CONAMA2012
CONGRESO NACIONAL DEL MEDIO AMBIENTE

Collection Oil Royalties not Contributes to the Development of Brazilian Cities

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Resumen

1. Goal
The growing collect oil royalties by municipalities often have a representation in relation to total local government revenue. However, as more stringent laws are lacking to guide public policy, the implementation of that money often does not occur in areas essential to the growth of the cities, there is therefore a tool that drives the city to a sustainable development.
The purpose of this study was to analyze all the municipalities through three indices: Gini index, Firjan municipal development (IFDM) index and sanitation index, they need to be quantitatively appropriate, aimed at ensuring the good quality of life in cities.
2. Methodology
What if you could get a clear answer about the effect of the royalties, the municipalities were divided into small, medium and large (according to cluster analysis) and then divided into the collecting oil royalties or not.
Three indices were calculated for each group for the years 2000 and 2010. This long time was necessary for municipalities to fund-raisers have a long period for the investment of royalties in key areas.
3. Results
We conclude that the value of the index is very similar in both cities, collectors and notcollectors oil royalties, therefore, the development was also very similar.
Despite the evolution of 2010/2000, small municipalities (with or without gains in royalties) are far behind on sanitation.
From the statistical model, which calculated three indices of development for small, medium and large cities, showing that the money from royalties municipalities do not lead to development.
Only in the matter of sanitation, for large municipalities, the index was slightly better for municipalities collectors, however it is worth remarking that this rate was already higher than in 2000.
One of the problems seen was the lack of restriction in the law, which only limits the expenditure arising out of the royalties to pay debts and staff in the municipalities.

Palabras claves: sustainable development, oil royalties, gini index, sanitation, cities, municipalities

1. Goal

The gains increasing oil royalties by Brazilian municipalities often have a hight representation in relation to total of local government revenue. However, as lack stricter legislation, along with political willpower, the application of this money does not occur in essential areas for the growth of the cities, it doesn't leading them for sustainable development.

The purpose of this study was to analyze all the municipalities through three indexes: Gini index, Firjan municipal development (IFDM) index and sanitation index. They need to be quantitatively appropriate, aimed at ensuring the good quality of life in cities.

2. Methodology

To get an understanding about the effect of the royalties in municipalities, they were divided into small, medium and large (according to cluster analysis) and then divided into the collecting oil royalties or not.

Three indices were calculated for each group for the years 2000 and 2010. This long time was necessary for municipalities that collect oil royalties can have a long period for the investments in key areas.

The indexes were chosen:

A. The IFDM - Consolidated as a reference for the monitoring of the Brazilian economic development, the Municipal Development Index Firjan (IFDM) follows three development areas: Employment and income, Education and Health. The index ranges from 0 to 1, that the closer to 1, the greater the development of the locality (Firjan, 2011). Based on the methodology, stipulated the following ratings for this index:

a. municipalities with between 0 and 0.4 IFDM - low stage of development;
b. IFDM municipalities with between 0.4 and 0.6 - regular development;
c. IFDM municipalities with between 0.6 and 0.8 - moderate development;
d. IFDM municipalities with between 0.8 and 1.0 - high stage of development

B. The Gini coefficient - is an instrument to measure the degree of income concentration. It points out the difference between the incomes of the poorest and of the richest. Numerically, ranges from zero to one. A value of zero represents an equal footing, ie, all have the same income. The value one is the opposite, one person holds all the wealth (IPEA, 2012).

C. Index sanitation - is a set of procedures adopted in a given region which aims to provide a healthy hygienic situation for the inhabitants. They are part of the calculation of the index: sewer treatment, plumbing, cleaning of public streets and avenues, disposal waste. For its calculation it is necessary to know the percentage of households with access to basic sanitation.

3. Municipal Development … Towards Sustainability

Achieve a higher level of development is a desire and a need for all the municipal representatives. The development can be achieved in a particular area, such as economic, environmental and social.

According to Bresser Pereira (2006), economic development is: "characterized by a sustained increase in productivity or income per capita, followed by a systematic process of capital accumulation and incorporation of technical progress." However, the goal is the achievement of development in these three spheres: economic, environmental and social. When we reach these three levels is to have the idea of sustainable development.

The definition of sustainable development, in the classical view of the Brundtland Commission [1], is to meet the needs of the present without compromising the ability of future generations to meet their own needs (CMMAD, 1987).

Thus, sustainable development part of a new development perspective (Sachs quoted in Laws, 1999), where the welfare of current generations can not compromise the opportunities and future needs, as well as the welfare of a part of the generation current can not be built at the expense of another party, creating unequal opportunities in society.

