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**Evaluation of fund raising from National (PMAT - BNDES) and
International (PNAFM - IDB) organizations to Brazilian municipal governments**

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Handwritten part of the Graduation Project of the student Victor Zajdhaft, presented to the School of International Public Affairs - SIPA at Columbia University, as a partial requirement for the degree of Master of Public Administration.

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I dedicate this dissertation to my wife Karina, my daughters Giovanna and Isabella, to my Family and in memorian to my father, my biggest supporter, the Professors at Columbia University, Colleagues of the MPA program and IplanRio.

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Abstract

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Brazil has experienced significant changes in the last decade, but to increase the investment rate as a proportion of GDP remains a challenge and different organizations, national and international, play an important role in this subject, providing subsidized credit for medium and long-term projects. The literature dealing with the effects of lending to the public sector is still nascent, even if there are many programs and credit lines specifically focused on this sector. Therefore, this study aims to analyze the efficiency of two different programs to municipalities. The first is provided by BNDES, called PMAT - Modernization Program of the Fiscal Administration and the Basic Social Sectors Management. The second is provided by the IDB, called PNAFM - National Program to Support the Administrative and Fiscal Management of Brazilian Municipalities. The first results indicate that the effect of the programs on tax revenue is very small and very difficult to find out, since a great number of different variables interact. The municipalities are unanimous in reinforcing the great evolution in services providing, infrastructure and modernization that they have gone through with these resources, bringing huge benefits for all its citizens, entrepreneurs, visitors and public servers.

Key-words: fund raising, public sector, BNDES, PMAT, IDB, PNAFM.

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1. Introduction

Brazil is the world's fifth-largest country, world's eighth-greater economy and Latin America's largest economy. The Brazilian government dominates many areas of the country's economy, undercutting development of a more vibrant private sector, and Brazil's four-year growth average of 4 percent seen in the beginning of the 21st century, already turned to negative values. Government debt reached more than 70 percent of GDP and its expenditures consume more than 40 percent of GDP.

The pace of Brazil's regulatory reform has slowed and the tax burden is much heavier than in many other emerging economies. Corruption is high, private property rights are insecure, and the judicial system remains vulnerable to political influence, although the "*lava-jato*" investigations are beginning to change this scenario. Brazil needs more economic freedom, and the government should eliminate barriers to entrepreneurial activity - burdensome taxes, inefficient regulation, flaws in long-term financing, and continuing government-created rigidities in the labor market.

Brazil is also too dependent on commodity exports and risks being afflicted by the "Dutch disease" where revenues from natural resources make the currency stronger, imports cheaper, and manufactured products more expensive. Sustainable growth will require internal reforms to boost productivity and economic freedom.

It is undoubtable that Brazil urges economic reforms, including a project setting limits for the growth of public spending, a Social Security System reform and the rationalization of the tax burden.

Over the past decade, Brazil has gone through several macroeconomic and social changes, such as increased growth acceleration, reduction of unemployment, increased wages and changes in the social structure, with significant increase in the middle class. Among the changes in economic policy, we highlight the increased role of BNDES and IDB in promoting investment in recent years. Although the best prospective country assessment by foreign investors has contributed to the increase in investment in recent years, improvement in supply and in private and public credit conditions also exerted a fundamental role in this process (LUPO - RINI; ALVES, 2010).

As a public development bank, BNDES has always been important for the promotion of economic development policies, since several sectors need financing to simultaneously implement long-term projects. Moreover, the high risk of credit demand cannot always be completely filled by the private market, preventing major investments (BRUCK 1998;

Stiglitz, 1993). Finally, public development banks can also act anti-cyclically in the credit market, maintaining the investment cycle (HERMANN, 2010; BRUCK, 1998) even in adverse economic conditions. Thus, the changing role of the institution that took place from 2003 reinforced the two traditional roles of public development banks and BDNES became the main driver of the country's investments.

In the same way, IDB developed different programs to help the management modernization of states and municipalities in Brazil, like the PNAFE and the PNAFM that will be studied in this paper.

The main motivation of this dissertation is the small number of studies that purport to investigate the effects of the institutions financing programs specifically aimed at the public sector. Moreover, like any public policy, evaluation of the potential of these loans can contribute to the design of this type of policy and hence for better allocation of public resources.

In particular, this study aims to assess the potential effects arising from loans specifically taken by Brazilian municipalities with BNDES and IDB, from one of its lines of financing, namely the Program for Modernization of Tax Collection and the Basic Social Sectors Management – PMAT and the National Program to Support the Administrative and Fiscal Management of Brazilian Municipalities - PNAFM. As their names suggest, these programs expect that municipalities benefit from such resources presented some improvement in tax collection (the collection of own taxes) and the modernization of their processes.

For this evaluation, I used an analyses of data before, during and after the implementation of these programs, examining whether PMAT and PNAFM have effect on municipal taxes (property tax and ISS, specifically), and the effect arising from the accession period to the program. I chose 5 big cities in Brazil that I had enough data to make the analysis.

The results of this study indicate that municipalities benefited with funds from assessed programs does not show improvement in their own collection, suggesting that the participating municipalities have chosen not to join the programs, the behavior of their tax collection would not have been significantly different from actually occurred after receive funds from the BNDES or IDB. The explanations for these findings are presented in Sections 6 and 7.

This paper is organized as follows. In the next section, we will write about the Methodology and then review the literature that deals with the importance of BNDES and IDB, and the effect of the institutions loans. Section 4 presents a simple design of the

municipal budget system in Brazil, showing how the municipalities get their money. Sections 5 and 6 present a brief history of the BNDES and IDB institutions, as well as a summary of the objectives and characteristics of the programs evaluated. Section 7 presents a descriptive analysis of the results of the Programs and section 8 concludes this dissertation.

2. Methodology

The methodological approach in this paper is a survey in the literature on loans from national and international organizations to municipalities and its definition or classification. A review on the Federal, State and Municipal legal framework on external. It is mentioned a series of loan programs inside the organizations without detailing them further. Some administrative quality tools are used to define criteria to select the cities of the sample according to the relevance. As base to the proposal of the conceptual model it will be addressed only the options of resources already in use in the municipal sphere. A brief history of BNDES and IDB, and their credit lines to municipalities (subnational government). The Proposal is conceptual, meaning that no deep research was performed at this moment at this level of the proposition. Different forms of identification of the relevance of the investments done with the loans will be proposed. PMAT and PNAFM are the only loans analysed For this paper.

3. Bibliographic Review

As mentioned earlier, this section of the dissertation aims to present some literature references that deal with the BNDES and IDB, beginning with the first one.

