

Fiscal Responsibility Law and expenditure on health personnel: an analysis of the condition of Brazilian municipalities from 2004 to 2009

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Abstract *The limits for expenditure on personnel that were imposed by the Fiscal Responsibility Act (FRA) have been considered by local health managers as an obstacle to health sector policies. This paper analyzes the linear trend for the personnel expenses indicators and the correlation of this with the profile of spending on health care personnel in 5,356 Brazilian municipalities from 2004 to 2009. The study of the time series used data from the 'Finanças do Brasil' (Finbra) and data from the Information System on Public Health Budgets (SIOPS). There was a trend towards an increase of 1.3% in the annual average of total personnel expenditure in the municipalities, but the cost of health care staff did not follow that growth. There were no correlations between the indicators, and this result is contrary to the arguments given by the health managers. They attribute the problems with hiring workers and the expansion of health systems to the FRA. The availability of data from the Finbra and the Siops system is associated with a lack of knowledge on these issues. This makes it an opportune time for conducting new research.*

Key words *Health expenditure, Information system, Health policy, Fiscal policy*

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Introduction

As has been observed in other countries, in Brazil in the 1990s, measures were introduced which had a neo-liberal character in the economic plan that required a more conservative fiscal position on the part of the Central Government¹. In this context, in the final period, the Fiscal Responsibility Law (FRA) emerged which reflects a group of standards covering public finances with the aim of fostering more accountability in fiscal management. This is supported by the pillars of: planning, transparency, control and accountability in the use of public resources. The FRA aims to act in strengthening national federalism which permits an isonomic approach by the Federal Government, States and/or municipalities in the country.

Based on its pillars and its aim of fostering fiscal accountability as well as curbing the use of public finances to meet immediate priorities, the FRA has been said to have constructed a new fiscal accountability policy that inhibits the adoption of irresponsible populist practices in relation to the public accounts^{2,3}.

As a major attempt of “framing” sub-national finances which is the major reason behind the disequilibrium in public national accounts, the FRA aims to provide equilibrium between tax receipts and spending in the three spheres with special attention being dedicated to limiting and controlling expenditure on personnel^{4,5}.

The reasons for this attention and the relative measures taken for this type of expenditure is due to the fact that the high costs of those in the public sector, means that there is a reduction in the available tax receipts and the capacity of governments to offer basic public services such as education, health and public security. It also means there being restrictions on investment in infrastructure⁶. In addition to this aspect, this area is the main and current area of expenditure. Historically speaking, Brazilian states have spent a high sum on personnel. Between 1996 and 2000, the states spent on average 67% of its net and current income revenue (RCL) on their public-sector personnel. This contributed to their disequilibrium and public debts^{6,7}.

In this context, the FRA set limits regarding expenditure on personnel that applies to the three divisions of government. The limits are calculated as a percentage on the RCL meaning:

[...] the sum of the expenditure by entities of the Federation on: working personnel, non-working personnel and those that receive government

pay outs as a pension (or due to the death of a close family member or a disability), elected members with terms, roles, positions or jobs, civil and military personnel, and members of the governing administration covering any form of remuneration from personnel salaries and personnel benefits of any nature (fixed and variable) to pensions and social costs and the costs of outsourcing contracts that refer to the replacement of public officials, just to give some examples⁸.

For the municipal executive administration, the FRA set out the total spending limits on personnel to be 54% of 60% of the RCL. Thus, the so called *prudential* limit in the municipal sphere is equivalent to 51.3% of the total costs on personnel⁹. Non-compliance with this limit would make municipalities more vulnerable to not meeting their financial objectives and they may be subject to the imposition of penalties as set out in the FRA⁹.

The implementation of this law on Brazilian public finances slowly started to raise interest in the academic community. Repercussions were felt at events on administration and accounting so that between 2000 and 2010, 153 studies were conducted of which 60% analyzed the effects of the FRA in the municipalities¹⁰.

Others studies showed that there is a margin for expenditure on personnel amongst Brazilians municipalities^{1,6}.

Giuberti⁶ conducted a study into the spending on personnel by a group of non-paired Brazilian municipalities between 1997 and 2003 and concluded that the spending limit set out by law, did not affect it. In a similar vein, Menezes¹ (2006) conducted an analysis of the period between 1998 to 2004 for the same group of municipalities, revealing that the number of those that exceeded the spending limits on personnel as set out in the FRA, was insignificant.