Recently, the Rio +20 conference also treated the issue of municipal sustainability, with several international organizations representing municipalities (UNCSD, 2012). The space given to municipalities in the Rio +20 meeting comes to the importance of the issue on the international scene, with numerous discussions and proposed plans for the development of sustainable cities.

Within the context of the Rio +20 conference comes the C40 Cities Climate Leadership Group, an organization that brings together the world's largest cities committed to implement sustainable policies and local action to help tackle global climate change and sustainability.

After the conference of Rio +20, the 59 members of the C40 cities have pledged to take measures to prevent the emission of 1.3 billion tons of greenhouse gases by 2030.

[1] The Brundtland Report was written in 1987 as a result of work of a committee, which had as presidents Gro Harlem Brundtland and Khalid Mansour. The committee, composed of NGOs and scientists around the world, was established by the World Commission on Environment and Development, United Nations, with discussions around the world. The report presents a complex view of the causes of socioeconomic and ecological problems of society and the interrelations between economics, technology, society and politics.

Besides the C40, there is the ICLEI (Local Governments for sustainability), an association of more than 1220 government officials from 70 different countries concerned with sustainable development (ICLEI, 2012).

The purpose of ICLEI is to treat: the biodiversity, the climate problems, the mobility, the sustainable buys, the sustainable cities and sustainable water management, among others (Cohen, 2011).

However, the main objective of ICLEI is working with the sustainability of cities, inspiring many local governments and communities around the world to put into practice strategic local action for sustainable development.

As ICLEI is regarded as the spokesman of the cities, he was commissioned to produce a document compiling the intellectual contributions of each member state, where local actions are highlighted in search of sustainable development. This document was treated the main trends of the world and how to turn them into driver of global sustainable development by 2050. The trends are: population growth, urbanization, global warming and biodiversity loss, so there is a need to examine the effects of current practices.

Despite the widespread and current issue, the scope of sustainable development requires a lot of effort of representatives and the community at large, with many individual and specific initiatives that together are able to transform every particular action into something sustainable widely.

4. Oil Royalties - Booster Municipal Development?

Whereas representatives of municipality are committed to their development, many suffer from lack of resources to finance a management committed to improving the city.

However, other municipalities receive extra revenue, arising not only from local taxes or state and federal transfers, but the receipt of royalties oil. The important thing is to make this earnings ensure a sustainable regional development, making that money back to the city as compensation for potential damage resulting from this activity.

Ucamcidades (2005) found that the fifty municipalities that received oil royalties in 2003 had larger budgets than the national average, reaching six times the average of the municipalities small (less than 20 000 inhabitants) in the Southeast and four times more than the average small municipalities in the Northeast.

However, Law No. 7990/89 only prohibits the use of royalties collected to pay a debt or staff, making this collection be applied in a manner political, without achieve greater benefits for cities.

5. Results

The first part of the analysis is the calculation of the indexes of small, medium and large cities, to 2000 and 2010, to municipalities with and without gains in oil royalties.

After that, will be shown the evolution of these three indices between 2000 and 2010, divided by size of municipalities.

5.1 Analysis of Indexes

At first, the indexes were calculated for the years 2000 and 2010 (Table 1), with the aim of understanding the level at which the variables were. The time of 10 years was important because public policy may require some time for the indexes reach better results.

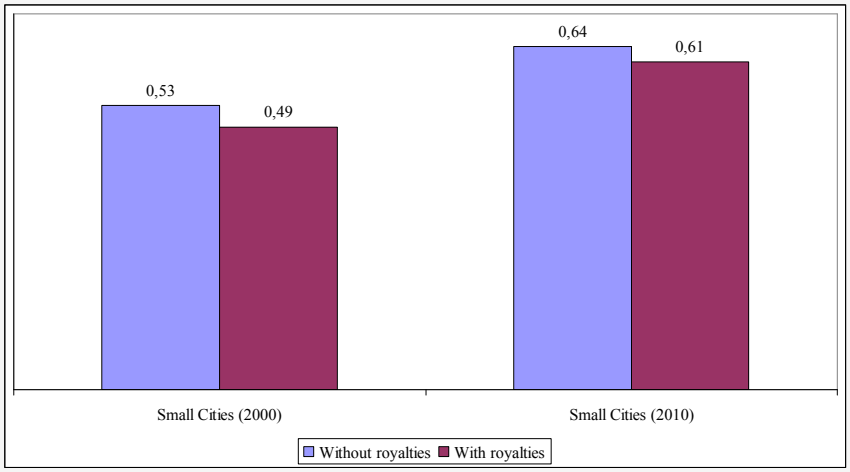
Table 1 - Indices selected for small, medium and large Brazilian cities - 2000 and 2010.

