of the municipalist movement, which was keen on bringing the sharing of political and financial power to municipalities and pushed hard for a move towards decentralization³.

The structuring legal instruments of the Unified Health System (SUS) have been established throughout the 1990s. Among them, Law N° 8.080/1990, which links decentralization to municipalization, and Law N° 8.142/1990, which confers greater managerial capacity to states and municipalities^{4,5}. In addition to these laws, the Basic Operational Standards (NOB), the Health Care Operational Standards (NOAS), the Health Pact, Constitutional Amendment N° 29/2000, Complementary Law N° 141/2012 and Decree N° 7.508/2012, among other normative legal instruments, progressively broadened the normative basis for structuring the SUS implementation process⁶.

The orientation of the decentralization process has changed over the course of these regulations. NOBs guided the decentralization process towards municipalization, establishing subnational management spheres of the SUS, states and municipalities, favoring the latter, which now extend their responsibilities and their implementation in public health actions and services. NOAS reoriented decentralization, recovering the role

of the states towards the regionalization of health actions and services. These changes occurred due to the financial and political limitations of the municipalities in ensuring comprehensive health care to the population. The Health Pact continues on the pathway of regionalization, establishing the federative co-responsibility for the provision of health actions and services, calling for accountability among entities. In the current setting, Decree N° 7.508/2011, which regulates Law N° 8.080, seeks to establish the basis for the regionalization of Health Care Networks. This decree establishes the Organizing Contract for Public Health Action (COAP), which aims to “organize and integrate health actions and services, under the responsibility of federative entities in a Health Region, aiming at ensuring users’ comprehensive care”⁷.

The issue of health decentralization is not limited to its underpinning normative base, and considering that its implementation is strongly linked to the mechanisms of public health financing, it is inevitable to discuss the Brazilian fiscal federalism model. Lima^{8,9} affirms that there are two main criticisms by fiscal federalism experts to the Brazilian tax system, governed by the 1988 Constitution and other subsequent legal norms, which are vertical imbalances (between spheres of different levels) and horizontal imbalances (between spheres of the same level of government). The aforementioned author states that vertical imbalances are generated by the federal entity’s high taxation power, as opposed to the spending needs of subnational entities due to the greater responsibilities assumed. On the other hand, horizontal imbalances are due to the socioeconomic inequalities between the entities of the same governing body, which determine differentiated capacities of service provision by these entities with comparable taxation systems. Horizontal imbalances also derive from the different needs of public spending due to the different needs and demands of the population. These imbalances mark Brazilian fiscal federalism and have a strong implication in the national and universal implementation of the health policy⁹.

The role of coordinating these imbalances would be incumbent on Federal Government. However, this role was hampered by economic rigidity resulting from the macroeconomic adjustment policy experienced by Brazil in the post-88 period, with the expenditure contingency to ensure compliance with fiscal goals to ensure generation of primary surpluses^{9,10}.

In 1993, interest rates hiked with the establishment of the Real Plan, which led to reduced

public spending through the restrictive fiscal policy¹¹. In the 1990s, the inflation goal scheme monetary policy is implemented, where interest rates are managed to keep inflation at technically feasible and socially acceptable levels. This culminated in a restrictive fiscal policy subordinated to the monetary policy, with the justification of reducing or even not generating a public deficit¹¹.

In the name of macroeconomic stability, the Federal Government has maneuvered to overcome the loss of revenues related to the decentralization of tax competencies and the increase of constitutional transfers, such as the State Participation Fund (FPE) and the Municipal Participation Fund (FPM). Among measures taken, we mention the increased rates of social contributions; their cost contingency management for economic stabilization funds, such as the Divestment of Federal Government Revenue (DRU); the growing lack of accountability in relation to social policies, justified by decentralization; and the stagnation of the Income Tax (IR) and the Tax on Industrialized Products (IPI), which mostly underpin the FPE and FPM⁹.