In spite of the proof, some sectors state that the FRA has caused administrative “plastering”⁸, which is notable in the face of the challenge for public policies in areas such as health. Where one considers the specific nature of the health sector where most personnel work together in multi-professional teams dividing their tasks and there being a high level of dependency amongst each professional and the high dependence on the obtaining of personnel human resources¹¹, any draconian limits on the contracting of staff will affected the health services for the population.

As a result, the ‘Conselho Nacional de Secretarias Municipais de Saúde’ (Conasems) openly criticized the rigorous spending limits on person-

nel imposed by the FRA, arguing that they impede the development of the Brazilian National Health System (SUS) in the municipal ambit, particularly with regards to the contracting of staff.

The complaints related to the FRA impeding the contracting of staff between 2004 and 2012 was spotlighted in 23 letters, three newspapers in addition to 19 Conasems' magazines¹².

It has been noted that the FRA was related to the crisis in governing in the sector¹³. For Silva and Silva¹⁴, in the health remit it can be said that the FRA created a paradox as: "[...] at the same time in which the state holds accountable the managers in SUS for the provision of complete and universal health services, it stops them from hiring staff for the execution of these public policies."¹⁴

Within this climate, from the congresses held by Conasems between 2006 and 2008, some studies were conducted that shed some light on the resulting problems with the statutory limits and the implications of the FRA in the hiring of staff in health. In 2008 the need for knowledge on the impact of the FRA in the allocation of human resources in health, was included in the national agenda as a priority for health research¹⁵.

However, the incorporation of the issues to be discussed still did not permit, in a satisfactory way, the identification of responses or definitive solutions to the problem.

There are no publications that have investigated the effects of the FRA in the remit of health policies, recognizing the specific nature of this sector and using tax revenue data and data on spending which is available on the public accounts information systems in studies.

Considering the need to understand the impact of the FRA on the spending on personnel in health care in Brazilian municipalities, this paper presents an analysis of the time trends for the spending indicators on personnel and the correlation between this and the spending profile on health staff as well as the capacity to raise tax revenue and the dependency situation that existed between 2004 and 2009.

Methods

Conducting a time series study. In this "[...] the same area or population is investigated at distinct moments in time[...]"¹⁶.

The Financial System of Brazil (Finbra) and the total spending indicator on personnel (DTP) were analyzed. On the Information System on Public Health Budgets (Siops), the spending in-

dicator on health staff (DPS) was used as well as the capacity to raise tax revenue by the municipality (CAM) and the proportion of inter-governmental transferences (PTI).

The information systems, respectively, fall within the remit of the Secretary of the National Finances (STN) and the Ministry of Health whose public presence and access is made possible through the following sites: <http://www.tesouro.fazenda.gov.br> and <http://www.siops.datasus.gov.br>. From these sites, information is obtained on tax receipts and the spending of municipalities^{17,18}.

On the Finbra, amongst other indicators, it is possible to identify the total volume of spending on staff in the government spheres as well as investigating the compliance with the limit set out in the FRA. From Siops it was possible to examine the proportion of the health budget spent on personnel in addition to the indicators of the capacity to raise tax revenue and the dependency on the transference of inter-governmental resources which are applicable to purpose of evaluating the fiscal situation of the municipalities¹⁹. The indicators researched on Finbra and Siops, their composition and what was measured, is explained in Chart 1.

The criteria for defining the universe of the municipalities and the study period was: regularly updating the information systems and the continuous availability of the selected indicators for the highest paired number of possible municipalities which resulted in the analysis of 4,356 municipal units between 2004 to 2009.

Without the objective of carrying out adjustments or projections meaning searching to only analyze the tendencies of these indicators during the studied period, simple linear models were built ($y = a + b \cdot t$) with the view to checking the significance of the inclination (b) for each straight line²⁰.

On the model, the independent variable was time ($t = 1, 2, 3, \dots, 6$) and with the dependent variable (y) which took the yearly average for the distribution of each indicator by municipality.

The correlation coefficient was calculated for the total spending indicators on personnel covering spending on health staff and the municipal autonomy indicator. This last one was created based on the ratio amongst the indicators that measure the capacity to raise tax revenue with the indicator that measures the municipal dependency on the transference of resources.

Additionally, in order to test the series of annual averages for each one of the indicators

Chart 1. What the municipal indicators cover based on the data on FINBRA and SIOPS.