Indeed, given the relevance of its operations in the Brazilian economic development, there are a number of classic works about the BNDES institution. Most of these, and in line with the actual bank performance profile. It deals with topics such as industrialization and infrastructure, in Viana works (1981), Najberg (1989), Daugther (1994), Bonelli and Pinheiro (1994), Ferreira (1995) and Currarelo (1998), some of the works most frequently cited throughout the literature on the bank, plus the classic books of Lessa (1983) and Baer (1988), among others.

The literature that specifically discusses the effects of BNDES loans has grown significantly in recent years, when there was also a significant increase in the volume paid by the institution. Some articles have mainly discussed the effect of the funding received by companies, namely the productive sector of the economy. For this group of beneficiaries of

financing from BNDES, in principle, we should expect an improvement in the profitability of companies benefited from the institution loans. This effect should have two benefits, the first and most direct is the decrease in financial expenses to contract subsidized credit. The second is actually the result of one of the justifications for the existence of public development banks: without such institutions, many viable projects could not be implemented due to lack of long-term financing on the private market, mainly those connected to the infrastructure development of the union, states and municipalities. Therefore, the subsidized public credit decreases this liquidity restriction, allowing the execution of unfeasible new projects before by the private credit market (BRUCK 1998).

Following this line of reasoning, Lazzarini et al. (2012) evaluate the effects of BNDES loans, in addition to the bank's participation in the shareholding structure of the companies on capital expenditure and profitability. The authors' conclusion is that the effect of BNDES disbursements on these variables is zero, except for the financial spending measure, which decreases with the purchase of subsidized credit.

In addition to the financial performance of companies, other measures were also used to assess the effectiveness of allocations from BNDES to the productive sector of the economy. One of the first references is the work porNegri et al. (2011), which analyzes the impact of credit lines both as BNDES FINEP on employment, labor productivity and exports of the beneficiary companies. The authors find positive effects for employment and exports. They also analyze the dynamic effects of the program, in other words, how the effect of loans behaves in the years following the grant. The effect on employment is always positive and grows over the years, whereas the effects on exports have inverted U-shape, with peak effect four years after the signing of the loan. Reiff, Santos and Rocha (2007) also found positive effects on employment, but made this analysis at the municipal level.

Also focusing on BNDES financing to exporting companies, specifically assessing the effects of BNDES - Exim, Moreira, Tomich and Rodrigues (2006) find evidence of a positive relationship between total exports and the start of this line activities. Already, Silva (2012) has shown that companies benefit from BNDES loans are more likely to start exporting within three years after receipt of the funds. Silva (2010) found positive relationship between loans from BNDES - Exim and the residence time of the exporters in the international market.

Other authors also evaluated the effectiveness of the BNDES allocations to business productivity, diverging on the results and mainly used in productivity measures. As Ottaviano

and Souza (2008), the rationale for evaluating the effect on the productivity of companies on the idea that public development banks contribute to decrease the credit restrictions that companies benefit would face in the private market, thus allowing an investment increase. However, the increase in these investments can occur either by increasing the execution of projects with weak old technology, which would reduce productivity, as by implementing intermediate projects with new technology, which would increase productivity. The authors empirically test the effects of BNDES loans on the productivity of beneficiary companies, as measured by value added work. The completion of the work is that, for larger companies, loans positively affect labor productivity. However, for smaller projects, are negative effects for this measure. Also testing the productivity of labor, Sousa (2010) analyzes the effects of allocations BNDES about the different types of new projects implementation costs, as costs for research and development (which should increase productivity) and fixed production costs (which should reduce productivity). The author concludes that although the two types of suffering reduced costs, there is no evidence of positive impact of these loans on the productivity of companies.

Rabbit and Negri JA Negri (2010), in turn, assess the Total Factor Productivity (TFP) and conclude that firms that already had PTF higher than the average of the economy had a greater positive effect on loans on productivity. Already Ribeiro and De Negri (2009) make a more specific analysis, examining the effect of BNDES disbursements on TFP of innovative firms. The authors did not find a consistent positive effect for PTF.

The discussions presented suggest that, despite the significant amount of work done already debating the effects of BNDES loans to the productive sector of the economy, there seems to be consensus on the results presented. In addition to the diversity of possible measures to assess the effectiveness of programs for this sector of the economy, such as profitability, labor productivity, total factor productivity, exports and employment, there is still the difficulty in getting data to analyze the potential effects of loans since the data can be kept confidential. All this diversity of measures and lack of public access to data difficult consensus on such work.

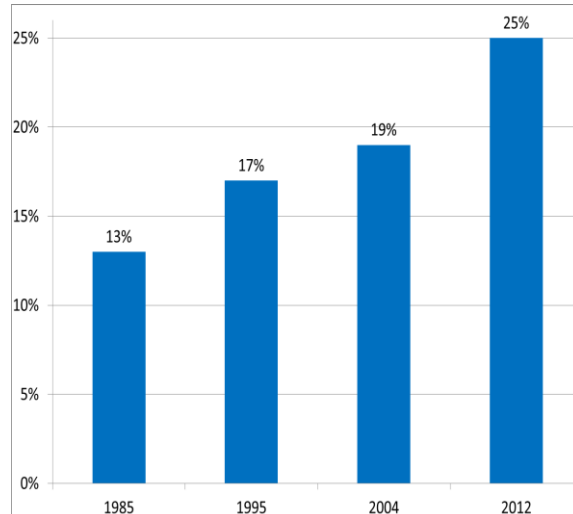
Regarding the efficiency of the funds disbursed by the BNDES for the public sector, the literature is less extensive. The work that is closest to the purpose of this dissertation is Gadenne (2012) which assesses what kind of variation in income generates higher increase in public spending: increased tax revenue or increase in federal transfers to municipalities. To perform this analysis, the author estimated initially municipalities that benefited from PMAT

resources have increased tax revenues. Using 1999-2009 data, the results suggest that the program is efficient, generating an 11% increase in tax revenues of the participating municipalities. In a second stage, they are compared the effects of this increase in tax revenue and increased transfers via the Municipalities Participation Fund (FPM) on municipal expenditures. In this case, the author finds evidence that only the increase in tax revenue is able to increase spending on education, while revenue increases via transfers do not exert such an effect.

In a similar assessment, Son (2013) also analyzes the efficiency of PMAT and found positive results, suggesting that the municipalities that participated in the program were able to increase their tax revenues.

Differently from the literature of BNDES, I did not find studies about the loans of IDB to Brazil, especially to the municipalities, but I found interesting informations about the increase of loans to subnationals' government, the name they use to divisions of a country (region, county, state, municipalities, and others).