In the same perspective, we have gazed at the Northeast Region of Brazil, more specifically, the state of Pernambuco, which, in recent years, has shown a process of accelerated economic growth. According to data from the Brazilian Institute of Geography and Statistics (IBGE), the state evidenced, in the period 2000-2010, a percentage increase of Gross Domestic Product (GDP) equivalent to 253.08%, higher than Brazil (219.64%) and the Northeast macro-region (245.65%)¹². This growth was mainly driven by industry, services and agriculture sectors¹³. It should be noted that these activities have repercussions on several taxes, which are the basis for calculating the municipalities' own resources to be allocated to public health actions and services. We can directly mention the Tax on Industrialized Products (IPI), Tax on Circulation of Goods and Services (ICMS) and the Tax on Services of any Nature (ISS).

This last tax is collected in the jurisdiction of the municipality and the others are collected by the states, with the exception of IPI, which is the responsibility of the Federal Government. Although the collection of these taxes is incumbent on different subnational entities, a percentage of them is transferred to the municipalities, by means of shares or FPM, as is the case of IPI.

Notwithstanding, the municipalities of Pernambuco showed, between 2000 and 2007, a percentage increase of 190.76% in health munic-

ipal expenditure per inhabitant, corresponding to R\$ 183.79, on average, for 2007. This amount (R\$ 261.43) was well below national average for that year and, in the context of the federation and ranked Pernambuco ahead of only Acre (R\$ 165.1) and Amapá (R\$ 167.4). With regard to the municipalities of the other states of the Northeast, the municipalities of Pernambuco had the lowest health expenditure per capita in the Region¹⁴.

In addition to the reflections raised by the health decentralization process and adjustment to macroeconomic policy, and when Pernambuco undergoes remarkable economic growth, which has produced a positive impact on the budgets of municipalities located in the areas with the highest concentration of investments, we should consider the importance that contribution of resources to the municipal budget revenue may represent to the strengthening of the health policy.

Thus, considering that the composition of the health revenue under the responsibility of the municipality consists of own resources that the municipality collects and by the transfers received from the Federal Government and the States and that most Brazilian municipalities already invest in health a percentage of their own resources higher than the minimum prescribed by Constitutional Amendment N° 29/2000, we can assume that the increased absolute value of that revenue is dependent on the increase of the global revenue of the municipalities or the increased value of transfers¹⁴.

In this perspective, this paper discusses the dynamics of health financing in the municipal entity, starting from the following premises: 1) economic growth has an impact on growth of the municipal budget revenue; and 2) the macroeconomic adjustment based on the inflation target-based monetary policy shrinks the volume of Federal Government transfers to the municipalities. Hence, we try to answer the following question: what are the implications of municipal budget revenue growth and the inflation target-based monetary policy on health expenditure?

Methodology

This is a descriptive, exploratory, quantitative, retrospective and longitudinal cross-sectional study covering the period 2002-2011, in which Health Financing and Expenditure variables of the municipalities of the state of Pernambuco were analyzed.

The analysis period was defined (2002-2011) taking into account the significant growth of the state of Pernambuco in those years, as indicated by data from IBGE and State Agency of Planning and Research of Pernambuco (CONDEPE/FIDEM), among other agencies. The choice of such series was also based on the period of operation of the Public Health Budget Information System (SIOPS), the main system to be used for the collection of secondary data on public health finances and budgets. The Ministry of Health institutionalized the SIOPS in 2000, but it only homogenized the calculation of indicators in 2002. The period chosen also covers the period in which Constitutional Amendment N° 29/2000 enters into force. In addition, the final milestone of the series has been set, seeking to ensure that data from all years are fully published by DATASUS.

It is important to note that, during the period under review, data reporting in the SIOPS was not mandatory and subject to penalties for managers. These implications only occurred with the publication of Complementary Law N° 141, dated January 13, 2012. Therefore, this fact can be pointed out as a limitation for the findings of this study.

The state of Pernambuco is made up of 184 municipalities plus the Fernando de Noronha territory, which was excluded from the sample selection process, as well as the municipalities of Moreno and Caetés, because they did not show data referring to the Budget Revenue throughout the series of the Brazilian Financial system (FINBRA).

The sample selection was of a non-probabilistic type and built on the measurement of the percentage growth of the budget revenue per capita between the years of the series (2002-2011). We selected municipalities by establishing the first and third quartiles as cutoff points. Therefore, municipalities with a percentage growth of per capita budget revenue lower than the first quartile (477.30%) and municipalities with values higher than the third quartile (623.98%) were selected, which made up the group of municipalities with the lowest percentages of growth in per capita budget revenue and the group of municipalities with the highest percentages of growth of said variable, respectively, GROUP 1 and GROUP 2. The sample consisted of 90 municipalities allocated to both groups, each with 45 municipalities.