Indicator	What is Covered by the Indicator	What is the response?	SI
Percentage of the expenditure on personnel based on the net and current tax revenue in the municipality	PERSONNEL ASSETS (Personnel and Social Contributions - Pensions and Reforms - Government social payouts - Contributions to Closed Social Security Funds-Salary-Family- Employer Obligations-Other Personnel Expenditure due to Outsourced Contracts-Compulsory Deposits-Judicial Sentences- Costs from Past Financial Years-Employment Compensation Payouts-Reimbursement of Costs of Required Temporary Personnel) + Pension and Reforms + Government Social Payouts + Other Expenditure on Personnel due to Third Party Contracts CURRENT REVENUE – SOCIAL CONTRIBUTIONS – DEDUCTIONS FROM CURRENT REVENUE	The limits/possibilities of expenditure on personnel. Investigate compliance with the legal limit for the municipalities in accordance with the FRA LC 101/2000. Total Expenditure on Personnel=DTP	FINBRA
The percentage of tax receipts from the municipalities, total revenue excluding deductions.	TAX+ Fines and Interest on Arrears (MJM) on the Tax on Rural Territorial Property – (ITR)+ MJM on Property Tax (IPTU)+ MJM on Property Transfer Tax (ITBI)+ MJM on Services Tax (ISS)/ Tax on any Types of Services - (ISSQN)+ MJM of other taxes + MJM of the Outstanding Debt on ITR+ MJM of the Outstanding Debt on IPTU+ MJM of the Outstanding Debt on ITBI+ MJM of the Outstanding Debt on ISS/ ISQN, MJM of the Outstanding Debt on other Taxes+ Revenue from the Outstanding Debt of ITR+ Revenue from the Outstanding Debt of the IPTU+ Revenue from the Outstanding Debt of ITBI+ Revenue from the Outstanding Debt of ISSISS/ISQN+ Revenue from the Outstanding Debt of other taxes + TAX on Property and Income (Intra-budgetary) + TAX on Production and Circulation of Goods (Intra-Budgetary)+ Other Taxes (Intra-Budgetary) CURRENT REVENUE+CAPITAL REVENUE + CURRENT REVENUE (intra-budgetary) (-) DEDUCTIONS FROM CURRENT REVENUE	Capacity for raising funds by the municipality Capacity for raising funds by the Municipalities = CAM	SIOPS
The percentage of inter-governmental transferences on the total revenue from the municipalities, excluding deductions.	Inter-governmental Transferences (Transf. Current) +Inter-governmental Transferences (Transf. of Capital) CURRENT REVENUE+ CAPITAL REVENUE + CURRENT REVENUE (intra-budgetary) (-) DEDUCTIONS FROM CURRENT REVENUE	Degree of dependence by the municipalities in relation to the transferences from other government spheres Proportion of inter-governmental Transferences = PTI	SIOPS
Percentage of the expenditure on personnel based on the total health care expenditure.	Personnel and Social Contributions (-) Pensions (-) Government Social Payouts (-)Family Salaries (-) Wages and Fixed Advantages (Military Personnel)(-)+ Other Variables Costs (Military Personnel)+ Judicial Verdicts + Past Financial Year's Expenditure (-) Judicial Verdicts (-) Past Annual Expenditure CURRENT EXPENDITURE ON HEALTH + CAPITAL EXPENDITURE ON HEALTH (-) PENSIONS(-) GOVERNMENT SOCIAL PAYOUTS(-)	The percentage % amount of spending from the total amount spent on health. Expenditure on Personnel in Health = DPS	SIOPS

following the macro-regions and the population size in the municipality, we used the Kruskal-Wallis test. This is a non-parametric test aimed at comparing independent samples and it is recommended for small samples²¹.

Results

Figure 1 and Table 1 show, respectively, the averages of the past series of researched indicators and the analysis of indicator trends.

Observing the DTP of the analyzed municipalities in Brazil, between 2004 to 2009 we saw that for this one, there was an increase from 2008. This aspect is reinforced in Table 1 when growth in the averages of the indicator from 1.3% in the year was observed ($p = 0.032$). What was also shown was that a major commitment of the tax receipts of the Brazilian municipalities occurred for this type of expenditure during the period.