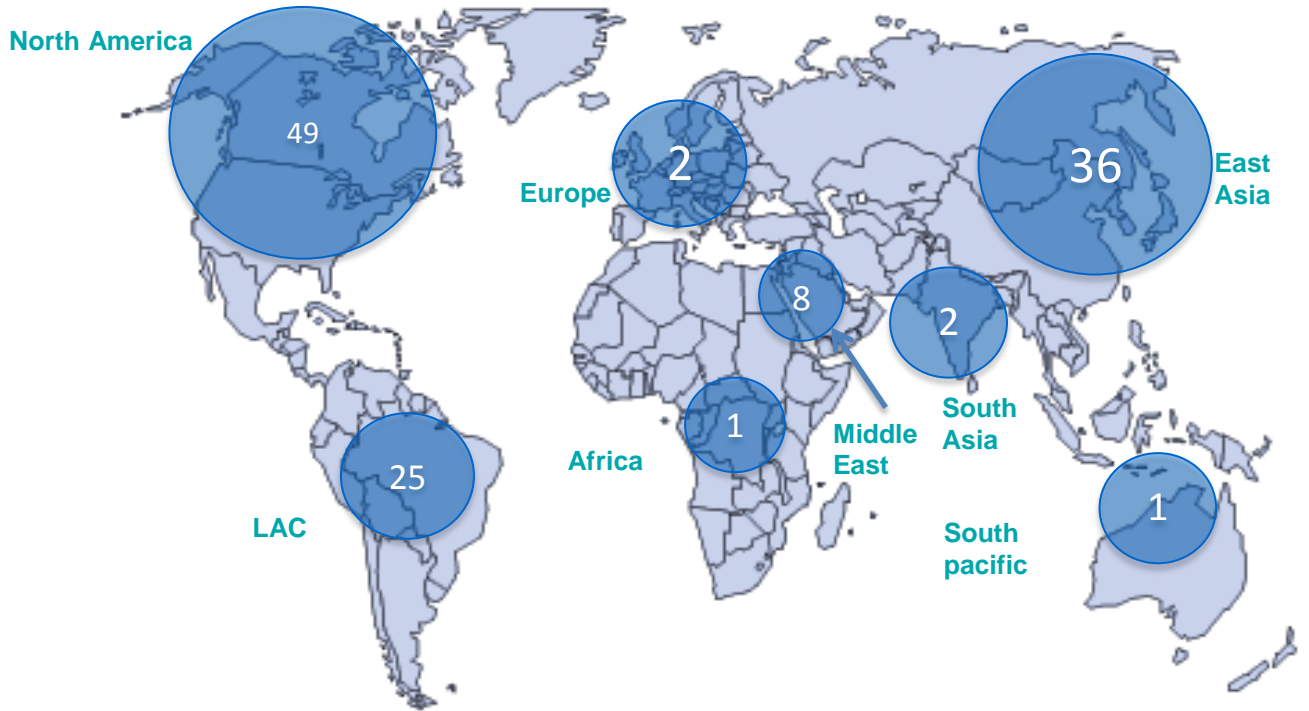
Figure 1 - loans to subnationals' government



Source: base in IDB (1997), Daughters e Harper (2007) e tax information platform of IDB.

The subnational disbursement as a percentage of the total disbursement of the government all around the world, show the importance of the subnationals governments (SNG).

Figure 2 - subnational disbursement as a percentage of the total disbursement

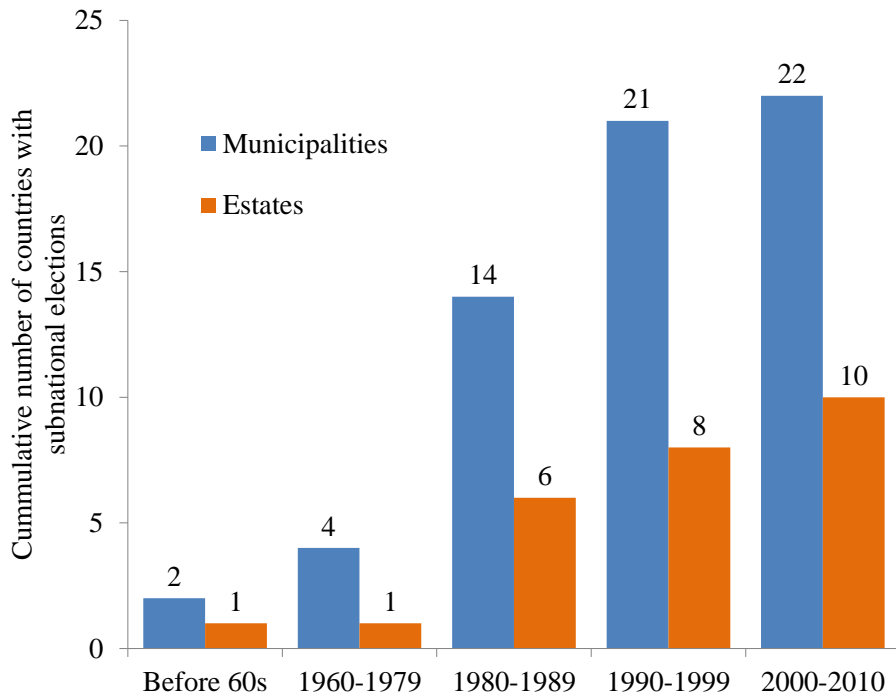


(*) Excludes Mexico

Source: World Bank and 2010, GOLD Report II, Local Government Finance: The Challenges of the 21st Century. North America, East-Asia, Europe, South Asia, Latin-America, Africa and Middle East (Mexico is in Latin America and Caribbean)

Decentralizing political and administrative Countries with sub-national elections in LA