Two public access information systems were consulted to collect the study variables: FINBRA and SIOPS. Monetary variables expressed in absolute values were deflated by the Broad Na-

tional Consumer Price Index (IPCA) for 2011, excluding the effect of inflation on the values to ensure comparability between the series years. The variables underpinning the database of this study were the following:

- Budget revenue per capita;
- Total Health Expenditure, under the responsibility of the Municipalities, per inhabitant (Health Expenditure per capita);
- Percentage of intergovernmental transfers in the total health expenditure of the municipality in relation to the total health municipal expenditure (Intergovernmental Transfers in the Total Health Expenditure of the Municipality);
- Inflation rate (IPCA).

The database was ready to be analyzed using software Excel 2007 and SPSS Statistics® (Statistical Package for the Social Sciences®), version 20.0 for Microsoft Windows. Statistical analysis occurred in three stages:

First stage

In the first stage, descriptive statistics used built on central tendency measures (mean and median) and dispersion (minimum, maximum and standard deviation) variables: Budget Revenue per capita and Health Expenditure per capita;

We also described the trend perspective of study variables, throughout the historical series (2002-2011) by means of a yearly median for all 90 selected municipalities, GROUP 1 and GROUP 2, illustrated with trend charts, which made it possible to compare the evolution of variables between the two groups.

The analyses used the median – central tendency measure – in order to minimize the influence that the isolated extreme values, known as outliers, exert on the results. Since the median is a real element and holds a central position in a series of data, it does not suffer interference from these outliers¹⁵.

Then, we tested the difference in the distribution of the variables between the two groups of municipalities through the non-parametric test of the median. The result of this test was illustrated with boxplot type charts, which schematically aggregates five measures: minimum value, first quartile, median (second quartile), third quartile and maximum value.

Second stage

In the second stage of the analysis, Budget Revenue per capita was taken as an independent

variable and its association with Health Expenditure per capita was tested with Spearman's Correlation Coefficient.

For the interpretation of the magnitude of correlations, the following classification of correlation coefficients (r) was used: weak, " r " values between 0.1 and 0.3; moderate, " r " between 0.4 and 0.6; and strong, " r " above 0.7¹⁶. This association was tested in all 90 municipalities and in GROUP 1 and GROUP 2 separately.

Third stage

In the third stage, the Inflation Rate (IPCA) was considered as an independent variable, associating it with the variables: Budget Revenue per capita, Health Expenditure per capita and Intergovernmental Transfers in Total Health Expenditure of the Municipality. We tested associations with Spearman's Correlation Coefficient.

In the same way as in the previous moments, this analysis was carried out for all 90 municipalities of Pernambuco, as well as the two groups of municipalities separately.

Results and discussion

The measures of central tendency and dispersion for the variables of Health Financing and Health Expenditure, described in Table 1, confirmed the expected growth of variables, which occurred in GROUP 1, GROUP 2 and all 90 municipalities. Regarding Revenue, in 2002, all GROUP 1 measures were higher than those of GROUP 2, while in 2011, this only held true for the maximum (R\$ 4,908.78), standard deviation (606.19) and the coefficient of variation (39.98%). On analyzing Expenditure, in 2002, all GROUP 1 measures were higher except the coefficient of variation (35.92%) and, in 2011, this superiority was reversed in favor of GROUP 2.

The expected growth of the Budget Revenue per capita was based on the economic growth of the state of Pernambuco, whose main sectors were industry, services and agriculture and livestock¹³.

Regarding the expected increase of Health Expenditure per capita, the guidelines of certain legal instruments, such as NOB, NOAS and Constitutional Amendment N° 29/2000 were taken into account in addition to the state's economic growth. Several other studies have pointed to the growth of both municipal revenue and municipal health expenditure^{14,17-19}.

Taking into account the coefficient of variation in Table 1, the reduction of this measure is evident in both variables among all groups, except for the Budgetary Revenue per capita in GROUP 2, where the coefficient of variation increased from 34.91%, in 2002, to 36.72%, in 2011. The analysis of this measure shows that, between 2002 and 2011, these Health Financing and Expenditure variables became more homogeneous among the municipalities of the study.