In spite of the indicator that measures CAM not having shown any significant reduction ($p = 0.248$), we noted a discrete reduction in the last

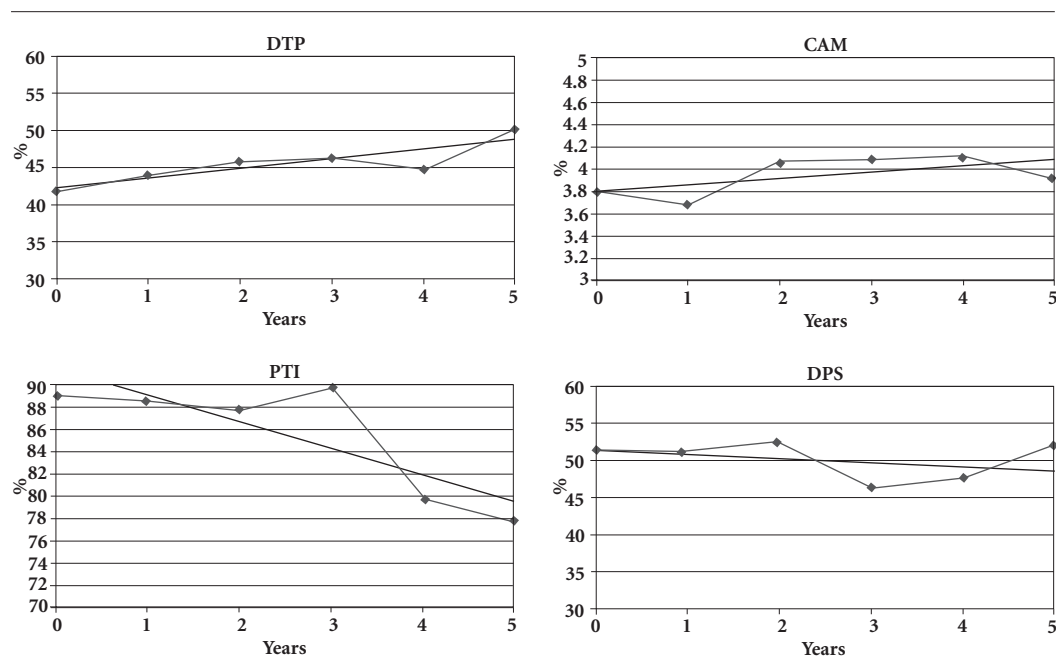


Figure 1. The averages for the past series of indicators of Total Expenditure on Personnel, the Capacity of the Municipalities to Raise Tax Revenue, the Proportion of inter-governmental transferences and Expenditure on personnel in health in the municipalities, Brazil 2004 – 2009.

Table 1. Analysis of the Tendency (linear) of the indicators of Total Expenditure on Personnel, the Capacity of the Municipalities to Raise Tax Revenue, the Proportion of inter-governmental transferences and Expenditure on personnel in health in the municipalities, Brazil 2004 – 2009.

Indicador	Model		R ²	p***	Tendency
	a (intercept)	b			
Total Expenditure on Personnel	41,09	1,26	0,72	0,032	Growth
Capacity of the Municipalities to Raise Tax Revenue (CAM)	3,76	0,05	0,31	0,248	Stable
Proportion of inter-governmental transferences (PIT)	93,56	-2,30	0,68	0,045	Decrease
Expenditure on personnel in health (DPS)	51,56	-0,43	0,11	0,528	Stable

Note: Model $y = a + b \cdot t$ where $t(1) = 2004, \dots, t(6) = 2009$

R² = Determination Coefficient

p*** = Significance of the Test for the null hypothesis $b = 0$

two years (2008 and 2009) suggesting a decrease in the amount of tax revenue obtained by the municipal administrations (Figure 1).

Also in Figure 1, the indicator measuring the PTI which means the dependency of the municipalities on the transference of resources showed, from 2007, a smaller contribution from this source. This was also an aspect shown in Table 1 that during the period, there was a reduction in the averages of -2.3 in the year ($p = 0.045$).

In the analysis of the tendency regression for personnel costs in health for the municipalities as shown in Figure 1, there was no evidence showing any increase or decrease between 2004 and 2009. Therefore, we did not observe the same elevated tendency for the indicator covering the total costs on personnel.

The application of the correlation test (Table 2) showed an absence of any correlation between the three indicators being: total personnel costs, spending on health personnel and the indicator on municipal autonomy.