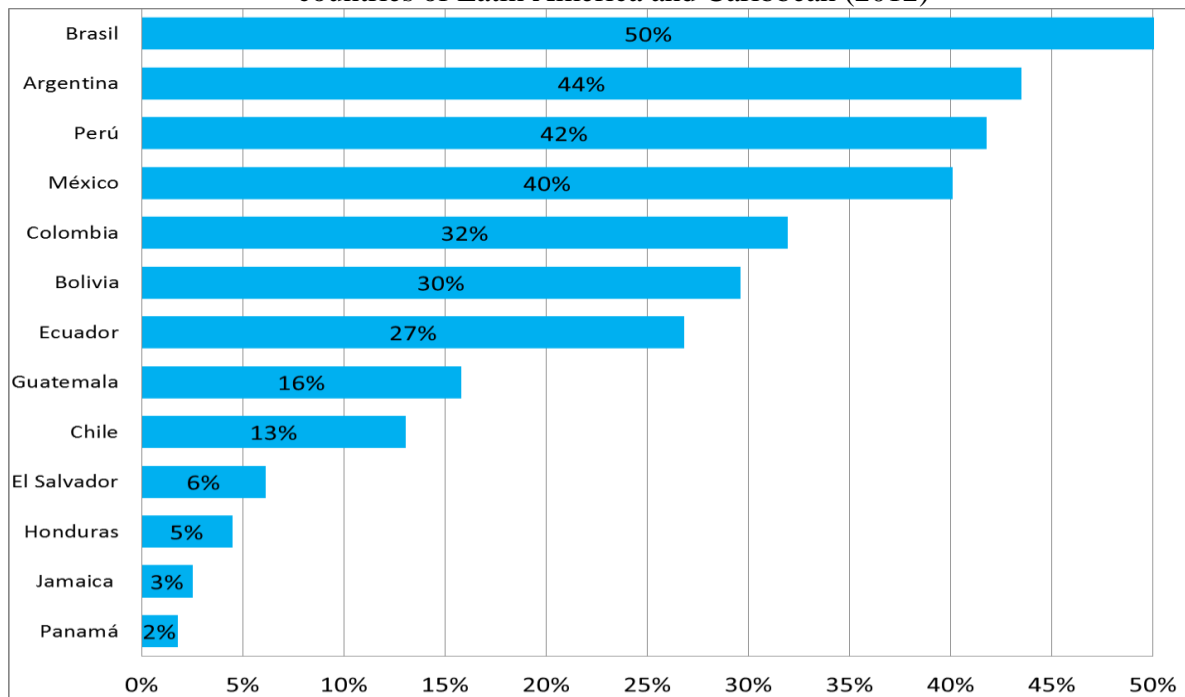
Figure 3 - Countries with sub-national elections in Latin America



Source: Daughters and Harper (2007) updated by Rafael de la Cruz
 News: Uruguay (Municipalities 2010), Bolivia (2005) and Peru (2002) Estates

The main motivations for these increase were: Democratic Opening (end of the dictatorships period in Latin America), Economic crisis of the 80's decade, Institutional reforms in the 90'(with the privatization of many state companies) and the Commodity boom in the years 2000'.

Figure 4 - The sub-national governments (SNG) spending as % of total in selected countries of Latin America and Caribbean (2012)



Source: SNG tax information platform of IDB and questionnaires to experts of the Bank. Year 2012 the most recent available

The conclusion is that there is an inadequate structure of incentives caused by the following issues: Poor coordination between levels of government, Incipient allocation of taxes to SNG, Complex transfers, distorted and limited redistributive capacity, Insufficient development of subnational fiscal responsibility landmarks,

This weak institutional capacities of the SNG lead to Citizen dissatisfaction with municipal services, Low collection of property tax, Limited external loans access, Deficient information on subnational finances.

Therefore, IDB defined goals for the sector: “Promote the development of institutional capacity and the incentive structure for a sub-management more effective and efficient and to help improve the quality of life of citizens”.

Strengthened institutions are needed to achieve those goals. The IDB decided to help SNG along projects with the following actions: intergovernmental mechanisms to improve the management of SNG, Improving the delivery of services to citizens and the quality of

spending, Improving the collection of own resources and the access to financing, Increase the transparency and accountability.

Thus, given that there are few studies on the efficiency of the BNDES and IDB programs for the public sector, this dissertation aims to contribute to the evaluation of the program, complementing the incipient literature on this subject.

4. Municipal Budget in Brazil

This Section explains very briefly the revenue sources that composes the municipal budget in Brazil. The municipalities have some income sources, but in most cases, constitutional transfers account for the largest share of the budget.

a) Tributaries

I. Taxes – Urban Property Tax (IPTU), ITR (Rural Property Tax), Transmition Tax (ITBI) and Taxes over Services (ISS)

II. Fares (on public services)

III. Improvement tax, resulting from public works

b) Contributions

For example, Contribution to fund the public lighting service.

c) Constitutional transfers

The municipality participates in the collection of the following taxes:

I. State - 25% of VAT (ICMS), 50% of Vehicles Property Taxes (IPVA) and 25% of Industrial Property Tax (IPI) that the state receive

II. Union - 50% of the Rural Property Tax (ITR), 22.5% of Income Tax (IR) and 22.5% of Industrial Property Tax (IPI), all through the Municipal Participation Fund (FPM), passed in quotas calculated by the Federal Court of Auditors based on indicators such as population

d) Financial compensation (royalties)

The exploitation of natural resources (oil, natural gas and other liquid hydrocarbons), water resources and mineral resources, including subsoil of the continental shelf and the exclusive economic zone.

e) Equity

The economic exploitation of municipal public property (movable and immovable property) by financial investments, sale of movable and immovable property, rents.

f) Services

With the collection of tariffs on public transportation, markets, fairs, slaughterhouses, cemeteries, etc.

g) Other income

Arising from fines and other administrative penalties (postures code, works and other municipal regulations, monetary restatement and the collection of outstanding debt).

5. BNDES and the PMAT Program

BNDES was founded in 1952, is an independent agency with administrative autonomy, and aims to be the main instrument of execution of state investment policy.

In its creation, the bank was inserted into an economic and social context very different from that today: the economy was predominantly agricultural, the Brazilian population totaled about 52 million inhabitants and the industry was still in its infancy (Paiva, 2013). With the re-election of Getúlio Vargas in 1950, new policies to encourage economic development were adopted, such as the creation of BNDE - to promote the industrialization of the country - and *Petróleo Brasileiro SA* (Petrobras) the following year.

The first sector to receive investments then BNDE was the transportation sector, with investments to renovate the lines of cargo and passengers between Rio de Janeiro, São Paulo and Belo Horizonte, and the expansion of airports. In the 60s, the BNDE supported the creation of the Brazilian Electric Power Company and the Bank began to devote to other sectors, especially the capital goods industry: in this period was the creation of subsidiary Special Agency of Industrial Financing (FINAME), focused on the acquisition of capital goods produced in Brazil. In the 70s, the institution expanded its operations with private companies, mainly to industries linked to the Second National Development Plan (NDP II). Only the next decade the Bank received the "S" to its present name, increasing the range of the institution's performance. Also in this decade in 1985, BNDESPAR subsidiary made the first public offering of shares (Petrobras), a milestone in the bank's operations in the capital

market. In the 90s, BNDES was responsible for the National Privatization Program, is fundamental in the period of privatization

The BNDES strategy was redefined in 2003, the institution became the key tool to stimulate investment. The government wanted to increase investment, to ensure that its growth rate overcome the growth rate of the economy. Therefore, there was an increase of the institution's disbursements for all sectors and the institution became the largest financier of the Growth Acceleration Program (PAC).