Araujo and Oliveira²⁰ have collected the evidence that intergovernmental transfers, particularly those of the FPM, have minimized the enormous variance in the financing pattern of Brazilian municipalities. Based on the findings of these authors, it is assumed that the FPM can also explain the tendency towards homogeneity in the municipalities of our study.

Regarding the homogeneity of Health Expenditure per capita, the study by Leite et al.¹⁸ also shows a trend towards uniformity of total health expenditure in municipalities of Rio Grande do Norte, in 2003, 2004 and 2005.

The trend of Health Financing and Expenditure variables shown in Figure 1 coincides with the growth and inversion of the measures of these variables between the two groups, indicated in Table 1. As in Figure 1, at the beginning of the series, GROUP 1 had higher values than those of GROUP 2 for all Financing and Expenditure variables, a situation that was reversed in the last year of the series, as shown in Table 1, where measures of central tendency and dispersion of these variables in GROUP 2 were higher than in GROUP 1.

As described in the methods, GROUP 2 corresponds to the municipalities of Pernambuco with the highest percentages of Budget Revenue per capita growth, so according to the first premise used, it was already expected that this group would show a change in these variables.

The analysis of Figure 1 also indicates the similar behavior of these variables for the two groups of municipalities, with peaks in 2006 and 2009 and downturns in 2008 and 2010. In order to understand what factors might be linked to this, we resorted to literature in a macroeconomic approach, which will be discussed later.

Analyzing the distribution of Financing and Expenditure variables between the two groups, according to Figure 2, the p-value found for all variables by means of the non-parametric test of the median was higher than 0.05. Thus, we conclude that, although the two groups represent municipalities with different percentages of

Table 1. Measures of central tendency and dispersion of the municipalities of Pernambuco. Pernambuco, Brazil, 2002-2011.

		Budget Revenue per capita (R\$)		Health expenditure per capita (R\$)	
		2002	2011	2002	2011
All 90 municipalities	Median	224.55	1,466.48	45.78	306.92
	Mean	260.97	1,574.06	47.50	324.31
	Maximum	1,424.01	4,908.78	146.14	851.63
	Minimum	119.57	844.64	5.95	151.54
	Standard deviation	171.57	844.64	20.35	106.10
	Coefficient of variation (%)	65.87	38.25	42.84	32.72
Group 1*	Median	273.26	1,403.50	49.69	292.12
	Mean	320.44	1,516.31	54.16	318.01
	Maximum	1,424.01	4,908.78	146.14	818.74
	Minimum	154.14	844.64	32.31	151.54
	Standard deviation	218.12	606.19	19.45	102.74
	Coefficient of variation (%)	68.07	39.98	35.92	32.31
Group 2**	Median	198.06	1,511.50	36.98	314.37
	Mean	201.49	1,631.81	40.84	330.60
	Maximum	539.71	4,674.54	114.71	851.63
	Minimum	119.57	915.74	5.95	205.20
	Standard deviation	70.35	599.24	19.19	110.15
	Coefficient of variation (%)	34.91	36.72	46.99	33.32

* Set of municipalities with the lowest percentage growth of the per capita Budget Revenue. ** Set of municipalities with the highest percentage growth of the per capita Budget Revenue.

Source: Own elaboration.

Budget Revenue per capita growth, the statistical analysis outlined here did not show differences in the distribution of variables between them.

This finding confirms that growth was noted for all variables and in both groups, except for the share of Intergovernmental Transfers in the Total Health Expenditure of the Municipality, which stagnated at around 40%-50%.

Table 2 shows Spearman's correlation coefficients and p-values obtained through the association between the Budget Revenue per capita and the Health Expenditure per capita. Based on the data shown in the above table, there was a strong correlation between Budget Revenue per capita and Health Expenditure per capita ($r = 0.988$, $p < 0.001$) for both GROUP 1 and GROUP 2, as well as for all 90 municipalities. This strong correlation was also evidenced in studies by Espírito Santo et al.¹⁴ and Nunes¹⁹.