Size of Cities	Royalties	IFDM Index		Gini Index		Basic Sanitation Index	
		2000	2010	2000	2010	2000	2010
Small	**Without**	0,53	0,64	0,39	0,48	0,27	0,35
	With	0,49	0,61	0,40	0,50	0,25	0,34
Medium	**Without**	0,61	0,72	0,42	0,52	0,52	0,56
	With	0,61	0,74	0,43	0,52	0,60	0,66
Big	**Without**	0,62	0,80	0,46	0,57	0,63	0,65
	With	0,67	0,81	0,48	0,61	0,76	0,79

Source: Own (based on data from IBGE and Firjan), 2012.

From Figure 1, we can conclude that the IFDM (Figure 4.1) to cities with low population, had development from regular to moderated, regardless of receiving or not royalties.

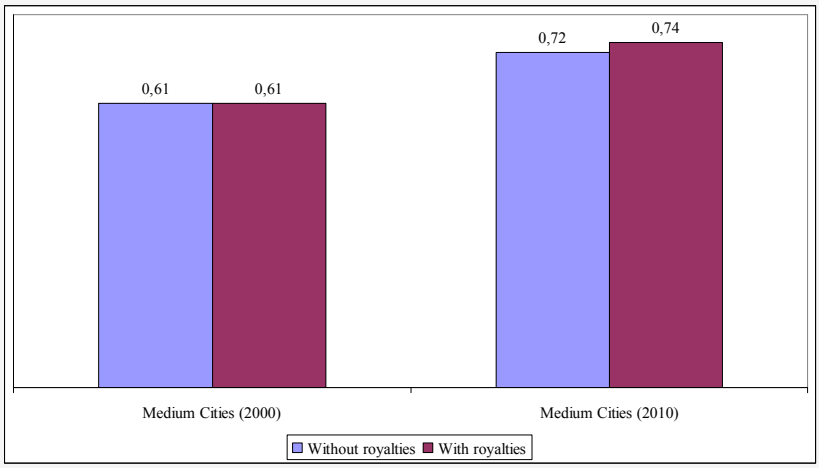
Figure 1 - IFDM small Brazilian cities, second royalties



Source: Own (based on data from IBGE and Firjan), 2012.

For cities with average population (Figure 2), the level of development remained moderate from 2000 to 2010 for collectors and non-collectors municipalities.

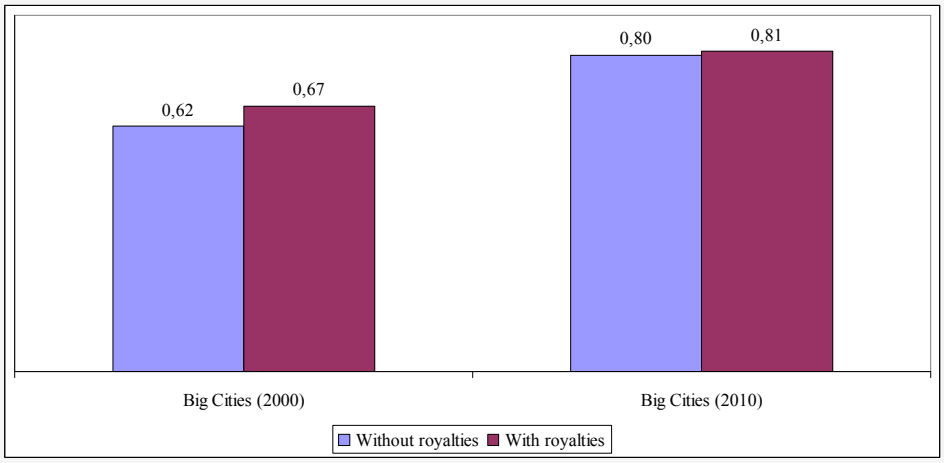
Figure 2 - IFDM the average Brazilian cities, second royalties



Source: Own (based on data from IBGE and Firjan), 2012.

Big cities (Figure 3) had development moderate to high, according to the indicator. It can be concluded that in relation to the indicator IFDM the existence of royalties did not guarantee a higher level of development.