Currently, the BNDES is among the world's largest development banks, with assets exceeding R\$ 745 billion and shareholder equity of R\$ 60 billion. In addition to the industry, which has historically been the main customer of the bank, agribusinesses, farmers, small entrepreneurs, non-governmental organizations, municipalities, states and the federal government itself are among the clients of the institution. Among the current objectives of the bank, there is the incentive for investments that promote innovation, environmental sustainability and regional development, in a quest for strengthening the competitiveness of Brazilian companies and the social and productive inclusion.

BNDES has greatly increased its volume of disbursements over the last few years up to 2008, this volume was close to R\$ 50 billion annually, all subsequent periods exceeded R\$ 100 billion, reaching R\$ 190.4 billion in 2013. This recent level jump reflects the change of the institution's strategy, which became the main incentive for investments in the international crisis that year. In fact, the bank has a significant stake in the Brazilian credit market: in 2013, for example, their share in total credit stock was 20.2% on average for the year. The industry and the infrastructure sector are also the sectors that receive funding, each accounting for about 30% of total annual disbursements.

Although the institution has strong focus on private sector, there are also programs designed exclusively for the public sector, which is the object of analysis of this study. Among the lines of financing for this sector, the programs that still exist are:

- Provias: involving the acquisition of machinery and equipment for interventions on public roads, highways and roads
- PMAT BNDES: supporting modernization projects of tax administration
- PROPAE: supporting productive investment and improving the infrastructure of the states

However, for the evaluation proposed here, we will examine the potential effects of BNDES PMAT, since this program has very specific goals and especially measurable with available data. In addition, there are a fair number of municipalities benefited from the program and the volume of disbursed funds is significant.

BNDES PMAT was launched by the Ministry of Planning in 1997, in order to modernize the tax administration and improve public expenditure management, increasing tax revenues and reducing the unit cost of services general administration, health and education. The program operated in a direct way (when funding takes place directly through BNDES) or indirectly (through accredited financial institutions). BNDES PMAT Auto was established in 2010, with the same objectives of BNDES PMAT, but serving only municipalities with a population less than 150,000 inhabitants and granting loans indirectly only.

In 2013, BNDES held a redesign these programs and there are currently three types of operations, all with the goal of modernization of tax administration, and the period of validity of the arrangements was extended for up to March 2018. The characteristics of each type are detailed below.

- "BNDES PMAT Automatic - Investments": has the same initial objectives of BNDES PMAT, namely, to support investment projects of municipal public administration aimed at modernizing tax administration and improve the quality of public spending. To fall within this mode, the transaction value must not exceed R\$ 20 million and the support is indirect;
- "BNDES PMAT Automatic - Machinery and Equipment": supports the purchase of equipment and machinery that are related to investment projects framed in PMAT objectives. In this case, the grant is also indirect and there is no limit to the amount of resources involved;
- "BNDES PMAT Non-Automatic": has the same objectives as the "BNDES PMAT Automatic - Investment", however, covers the projects that exceed R\$ 20 million and is carried out directly or indirectly;

The fundable actions by the methods described above include hiring specialized consulting, training servers for updating the furniture register, real estate and multipurpose, purchase of computers and document control systems, mobile purchases, internet site creation and acquisition equipment for surveillance, among others that are related to the overall objectives. From the hiring, the municipality must deliver periodically, as determined in the

financing contract, a performance report for follow up. In addition, the technical staff of the institution can face anytime verification of investments.

Financing conditions for all modes are quite similar: the financing term is eight years, required guarantees consist of revenues from the Tax on Sales and Services (ICMS) or ICMS - Export and / or by quota-part of the FPM. In addition, the BNDES may finance up to 90% of the total value of the project.

As seen, today the difference between the modes is basically the maximum value of the financed operations. Therefore, from now on, we will refer to these three modes only as PMAT, since all have similar goals and therefore should generate similar effects on public accounts benefited municipalities.

Accumulated in the analyzed period, the PMAT disbursed over R\$ 397 million and the total value of transactions that period exceeded R\$ 573 milhões. The amount disbursed by the program is small when compared to the volume of resources annually released by the institution: in 2002, the year with more resources allocated to PMAT (R\$ 32 million), the Bank disbursed a total of R\$ 38 billion, intended resources mainly for the industry, for electricity and road transport sectors.

From now on in this chapter, we will show in details the PMAT in order to help other municipalities' intersted in the Program. Its goal is the support of the Municipal Public Administration investment projects aimed at modernizing tax administration and improving public spending quality in order to provide municipalities' efficient management, which generate increased revenues and / or reduce the unit cost of services to the community.

It can be applied to all the municipalities in Brazil.

It can fund enterprises investment projects to strengthen managerial capacities, normative, operational and technology of the municipal administration, focusing on the following actions that can be financed:

Figure 5 – Actions financed by PMAT

Administration Area	Actions
General Administration	Human resources management, procurement and purchasing, contract management, protocol and process control, energy management
Tax administration	Storage, administrative and judicial collection, surveillance, economic and tax studies, service center for taxpayers
Financial Management and Property	Budget, financial execution, accounting and public debt, audit and internal control, management and security of assets
Management and Administration of the Departments, Municipal Bodies and Units providing services to the community	Organization and management, information systems and technology

It can also finance the following actions, if linked to one of the four areas presented above:

- planning, organization and management;
- legislation;
- information systems and technology;
- central citizen service;
- entries;
- georeferencing;
- intra- and inter-institutional relations; and
- integration of local information both in intra-municipal sphere and the exchange of information with federal and state agencies.

There are other items that can be funded, if associated with supportable enterprises established in the previous section:

1. Civil works, assembly and installations;
2. New machinery and equipment, including industrial sets and systems produced in Brazil and accredited by BNDES, including:
 - Computer equipment: computers, stabilizers, nobreaks, printers, routers, scanners, hubs, switches, thin clients, multimedia projector, servers, notebooks, radio antennas broadcast, radio base stations;
 - The operation support equipment and inspection: radio communicators, card readers, attendance and personal totems frequency controls;
 - Computer and automation goods which are covered by Law No. 8248 (Information Act) of 23.10.1991, which comply with the Basic Productive Process (PPB) and have national technology in the form of Ordinance MCT No. 950 of 12.12.2006, or that may replace it;
3. Furniture and fixtures;
4. National software, eligible for support under the BNDES Prosoft program - Marketing;
5. Motorcycles and passenger cars, provided exclusively focused on monitoring activities of the tax administration area, in the total amount limited the number of tenured civil servants who are proved to carry the tax function;
6. Investments in technical and managerial training of effective public servants of the city;
7. Specialized technical services; and
8. Information technology services, including customization of software, and creating and updating records and can influence georeferencing, aerial photography and other related expenses.