The study by Espírito Santo et al.¹⁴, which worked with all the municipalities of Pernambuco aggregated by Regional Health Management (GERES), verified that the municipal budget per capita was strongly correlated with the health expenditure per capita of the municipalities, and this correlation went from moderate in 2000 to strong in 2007. Nunes¹⁹ analyzed the relationship between total health expenditure per capita and own per capita revenue of the municipalities of São Paulo, Espírito Santo and Ceará, and found the following respective r^2 values: 82.1%, 64.8% and 46.6%, evidencing positive correlations. In other words, according to these authors, the higher the available income, the higher the health expenditure per capita.

Another important evidence pointed out in the study by Espírito Santo et al.¹⁴ refers to the finding that the average percentage of own re-

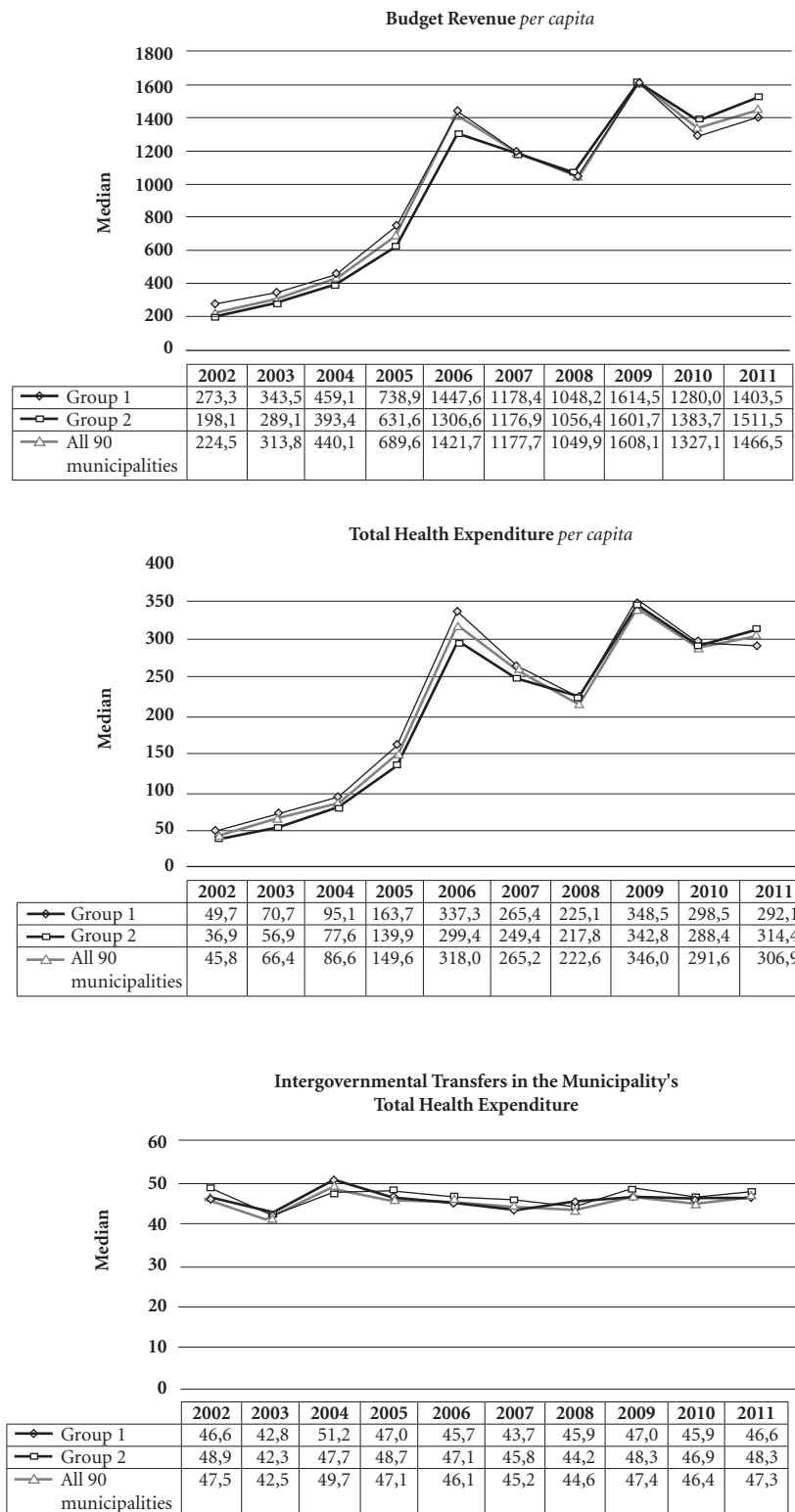


Figure 1. Trend of the Financing and Expenditure variables, in the period of 2002-2011. Pernambuco, Brazil, 2002-2011.