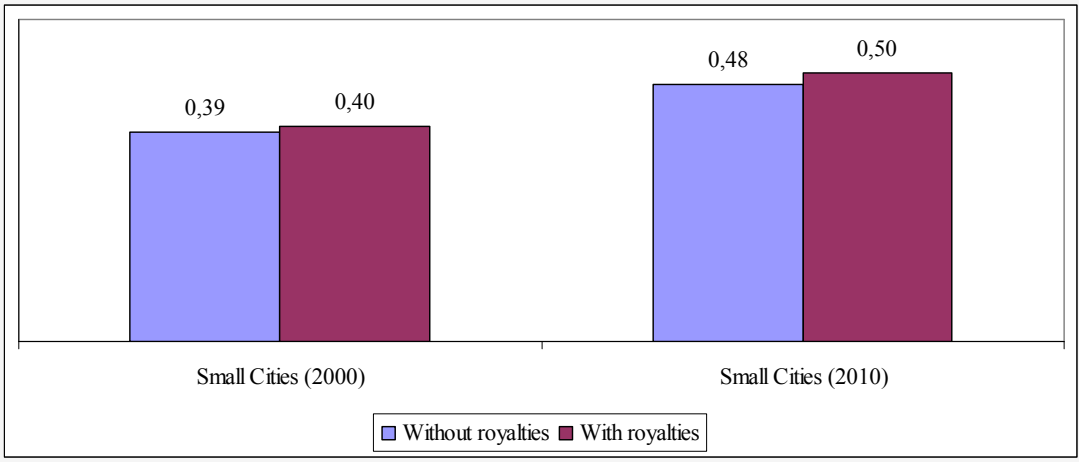
Figure 3 - IFDM of large Brazilian cities, second royalties



Source: Own (based on data from IBGE and Firjan), 2012.

As regards the Gini index, the smaller cities the income was less concentrated in 2000 than 2010 - with or without receive royalties - (Figure 4) where the distance between rich and poor in 2010 became larger. In the case of municipalities with the receipt of royalties, this tax has not reached the bottom of society.

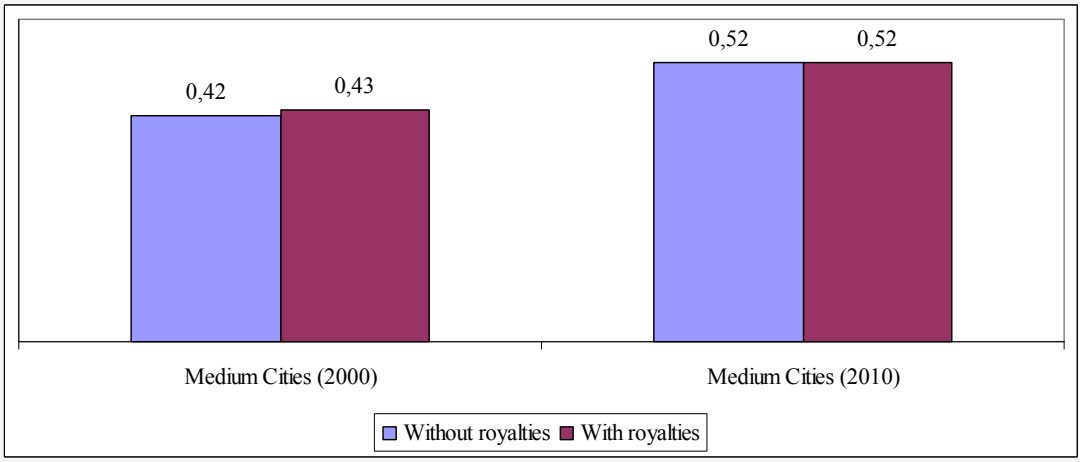
Figure 4 - Gini index of small cities in Brazil, second royalties



Source: Own (based on data from IBGE and Firjan), 2012.

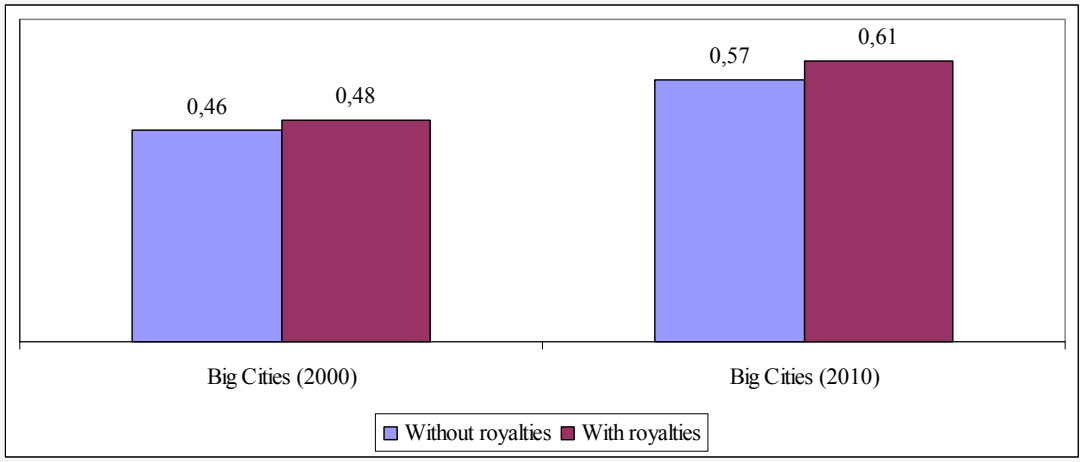
The same is true for all other sizes of the municipality (Figure 5 and 6), making it even worse income concentration in large cities.