BNDES may support the working capital associated with projects funded in the above items, but there are some specific conditions for this support. Equipments must have minimum national content of 60%, calculated according to instructions defined by BNDES, or which comply with the Basic Productive Process (PPB).

The Program is very strict with some items that cannot be funded:

- Civil works, assembly facilities and reequipping of schools, health clinics and assistance;
 - Acquisition or lease of real property and improvements;
 - Purchase of used machines and equipment;
 - Maintenance, activities and funding of the Municipal Administration, including with active and inactive personnel;
 - Spending on undergraduate and graduate;

- Expenses expropriation or acquisition of land; and
- Spent on paving and street lighting.

The Deadline of the Program is up to 8 years, including the maximum grace period of 2 years. The deadline can be extended to up to 10 years, including up to 2 years of grace period for municipalities that are part of the priority municipalities list. This list is updated annually, based on the following criteria: (i) the population over 80 thousand inhabitants; (ii) low index current income per capita; and (iii) high economic vulnerability.

The Bank exiges some guarantees that are the quota-part of the Municipal Participation Fund (FPM) and / or revenues from the GST or GST-Export.

There are some additional considerations:

The applicant municipality shall submit Modernization Project, which will identify, analyze in detail and follow the set of actions and physical and financial targets through which it wants to achieve a higher level of efficiency in its collection or effective reduction of the unit cost of the public sector, or the provision of basic social services.

Along with the application for funding, the municipality shall send the accredited financial institution or BNDES, as appropriate, the table of results expected for the actions of the project as a model provided by BNDES.

The municipality must submit, together with the resource release request, information regarding the bidding procedures and administrative agreements relating to investment that are the subject of the request for release.

Within 120 days from the release of the last installment, the municipality must send the accredited financial institution or BNDES, as applicable, the final performance report, proving the application of all resources released with discrimination in large items.

The municipality should provide the Special Working Group on Modernization of Public Management, which shall have at least 40% effective municipal civil servants among its members, to coordinate the preparation, implementation and monitoring of the entire project.

The municipality must submit municipal decree published, formalizing the establishment of the Special Working Group on Modernization of Public Management (NEMAT), responsible for coordinating the development and implementation of the entire project.

If the project involves funding for the purchase of motorcycles and / or passenger cars aimed to support surveillance activities, the municipality must submit when requesting financing, a statement signed by the mayor on the number of tax inspectors.

Each municipality can apply for funding directly to the BNDES or through a financial institution accredited to the Bank.

In an indirect way, the municipality must submit its request to the accredited financial institution of its choice, which will inform the necessary documentation, examine the possibility of extending credit and negotiate the guarantees. The proposal must be made according to the Roadmap for Indirect Operation Proposal Preparation of Non Automatic, available at the site of BNDES in the internet.

In the case of direct application, it must be done in the form of Prior Consultation, according to the instructions provided and must send them sent to the Planning Area of the Bank.

The Bank, according to these instructions, will monitor the whole Project:

- For project monitoring the municipality should periodically draw up project monitoring report, the model will be provided by accredited financial institution (in the case of indirect support) or BNDES (in the case of direct support);
- The accredited financial institution and the BNDES carry out periodic visits monitoring techniques and evaluation of projects carried out in the direct and indirect mode, for all the supported municipalities with a view to achieving the goals and objectives of the project, as well as to foster exchange of experiences and dissemination of successful initiatives. Municipalities that contracted operations directly with BNDES have the ability to print reports and search for information related to the collection through the BNDES portal. Municipalities that contract operations through accredited financial institutions must address these intermediaries to obtain such information.

6. IDB and the PNAFM Program

The IDB Group, composed of the Inter-American Development Bank (IDB), the Inter-American Investment Corporation (IIC) and the Multilateral Investment Fund (MIF) offers flexible financing solutions to its member countries to finance economic and social development through lending and grants to public and private entities in Latin America and the Caribbean. The IDB is the leading source of sovereign and non-sovereign guaranteed financing for social and economic development in the region. The IIC focuses exclusively on

the establishment, expansion, and modernization of SMEs (small and medium-sized private enterprises). The MIF works with the private sector to develop, finance, and execute innovative business models that benefit entrepreneurs and poor and low-income households

The IDB Group's financial products include loans, grants, guarantees and equity investments (the latter available from the IIC and MIF). The Bank also provides financing for national and regional technical cooperation programs in areas ranging from institutional strengthening to transfer of knowledge.

The Bank's lending and its grants to member countries are funded from four sources: member countries' subscriptions and contributions, borrowings from capital markets, equity accumulated since the Bank's inception, and co-financing ventures. These resources are available to borrowers via the Bank's Ordinary Capital (OC), the Fund for Special Operations (FSO), the IDB Grant Facility (GRF), the Intermediary Financing Facility (IFF) and various trust funds, established by individual countries or groups of countries.

Most IDB projects and technical cooperation programs are financed through loans, either at market rates or using concessional resources. Loans may be extended with:

- Public Sector - Sovereign Guaranteed Loans:

The IDB offers financing for governments and government-controlled institutions to support development and social projects.

- Private Sector - Non- Sovereign Guaranteed Loans:

The IDB offers financing for private sector projects that contribute to development.

Brazil is one of the founding member countries of the IDB. Like all the shareholders, Brazil appoints a Governor, who represents the country on the Board of Governors. For day-to-day business at the Bank's Headquarters in Washington, D.C., Brazil is represented by a chair on the Board of Executive Directors. The chair, shared with Suriname, is headed by an Executive Director, who is elected to a three-year term by the Governors of Brazil and Suriname.

The Bank works with the three levels of government, focusing on subnational agencies in particular. Issues such as regional cooperation and integration, respect for biodiversity, and efforts to reduce regional economic inequalities, with greater emphasis on the Northeast and North, provide a crosscutting orientation to the Bank's action in Brazil. The strategy's respect

for diversity in Bank-financed operations and activities, taking gender and racial factors into account, is one of its key guiding criteria.

The National Program to Support the Administrative and Fiscal Management of Brazilian Municipalities - PNAFM - is part of the Federal Government's strategy for the consolidation and improvement of the constitutional federative pact, seeking institutional strengthening of the agencies responsible for the administrative and fiscal management of Brazilian municipalities.

The executing agency for the program is the Executive Secretariat of the Ministry of Finance, through the Program Coordination Unit - UCP, which is responsible for managing its implementation in a decentralized manner, with the support of Caixa Econômica Federal, financial agent and co-executor of Program.