Source: Own elaboration.

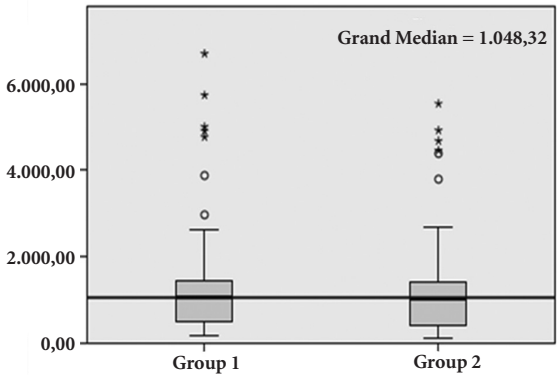
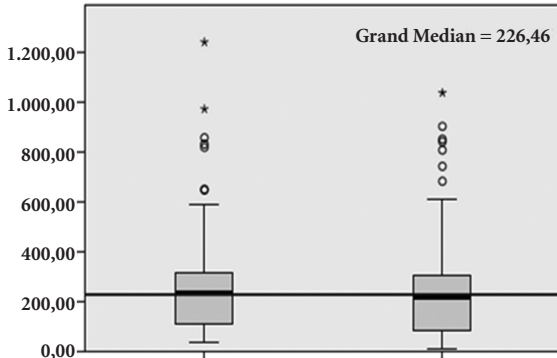
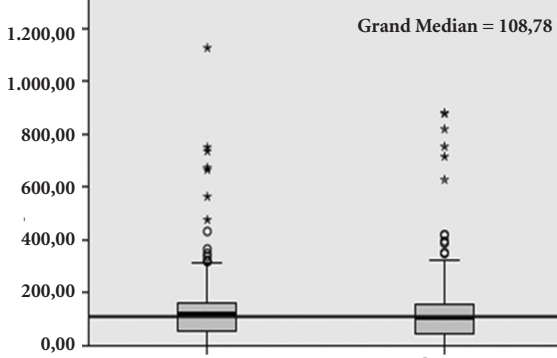
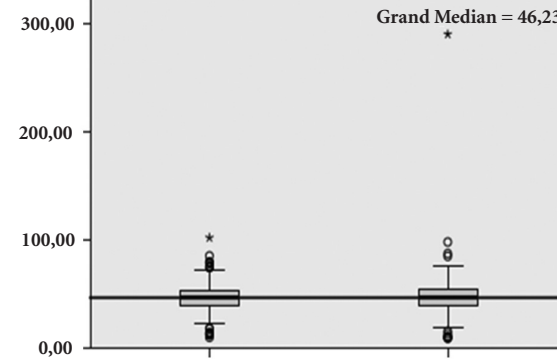
Variable	Boxplot	p-value
<p>Annual Budget Revenue <i>per capita</i></p>		<p>0,641</p>
<p>Health Expenditure <i>per capita</i></p>		<p>0,053</p>
<p>Health Expenditure <i>per capita without the participation of transfers</i></p>		<p>0,053</p>
<p>Intergovernmental transfers in the municipality's total health expenditure</p>		<p>1,000</p>

Figure 2. Boxplot of Financing and Expenditure variables and Median's non-parametric test results. Pernambuco, Brazil, 2002-2011.

Source: Own elaboration.

sources invested in health by the municipalities in the state of Pernambuco already exceeded that provided by Constitutional Amendment Nº 29/2000. In 2007, with the exception of one, all other GERES already had a mean investment value of own resources between 17.01% and 22.26%.

Municipalities, in general, unlike the Federal Government and the states, since the introduction of Constitutional Amendment no. 29/2000, have always fulfilled the minimum health investment percentage levels, even exceeding the minimum legal percentage (15%). This demonstrates that linkage of resources to the amendment did not change the health financing framework of municipalities²¹.