Figure 5 - Gini index of the medium Brazilian cities, second royalties



Source: Own (based on data from IBGE and Firjan), 2012.

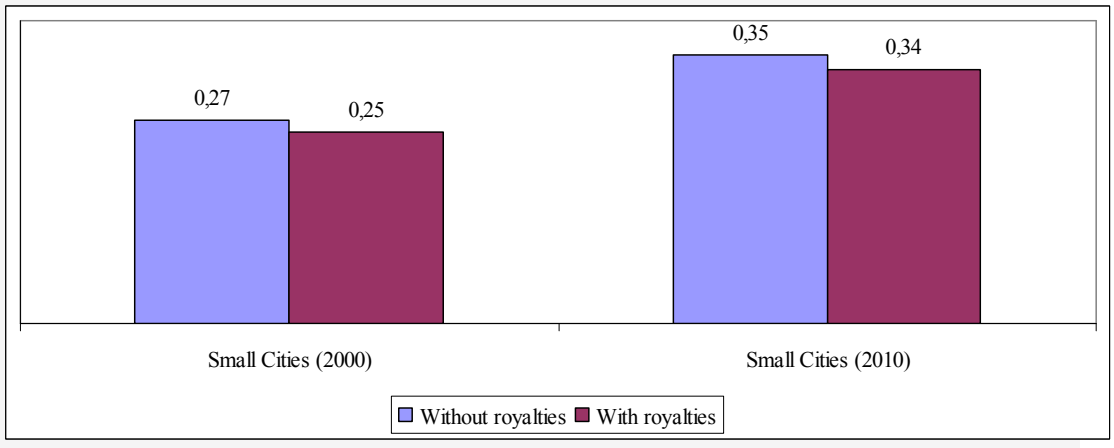
Figure 6 - Gini index of large Brazilian cities, the second royalties



Source: Own (based on data from IBGE and Firjan), 2012.

The level of basic sanitation in all sizes of municipalities, regardless of earning royalties or not, had improved in 2010 compared with 2000. The small cities (Figure 7), proportionally, were the ones with the strongest growth, but 2000 this index was very low, with only 27% of municipalities that not receiving royalties and 25% of municipalities that receive, with basic sanitation.

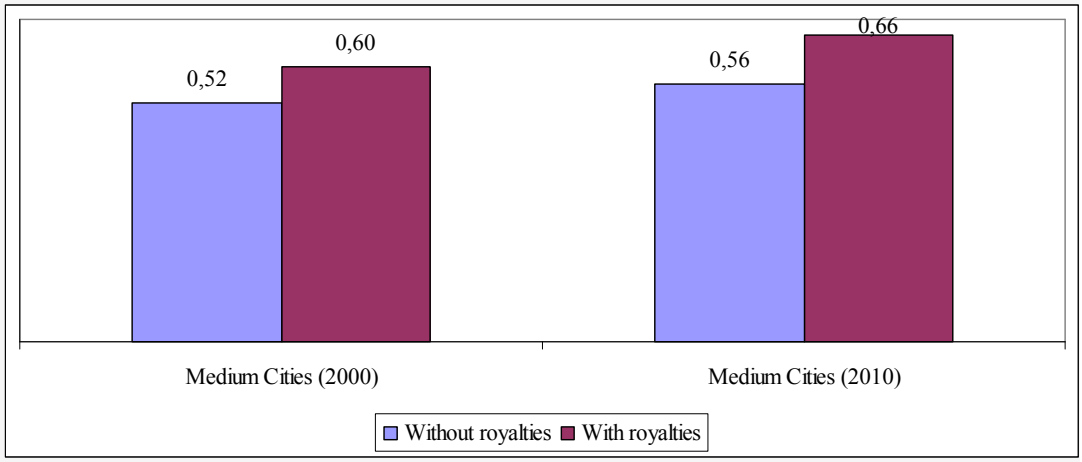
Figure 7 - Rate of Sanitation of small cities in Brazil, second royalties



Source: Own (based on data from IBGE and Firjan), 2012.