This absence of any correlation between the selected indicators during the period from 2004 to 2009 indicated that the municipalities that spent the most on personnel in health, were not always those that got the closest to the spending limit on personnel as set out in the FRA.

The indicator of the total expenditure on personnel and the Kruskal-Wallis test, revealed differences per regions or population strata in the municipalities meaning the biggest proportions of DTP ($p = < 0.1\%$) was identified and in relation to the population strata, the municipalities with populations above 500,000 inhabitants showed a greater proportion of expenditure ($p = < 0.1\%$).

With reference to the municipal autonomy indicator per region, we identified that the Central-Western, South-Eastern and Southern regions had more autonomy ($p = < 0,1\%$), when contrasted with the Northeast of Brazil. For the expenditure on health staff indicator, no significant differences were shown for both the macro-regions and the population size.

Discussion

Santos *et al.*¹⁰ affirmed that the FRA is currently the main instrument for management control in relation to public finances. Its creation saw the widening of access demands to information on tax revenues and municipal expenditure and the monitoring and control of spending on personnel²².

The evidence of an increase in personnel expenditure by the municipal administrations identified in this study, is in accordance with the findings of other research^{9,23-26}.

As checked in this study, Nogueira and Rodrigues⁹ noted that in a sample of 3,215 Brazilians municipalities, since 2000 there has been evidence of an increase in personnel costs principally in the biggest municipalities.

Zuccolotto *et al.*²³ analyzed five capital groups according to their wealth, measured by their Gross Domestic Product (GDP). In the period from 1998 to 2006, the research showed that spending on personnel had the highest percentage participation for total expenditure with an average increase of 20.84% at the detriment of the other costs²².

Table 2. Correlation between the indicators for Personnel Costs, Personnel Costs in Health and the indicator of the Municipal Autonomy in the Brazilian Municipalities.

		Personnel Costs in Health	Personnel Costs	Indicator of Municipal Autonomy
Personnel Costs in Health	Correlation	1	0,02	-0,07
		-	0,083	0,644
	N	4356	4356	4356
Personnel Costs	Correlation	0,02	1	0,011
		0,883	-	0,457
	N	4356	4356	4356
Indicator of Municipal Autonomy	Correlation	-0,07	0,011	1
		0,644	0,457	-
	N	4356	4356	4356

Oliveira et al.²⁴, in a study that focused on municipalities in the region of Bahia identified that between 1998 and 2008, there was an increase in the net average expenditure on personnel.

Santolin et al.²⁵ and Linhares et al.²⁶ analyzed, the before and after the law in the municipalities of Minas Gerais and Piauí. They concluded that the effects of the FRA increased spending on personnel.

Supported by the evidence, some of the authors warned that if the municipal administrations continue doing what they have been doing, personnel expenditure will have a tendency to converge to proportions that will commit a greater share of the RCL, which will undoubtedly result in fiscal restrictions and in limits for the compliance with other public policies^{9,23}.

The analysis of indicator trends that measure the capacity to raise funds and the proportion of inter-governmental transferences make it an opportune time to provide clarity that the budgetary revenue is classified in themselves or through coming from the transferences.

The first result of the municipal sources reflects the capacity of the municipalities in exploiting what they own with a view to raising tax revenue or the expropriation of third party resources through taxation. The source of transferences can be intra or inter-governmental²⁷. In Brazil, the budgetary revenues of the municipalities notably come from two sources¹⁹.

We identified that during the period that was studied, the Brazilian municipalities did not show any improvements in the use of taxes which offers the potential for an increase of the CAM. This is similar to the observations of Carneiro and Brasil²⁸. These authors highlighted that despite the 1988 Constitution having widened the competencies and the necessity for the expansion of municipalities raising of tax revenue, it was not able to promote the materialization of these measures nor was it able to substantially bolster the municipalities' finances. This can be explained by the fact that the Constitution, even attributing the power of imposing taxes to the municipalities, did not make the measure mandatory²⁹.

For Santos³⁰, it is important to highlight that despite the municipality being a federative entity, this hard-won autonomy has been limited by constitutional reforms that affect the capacity of governments in the development of public policies. Up until 2011, meaning after 23 years of the Constitution having been in force, there have been 67 constitutional amendments and of these

26 affected positively or negatively, the autonomy of the municipalities. From 1995 to 2002, 14 amendments were approved and between 2003 to 2010, 12 were approved³⁰.