However, it should be noted that, notwithstanding, the health expenditure per capita under the responsibility of the municipalities of Pernambuco is still very low, almost always below the national average, which is a strong obstacle to full decentralization in the supply and management of health services in the state¹⁴.

In order to understand the causes of these obstacles, we go back to the second premise of the study, which addresses the relationship between

the inflation target-based monetary policy and the level of Federal Government transfers to the municipalities, in a macroeconomic discussion, assuming that macrostructural phenomena are implicated in health financing policy.

To investigate this premise, Spearman's correlation coefficients and p-values between the Inflation Rate (IPCA) and Health Financing and Expenditure variables of the municipalities of Pernambuco were calculated.

Table 3 shows the measures of association between these variables, in which a strong significant correlation can be observed between Inflation Rate (IPCA), Budget Revenue per capita and Health Expenditure per capita. This strong correlation (r above 0.7) occurred for all 90 municipalities, GROUP 1 and GROUP 2. It is noteworthy that all Spearman's correlation coefficient values were negative, indicating an inverse relationship between variables, that is, when the Inflation Rate (IPCA) increases, Health Financing and Expenditure variables of the municipalities of Pernambuco listed here are reduced.

Again, analyzing Table 3, no significant relationship was identified between Inflation Rate (IPCA) and the share of Intergovernmental Transfers in the Total Health Expenditure of the Municipality, which is due to the fact that this variable did not suffer great variations in the period under study, as can be verified by reviewing Figure 1, in which it is observed that said percentage was around 40%-50%.

The study by Soares and Santos²², when analyzing public health expenditure of federated entities between 1990 and 2012, found that the relative participation of the Federal Government in health expenditure showed a marked decrease of 38.4%, while states had an increase of 87.2% and municipalities more than doubled their share in

Table 2. Relationship between Annual Budget Revenue per capita and Health Expenditure, under the responsibility of the Municipalities, per capita. Pernambuco, Brazil, 2002-2011.

	Spearman	p-valor
All 90 municipalities	0,988	< 0,001
Group 1	0,988	< 0,001
Group 2	0,988	< 0,001

Source: Own elaboration.

Table 3. Relationship between Inflation Rate (IPCA) and Health Financing and Expenditure variables in the municipalities of the study. Pernambuco, Brazil, 2002-2011.

	Annual Budget Revenue per capita	Health Expenditure per capita	Intergovernmental transfers in the municipality's total health expenditure
All 90 Municipalities	-0.723 ($p = 0.018^*$)	-0.796 ($p = 0.006^{**}$)	0.207 ($p = 0.567$)
Group 1	-0.796 ($p = 0.006^{**}$)	-0.815 ($p = 0.004^{**}$)	0,073 ($p = 0.841$)
Group 2	-0.669 ($p = 0.005^*$)	-0.723 ($p = 0.018^*$)	0.030 ($p = 0.934$)

*At the significance level of 0.05. ** At the significance level of 0.01.

Source: Own elaboration.

public health financing, rising from 12.10% in 1990 to 28.89% in 2012 – an increase of 138.8%.

We should bear in mind that the Federal Government is the entity with the greatest share in health transfers to the municipality. Thus, it is necessary to discuss the relationship between this finding and two elements, namely, the Provisional Contribution on Financial Transactions (CPMF) and the Divestment of Federal Government Revenue (DRU).

The CPMF was in force from 1996 to 2007 and was supposedly exclusive for health, which was not respected and its resources were carried over to the Pension Fund and the Fund for Combating and Eradicating Poverty. Moreover, the incorporation of funds from the CPMF for health was accompanied by losses from other revenues, such as the Contribution to Social Security Financing (COFINS) and Contribution on the Net Profit of Companies (CSLL)^{23,24}. In other words, the CPMF, which would have the role of increasing Federal Government's health financing ended up playing the role of replacing revenue losses. This is one of the explanatory factors for the stagnation of the Intergovernmental Transfers' share in the Total Health Expenditure of the Municipality.

Another important element for the discussion on the screen is the DRU. This is a "maneuver" that carries 20% of the Federal Government's budget to the primary surplus, applying to both taxes and social contributions^{23,24}, which limits the availability of Federal Government funds to be transferred to municipalities for investment in health. Thus, while there is no DRU in municipalities, this "maneuver" has direct implications on the availability of resources for this entity.