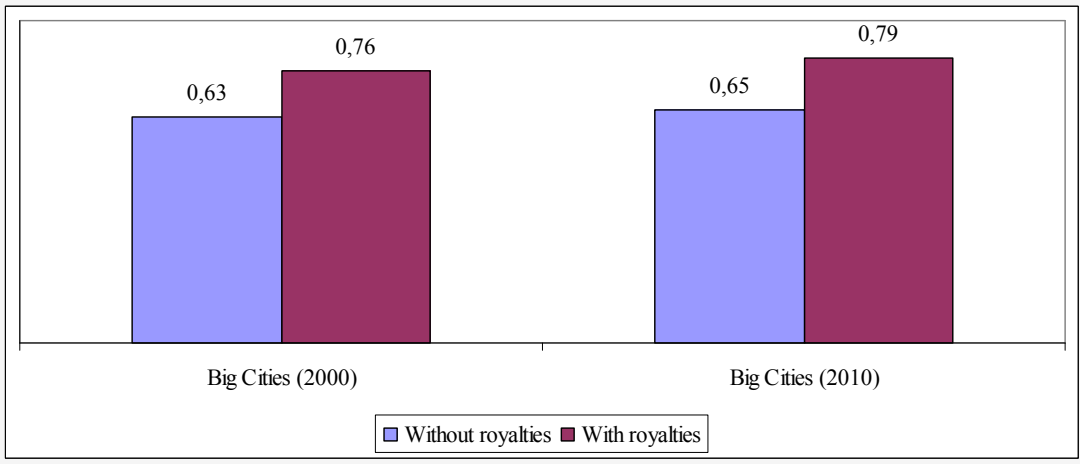
However, all size the municipalities (Figures 8 and 9) have this index worse than expected. Big cities are the ones with the best average, 79% of households with basic sanitation in the cities with earning royalties. In fact, municipalities that earned royalties oil had best index of basic sanitation in 2010, however the baseline already was higher in 2000.

Figure 8 - Rate of Sanitation of medium Brazilian cities, second royalties



Source: Own (based on data from IBGE and Firjan), 2012.

Figure 9 - Rate of Sanitation in large Brazilian cities, the second royalties



Source: Own (based on data from IBGE and Firjan), 2012.

5.2 Evolution of Indices

After the calculation of indices, was constructed the Table 2, which is the average of the variations by municipalities separated into small, medium and large and with and without receiving royalties, for the year 2010 compared to 2000.

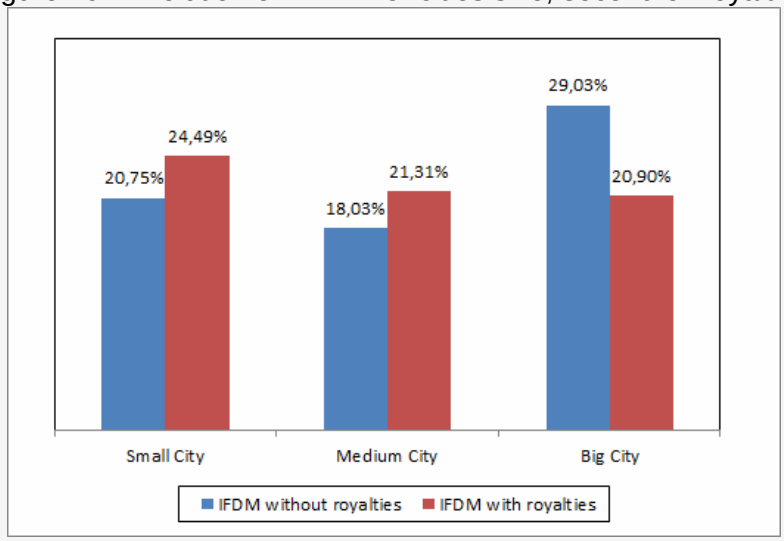
Table 2 - Evolution of the average of changes in rates - 2010/2000

Indexes	Royalties	Size of Cities		
		Small	Medium	Big
IFDM	Without	20,75%	18,03%	29,03%
	With	24,49%	21,31%	20,90%
Gini Index	Without	23,08%	23,81%	23,91%
	With	25,00%	20,93%	27,08%
Basic Sanitation	Without	31,66%	8,31%	3,08%
	With	32,53%	11,60%	4,39%

Source: Own (based on data from IBGE and Firjan), 2012.

Table 2 shown the increase of each index over the past 10 years. Regarding to IFDM (Figure 10), growth was very similar between municipalities with and without gains in royalties.