The General Objectives of the Program are described below:

- Increased municipal collection capacity, with a higher share of own revenues in the budget;
- Adoption of best management practices in order to increase the efficiency, effectiveness and administrative effectiveness;
- Increased transparency in management, with the regular publication of budget and administrative acts, and with greater citizen participation in government decisions;
- Promotion of fair taxation, with emphasis on economic and social equity;
- Improvement of public services, including, and especially, those related to tax collection and service of better quality of citizens.

Each acquisition must be classified according the following Resource Types:

- Consulting;
- Training;
- equipment , information and communication technology systems;
- furniture, materials and operational support equipment;
- Technical services that do not constitute Consulting;
- Infrastructure.

The amount of the Financing for PNAFM is as follows, according to the population and the desire of each municipality:

Figure 6 – Amount financed by PNAFM

Group	Population (IBGE base counting 2012)	Maximum Values (R\$)
1	until 10.000	900.000,00
2	from 10.001 to 30.000	1.250.000,00
3	from 30.001 to 50.000	1.750.000,00
4	from 50.001 to 70.000	2.450.000,00
5	from 70.001 to 90.000	3.400.000,00
6	from 90.001 to 150.000	4.750.000,00
7	from 150.001 to 250.000	6.600.000,00
8	from 250.001 to 400.000	9.200.000,00
9	from 400.001 to 550.000	12.900.000,00
10	from 550.001 to 700.000	18.000.000,00
11	from 700.001 to 1.500.000	25.000.000,00
12	from 1.500.001 to 3.000.000	35.000.000,00
13	over 3.000.001	49.000.000,00

The National Program to Support the Administrative and Fiscal Management of Brazilian Municipalities - PNAFM is preparing to launch the Third Phase of the Program.

In its programmatic structure, PNAFM is divided into thematic areas, called Components and their Subcomponents:

Component 1 - Coordination and Assistance National Technical - It aims to support actions related to integration, cooperation and evaluation at the national level.

Component 2 - Municipal Institutional Strengthening - It aims to support modernization projects of administrative, fiscal, financial and balance of Brazilian municipalities.

For the development of coordination of actions and technical assistance at the national level for the Component 1 National Technical Coordination and Assistance, part of the following subcomponents:

- Technical assistance to municipalities and supervision of projects.

This subcomponent will finance the preparation of actions, execution and supervision of institutional strengthening projects of municipal public administration, as defined in the methodology and Development System, Execution and Project Monitoring (SEEMP), adopted by the CPU / COOPE / MF.

- Cooperation and integration between the tax authorities.

This subcomponent will finance activities in the areas of:

- (i) integration of UCP and UEM with other national and international technical forums to search for innovations;
- (ii) Technical studies for systematization and dissemination of knowledge and best practices in municipal management;
- (iii) Strengthening Network Manager PNAFM Committee (COGEP);
- (iv) Implementation of Management Territorial Information Integrated Network through supporting the development of the National System of Territorial Information Management (SINTER); and
- (v) Implementation of International Standards of Accounting Applied to the Public Sector (NBCASP).

To achieve the goals set for the PNAFM, the actions of municipal institutional strengthening for the Component 2 - Municipal Institutional Strengthening, will be structured in the following subcomponents:

1. Fiscal Integrated with shares in the following segments:

1.1 Institutional Improvement - institutional development for modernization of the planning system with social participation, the municipal structure, the municipal legislation and planning processes and implementation of results to management model, with indicators for qualification of public services.

Key areas to be the object of intervention: Municipal Reorganization, Participatory Budgeting, Administrative Center, Municipal Restructuring, Managing for Results, Process Mapping, Municipal Law, Quality of Public Services Management Indicators.

1.2 Modernization of Land Management - for implementation of methodologies and tools for social and economic urban planning, urban studies and the preparation and / or review of the master plan.

Key areas to be the object of intervention: Plan, Urban Planning, Land Management,

Urban Studies, Urban Planning Law.

1.3 Inter-institutional cooperation - national and international inter-institutional cooperation for the implementation of exchange and learning networks.

Key areas to be the object of intervention: Exchange Networks, Learning Network, International Collaborations.

1.4 Improving Transparency and communication mechanisms with the Company - Improvement of transparency and communication mechanisms with society for modernization and continuous improvement of service and virtual citizens and strengthening the portals of transparency and tax education programs.

Key areas to be the object of intervention: Call Center, Transparency Portal, Tax Education, Citizen Portal, Municipal Portal, Fiscal Action.

1.5 Improvement of Human Resource Management - to modernize the management, definition and implementation of personnel policies and social security, training centers and implementation of ongoing training programs and performance evaluation.

Key areas to be the object of intervention: Training, Career Planning, Training Center, HR Management, Career and Salary Plan, Payroll, School of Government, Performance Evaluation, Municipal Security.

1.6 Enhancement of Information and Communication Technology Services - Improving the management of information technology and communication services, upgrade technology park, internal networks and long distance and operating systems and software, electronic document management, digital certification, security and auditing systems and services.

Key areas to be the object of intervention: Technological Park, GED, Networking, System Integration and Management, Infovias, Digital City, Datacenter, Digital Inclusion.

2. Tax Administration and Tax Litigation, with actions in the following segments:

2.1 Improving Efficiency and Effectiveness of Tax Administration - for the achievement of economic and tax studies, urban and rural values plant upgrade, management modernization and automation of storage processes, administrative collection, enforcement, intelligence and administrative litigation.

Key areas to be the object of intervention: Values Generic plant, storage systems, Inspection, Administrative Charge, Tax Intelligence, Administrative Litigation, Tax Benefits, Taxes Generation, Tax Revenue.

2.2 Improving Taxpayers' Registry Management - records management improvement taxpayers and implementation of the public system of digital bookkeeping to support the integration of tax authorities.

Key areas to be the object of intervention: SPED, integration of tax authorities, REDESIM, Integrated Registration with External Databases.

2.3 Integrated Management to Space Control - for the implementation of geoprocessing actions, including GIS, aerial photogrammetry, cartography and other actions, and databases referenced with the management of their records.

Key areas to be the object of intervention: GIS, Cadastre, Bank Municipal Data, Multipurpose cadastre, GIS, Municipal Monitoring, Mapping, property tax - ISS - ITR, Aerial Photography, Property Re-registration.

2.4 Improving Efficiency and Effectiveness of Administration of Tax Litigation - for modernization of management and automation of the processes of the outstanding debt, the judicial collection, judicial and extrajudicial representation and control of debtors.