The importance and dependency of the municipalities on the transference of resources has been notable which permits the affirmation that such resources continue to be the "spinal column" of the municipalities public finances. This result is comparable with the research conducted in 2000³¹, 2007²⁹, 2009²⁵, making it an opportune moment to reflect on the division criteria for the resources amongst the spheres.

After the 1988 Constitution, in the process of decentralization there was a form of decentralization of resources. This had negative effects as the dependency of the municipalities on the sources from the Union and the State can produce "complacency" from the administrations thus reinforcing the low use of raised resources. In small municipalities, the main revenue comes from transferences from States or the Union²⁵.

Lima³² comments that due to the absence of designated fiscal criteria, the current system of the sharing of revenue of the Union towards sub-national entities, has the effect of creating a shortage of stimulus for those that raise the most amount of funds or that show better performance in relation to their finance departments³².

However, in spite of being an important source of resources for the municipalities, a considerable part of these transferences is considered as sectoral redistribution and because of this, they are restricted to specific functions. This does not have a direct affect on the general capacity of government spending that receive them³³.

Thus, the fact that resources are connected to the programs that require their being applied in specific functions, this fact reinforces even more this dependence since such connection surpasses the municipal autonomy in relation to its spending²⁷. In the case of health, for being generally resources whose destination has been pre-determined or called "stamped", such sources end up forcing the municipalities to adopt a vertical policy whose characteristics meet the needs of agreements and programs which reflect the local epidemiological reality³⁴.

For Giroldo and Kempfer³⁵, in spite of the Brazilian municipalities having travelled a long distance up to the level of federative status, these units currently still do not have consolidated parity with the other federative entities as, due to economic hyper-sufficiency, the municipalities are dependent on the other entities. Under these

circumstances the administrative and politically autonomous entities, in the face of an absence of financial autonomy in the municipalities, become compromised³⁵.

Having the knowledge that the total expenditure calculation on personnel has a RCL denominator (Chart 1) and that this is influenced by the capacity to raise tax revenues, the assumption is that the increase in the total expenditure averages on personnel, may be directly related to the small change in the raising of funds by the municipalities in the period from 2004 to 2009. This relates to the contracting of personnel occurring without any proportional increase in the financial autonomy of the municipalities.

Under these conditions, the municipal administrations will have limits for maintaining or widening their public policies in view of the fact that spending on personnel will not be accompanied by further tax revenue. In this way, they will be more susceptible to imposition of penalties under the FRA. It is relevant to remember that spending on personnel has a tendency to be constant and to grow. This aspect has become problematic in the face of the revenue trajectory that is vulnerable at conjunctions or cycles of economic crises. During these periods the amount of tax revenue that is their own or which comes from other transferences, falls, which makes the keeping to a rigid expenditure in relation to personnel, problematic and this makes it difficult to comply with the FRA³⁶. However, the findings of this research are still only partial which suggests that new studies are required on this theme.

With reference to the behavior of the municipalities with their spending on personnel in health, it is appropriate to emphasize that in the last years, due to the intensive use of personnel in health services, we noted an important increase in the proportion of workers linked to the municipalities and they have become the main public sector workers^{8,36-38}. Despite the relevancy of such considerations, this study did not identify any growth tendencies in the annual averages of the indicators for expenditure on personnel in health between 2004 to 2009.

The urgency of the debate on the implications of the FRA on the hiring of health care workers noted in the Conasems publications, was investigated by Medeiros and Albuquerque¹². The authors showed that since the 2000 Conasems congress, these issues have been debated and they deserve attention from the relevant stakeholders. However, it was from 2005 that the FRA switched to being connected to the hiring of health care

staff as a limiting inducer and as an obstacle to the development of SUS¹².

The absence of a correlation between the studied indicators contradicts and puts into check the argument contained in the publications of the health care managers which attribute the governing crisis in the health sector to the spending limits on personnel as set out in the FRA¹⁴.

Considering the frequency of the issue on the Conasems agenda and the importance of the findings of this research, some considerations on the total expenditure indicators covering personnel and spending on health care personnel have become necessary.

Dias³⁹ warns that in spite of the FRA being careful in exhaustively defining personnel costs and the way how they should be calculated, we observed that the sub-national spheres used methods to adhere to the expenditure limits and to avoid, the application of fiscal penalties³⁹.