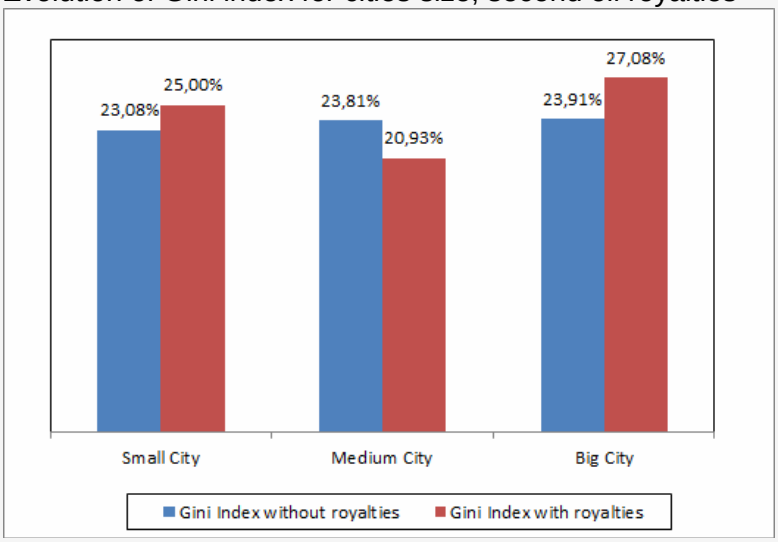
Figure 10 - Evolution of IFDM for cities size, second oil royalties



Source: Own (based on data from IBGE and Firjan), 2012.

The Gini index (Figure 11) has evolved in all sizes of municipalities, confirming the previous hypothesis of a greater concentration of income in 2010 than in 2000. For medium-sized cities, the average variation was higher in municipalities not collectors of royalties and the opposite happened in big cities.

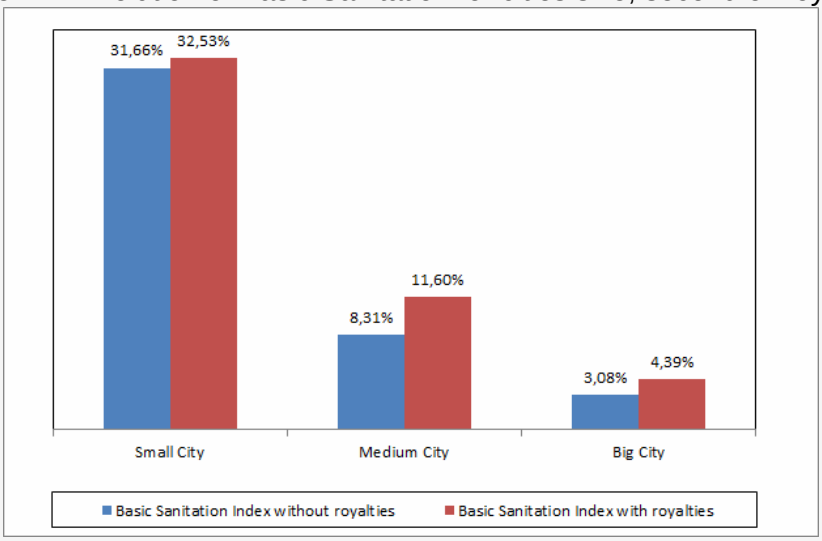
Figure 11 - Evolution of Gini index for cities size, second oil royalties



Source: Own (based on data from IBGE and Firjan), 2012.

Regarding the rate of basic sanitation (Figure 12), the evolution of small municipalities is still far below the desired level.

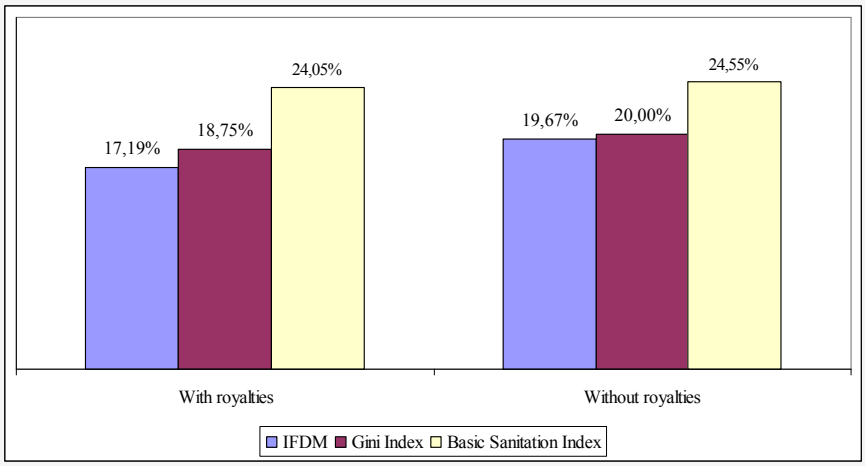
Figure 12 - Evolution of Basic Sanitation for cities size, second oil royalties



Source: Own (based on data from IBGE and Firjan), 2012.