Both CPMF and DRU are fiscal adjustment mechanisms used by the Federal Government to meet the dictates of the macroeconomic stabilization policy and structural adjustment of the economy imposed by external agents, multilateral organizations and private interests²⁵.

In addition to fiscal adjustment measures, we should consider the economic policy implemented in the country, also in line with macroeconomic policy. In the current Brazilian context, the economic policy is practically limited to using a monetary policy and submitting a fiscal policy to achieve inflationary control. The inflation-target scheme has been implemented since the 1990s by many developed and underdeveloped countries¹¹.

According to Leite and Almeida¹¹, this economic policy was put into practice, definitively, with the implementation of the Real Plan *when*

there was a lower participation of the State in the economy that culminated in reduced public spending via restrictive fiscal policy and a contractionary monetary policy with high interest rates, which serve as a precondition to the inflationary control discourse.

According to the monetary policy adopted, when inflation hikes, interest rates are managed by the Central Bank to keep inflation at low levels. In more detail, the inflation target-based policy works with the following rationale: whenever inflation rises, interest rates and, consequently, public debt and public deficit increase. By using the justification of the public deficit, the Government limits social expenditure to settle public debt¹¹.

Advocates of this inflation target-based policy argue that interest rates are high due to high government deficits. However, data analyzed by Leite and Almeida¹¹ dismantle this rationale. The analysis of these authors shows that if debt interest was disregarded, the public deficit would be very small, achieving a surplus in some years. Thus, authors bring strong data that causality is the reverse: deficit and debt rise because interest rates are high, not the other way round. Consequently, to pay debt interest, the economy commits resources that should be invested in social areas, such as health. That is, what happens is the use of the primary surplus to pay the public debt instead of investing resources in social policies.

Conclusion

By describing the trend of the variables in the study, it can be seen that there was a significant growth of the Financing and Expenditure variables in the municipalities of Pernambuco, although they were considered municipalities with different percentages of Budget Revenue per capita growth.

In the setting of the state of Pernambuco that experienced significant economic growth during the study period, data corroborated with literature by evidencing a statistically significant association between budget revenue per capita and health expenditure per capita. This fact confirms the role of revenue in expanding and diversifying health expenditure.

However, the low growth in the share of Intergovernmental Transfers in Total Municipal Health Expenditure in contrast to increased Own Health Expenditure per capita limits the investment of resources in the sector, since municipal

collection capacity is much lower than that of the Federal Government.

Then, the municipality's own revenue role in own health financing is clear. Thus, we can infer that increased health expenditure is due to higher municipality tax collection rather than higher transfers, since these, in relative terms, did not grow during the period studied.

Despite the relationship between variables, which shows the inference of municipal own revenue to the growth of health expenditure, the availability of resources for the sector remains one of the great current challenges of the SUS, especially when it comes to municipal financing capacity. Even after the establishment of various legal provisions, such as Constitutional Amendment No. 29/2000 and Complementary Law N° 141/2012, macro-structural impositions restrict the financing of the sector.

The strong inverse relationship between the Inflation Rate (IPCA), the Budget Revenue per capita and the Health Expenditure per capita are concrete data which prove that the alignment to the macroeconomic policy through the use of inflation target-based monetary policy restricts health financing.

The fact that the share of Intergovernmental Transfers in the Total Health Expenditure of the Municipality remains stable also reflects the impact of restrictive fiscal measures on health investments. This finding is symptomatic of the need for the Federal Government to be more active in the financing since it is the entity with the largest collection capacity, or, maybe, going beyond, to question the extent to which the municipality will be able to manage the health of its territory, taking into account the principle of universality in a context of limited resources.

Thus, the health financing issue must take into account the interfederative relationships resulting from the fiscal federalism model implemented in the country, which is also a factor to be considered in the analysis of municipal health financing.

The inflation target-based monetary policy and the use of the primary surplus to pay public debt causes the state to shrink, which is felt mainly by social areas such as health. Thus, beyond the federative question, the economic policy model used and its implications for SUS sustainability must be questioned.

Collaborations

M Feliciano worked on the design of the research, data collection and analysis and writing of this paper. AFB Bezerra worked on the design of research, data analysis and writing of this paper. ACG do Espírito Santo worked on the design of the research and writing of this paper.

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