In the experience of the municipalities, Carvalho⁴⁰ highlights some ways out that have been used such as: calculating the spending for the administration as a whole and not just for health, legitimately outsourcing half of the activities done by personnel, reducing positions and reorganizing the remaining roles and outsourcing possible activities for legal persons such as building works, cleaning and security. Another important aspect is the exclusion of precarious contract in calculating the personnel costs in the municipalities.

The use of different methods of registering personnel costs by municipal administrations with the view of lessening the risks of penalties set out in the FRA, may affect the fiscal indicator meaning the use of the “different other methods” which may omit the real conditions and thus reflect the fragility in the quality of the indicators.

However, the confirmation or refuting of this argument suggests the need to develop investigations that are objective and increase the trustworthiness and validity of the Finbra indicators or exploring them through other perspectives.

For Hernandez *et al.*⁴¹ the availability of information on the total expenditure for human resources in health is considered as the most important component of a group of minimum indicators in identifying the weight that these costs represent in the financial sector. Knowing that the remuneration for work activities represents the biggest part of the financial expenditure for the systems in the offer of health services, its availability and other information on the Bra-

zilian national databases suggests innumerable possibilities to be investigated.

With reference to the Sipos indicator, Lima et al.⁴² affirm that trustworthy information is being used. However, Gonçalves et al.⁴³ identified problems relating to the uniformity between the register of the Sipos data and the Financial Auditing Court for the State of Pernambuco. Based on these, the authors reinforce the need for studies that investigate the trustworthiness of the system^{29,31}.

As noted, there are different position on the trustworthy nature of the Sipos data which depends on the indicator type and the base to be used for comparability. The evidence and the absence of studies that explore the indicators for the expenditure on health care personnel, makes it fundamental that research be carried out that investigates the trustworthiness and validity of the indicators. But these considerations do not invalidate the recognition that Sipos and Finbra are important sources for registering the accounts of sub-national entities¹⁷.

The findings identified with the application of the Kruskal-Wallis test are comparable to the Giuberti⁶ study that showed that between 2002 and 2003 the largest amount of expenditure on personnel in the southeastern region. However, with reference to the population strata analysis, the results of this paper go up against that which the author cited and noted between 1997 and 2003 being a reduction in the spending proportion on personnel in the municipalities with a population that had less than 50,000 inhabitants.

In a similar vein, for the findings of this study, the importance of personnel expenditure in large municipalities was also observed between 1998 to 2006 by Macedo and Cobari⁷. This had the effect on the aspects revealed here concerning municipal autonomy which backs up past studies^{6,19,31}.

Conclusions

We concluded that in the tendency analysis there was a rise in the expenditure on personnel of 1.3% in the year as well as a discrete reduction in the standard of dependency for the municipalities on the transference of resources. The raising of tax revenue profiles observed in the municipalities in the period, suggests that if the same conditions are kept in the municipalities in the coming years, the margins of vulnerability to the fiscal penalties will be widened.

Both the trend analysis on spending on health personnel and the correlation tests, reveal the lack of agreement in the discussions that are still present in the health municipal secretaries that connect the governing crisis in the sector to the FRA.

Although the limits are presented, Finbra is the main and primary source of data on public finances in the Brazilian municipalities⁴⁴. Medeiros⁴⁵ investigated the quality of Finbra with reference to accessibility, opportunity and coverage and concluded that the system has been well evaluated in the first two areas. However, the author spotlighted that there are restrictions with reference to the coverage. This is because in the treatment of data declared by the municipalities, we checked compliance to the legal requirements and when there were incoherent registers of the data for the past periods, this produced a list of municipalities “known” as inconsistent. In other words, there are no means of accessing their data in the year, reducing the coverage of the system. Orair et al.⁴⁴ also identified the variability of Finbra’s coverage. However, these aspects did not make compliance with the objectives of this study impossible, which defends the importance of Finbra in the study on public finances on municipalities⁴⁵.

Also, due to the lack of studies that analyze both the Finbra and Sipos systems and the urgent need for responses to questions based on the FRA, new studies that explore the dimensions of trustworthiness and validity of these indicators in the above systems, have become necessary.

Collaborations

KR Medeiros participated in: the development of the project, the idea of the article, the bibliographical review, the analysis and the interpretation of the data including drafting and approving the paper. PC Albuquerque participated in: the idea and drafting the article. RAW Tavares participated in: the drafting and approval of this paper. WV Souza contributed towards the analysis and interpretation of the data as well as the drafting and approval of this paper.

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