Another way of analyzing the evolution of the indexes would be criticism from the size of the municipality. The small municipalities can best be seen in Figure 13.

Figure 13 - Evolution of selected indices in small towns, second oil royalties

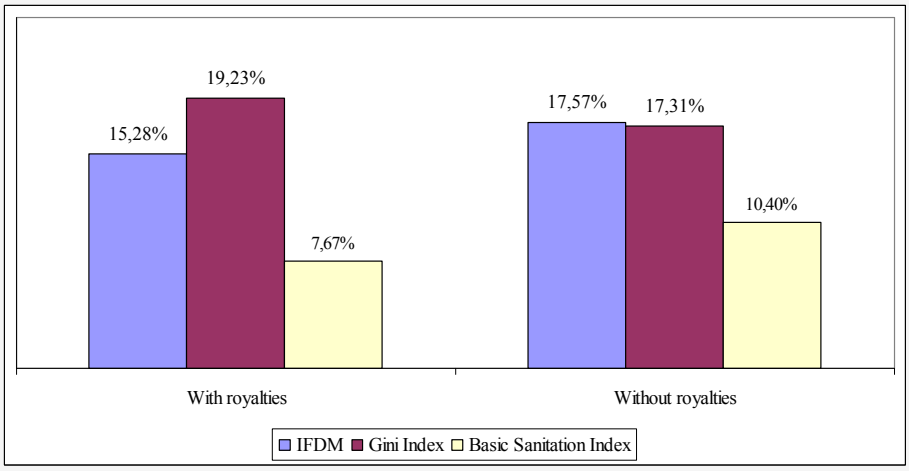


Source: Own (based on data from IBGE and Firjan), 2012.

Note that in small towns, among the indices, the rate of sanitation was the fastest growing in the last 10 years, because, in 2000 the number of households with sanitation was very small.

The Figure 14 deals with the evolution of the average rates in cities.

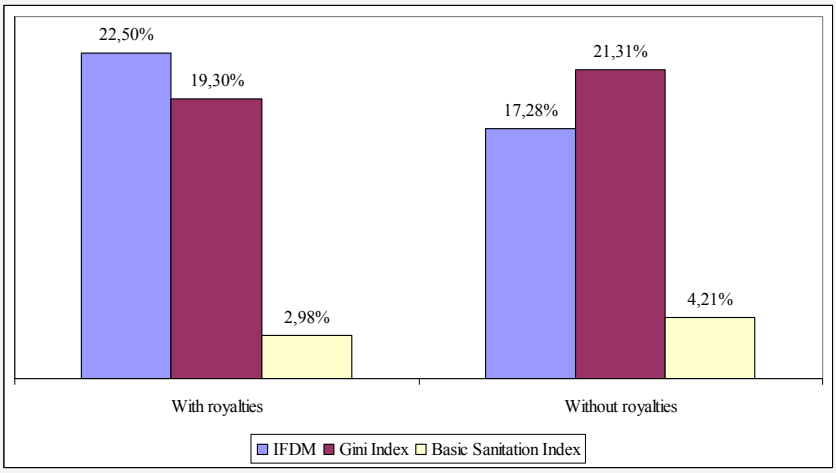
Figure 14 - Evolution of the indices selected in medium cities, second oil royalties



Source: Own (based on data from IBGE and Firjan), 2012.

In medium-sized cities, there is practically no evolution of the indexes in relation to cities with and without royalties, growth was stable and similar. The next Figure refers to the bigger cities.

Figure 15 - Evolution of the selected indexes in large cities, the second oil royalties



Source: Own (based on data from IBGE and Firjan), 2012.

In large cities, the worst variation was rate of basic sanitation, perhaps because it were at a level better than others in 2000, but not enough for the quality of life of all citizens.

6. Conclusion

The conclusion is that the value of the index was very similar in both cities, collectors or not of oil royalties, therefore, the development was also very similar.

Despite the evolution of 2010/2000, small municipalities (with or without gains royalties) are very worse on basic sanitation index then big cities.

From the statistical model, which calculated three indices of development for small municipalities, medium and large, it was shown that collectors of oil royalties do not have indexes better than who did not earn.

Only in the matter of sanitation, for large municipalities, the index was slightly better for municipalities collectors of oil royalties, however it is worth remarking that this rate was already higher in 2000.

One of the problems seen was the lack of restriction in the law, which only limits the expenditure arising out of the royalties to pay debts and staff in the cities, besides political willpower to the municipal development.

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