Key areas to be the object of intervention: Overdue, Judicial Collection, Tax Attorney, Law Library, Control of Debtors.

3. Budget Management, Financial, Accounting, Asset Control and Fiscal Management, with actions in the following segments:

3.1 Improving Efficiency and Effectiveness of Budget and Financial Management - to modernize the management and automation of the process of budgeting, programming, financial execution, planning, treasury, cash flow, social control of public spending, cost systems and debt management public.

Key areas to be the object of intervention: Municipal Budget, Participative Budget, Financial Systems, Financial Programming, Public Debt, Municipal Planning, costs, Deposits and Guarantees, Cash Flow, Cash.

3.2 Improving the Efficiency and Effectiveness of Accounting Management - Improving the efficiency and effectiveness of accounting administration for implementation of International Standards of Accounting Applied to the Public Sector (NBCASP).

Key areas to be the object of intervention: Accounting, PCASP.

3.3 Improving Efficiency and Material Management Effectiveness and Equity - Improving the efficiency and effectiveness of management logistics material, heritage, fleet, protocol, warehouse and related areas for modernization of management and automation of movable and immovable property control processes, contracts and agreements.

Key areas to be the object of intervention: Logistics, Assets, Administrative Management, Covenants, Archive, Order, Protocol, Fleet, Warehouse.

3.4 Improvement of Control Mechanisms and Eyre Fiscal Management - Improvement of mechanisms of control and correction of fiscal management to modernize the management and automation of administrative, disciplinary and control of operational risk, audit, controllership, results evaluation, ethics and discipline.

Key areas to be the object of intervention: Audit, Ombudsman, Code of Ethics, Internal Affairs, Administrative Proceedings, Municipal Comptroller, investigations, internal regulations.

4. Management, Project Monitoring and Evaluation - providing the implementation of the Executive Municipal Unit (UEM) and management, monitoring and evaluation of projects of administrative modernization, tributary and tax.

Key areas to be the object of intervention: UEM Management, Project Monitoring, Technical Visits, COGEP Network Project Office.

7. Data Analyses and Results Achieved

In order to make the analysis, I chose 5 big cities in Brazil that got loans from PMAT and/or PNAFM and that I had enough data to make the analysis. The analyses focused on the evolution of the IPTU (property tax) and ISS (services tax), two of the more significant collection of the cities in Brazil.

Figure 7 - 2015 Annual Revenue of the 50 largest cities in Brazil

SEQ	MUNICÍPIO	UF	POP	REC ORÇAMENTÁRIA	SEQ	MUNICÍPIO	UF	POP	REC ORÇAMENTÁRIA
1ª	São Paulo	SP	11.895.893	43.356.091.434,34	26ª	Osasco	SP	693.271	1.937.215.782,38
2ª	Rio de Janeiro	RJ	6.453.682	24.653.270.430,62	27ª	Natal	RN	862.044	2.130.989.686,64
3ª	Belo Horizonte	MG	2.491.109	9.316.223.572,14	28ª	Maceió	AL	1.005.319	1.949.037.217,17
4ª	Curitiba	PR	1.864.416	6.962.142.691,27	29ª	Niterói	RJ	495.470	1.876.729.113,54
5ª	Salvador	BA	2.902.927	5.345.810.690,93	30ª	Joinville	SC	554.601	1.836.131.627,36
6ª	Porto Alegre	RS	1.472.482	5.778.780.911,72	31ª	Uberlândia	MG	654.681	1.725.802.816,47
7ª	Fortaleza	CE	2.571.896	5.659.812.008,94	32ª	Jundiaí	SP	397.965	1.712.092.845,71
8ª	Recife	PE	1.608.488	4.397.696.217,38	33ª	Vitória	ES	352.104	1.714.320.002,84
9ª	Manaus	AM	2.020.301	4.262.280.164,45	34ª	Betim	MG	412.003	1.608.030.220,65
10ª	Campinas	SP	1.154.617	4.080.316.526,93	35ª	Caxias do Sul	RS	470.223	1.684.660.552,79
11ª	Guarulhos	SP	1.312.197	3.563.342.904,39	36ª	Aracaju	SE	623.766	1.683.461.355,36
12ª	Goiânia	GO	1.412.364	3.810.052.319,94	37ª	Contagem	MG	643.476	1.446.457.083,48
13ª	São Bernardo do Campo	SP	811.489	3.743.517.359,69	38ª	Londrina	PR	543.003	1.455.984.720,45
14ª	Campo Grande	MS	843.120	2.729.723.698,25	39ª	Florianópolis	SC	461.524	1.388.574.367,62
15ª	Campos dos Goytacazes	RJ	480.648	2.864.814.100,57	40ª	Piracicaba	SP	388.412	1.348.327.197,78
16ª	Belém	PA	1.432.844	2.714.735.918,00	41ª	São José do Rio Preto	SP	438.354	1.364.184.258,92
17ª	São José dos Campos	SP	681.036	2.471.372.631,23	42ª	Juiz de Fora	MG	550.710	1.318.066.203,15
18ª	São Luís	MA	1.064.197	2.402.322.504,07	43ª	Canoas	RS	339.979	1.356.863.041,04
19ª	Sorocaba	SP	637.187	2.417.193.825,93	44ª	São Caetano do Sul	SP	157.205	1.168.419.440,32
20ª	Barueri	SP	259.555	2.194.148.162,46	45ª	Parauapebas	PA	183.352	1.159.388.942,01
21ª	Teresina	PI	840.600	2.211.022.325,38	46ª	Blumenau	SC	334.002	1.216.840.352,96
22ª	Santo André	SP	707.613	2.169.285.728,43	47ª	Nova Iguaçu	RJ	806.177	1.203.565.697,32
23ª	Ribeirão Preto	SP	658.059	2.192.695.467,73	48ª	Porto Velho	RO	494.013	1.172.070.232,72
24ª	Santos	SP	433.565	2.294.849.799,46	49ª	Maringá	PR	391.698	1.130.720.266,06
25ª	João Pessoa	PB	780.738	1.935.887.676,56	50ª	Praia Grande	SP	293.695	1.116.688.794,57

Source: Brazilian Treasure site in the internet - <https://siconfi.tesouro.gov.br>

Figure 8 - 25 highest cities 2015 IPTU Collection in Brazil

SEO	MUNICÍPIO	UF	POP	REC ORÇAMENTÁRIA	IPTU
1º	São Paulo	SP	11.895.893	43.356.091.434,34	5.963.748.376,61
2º	Rio de Janeiro	RJ	6.453.682	24.653.270.430,62	2.002.164.889,57
3º	Belo Horizonte	MG	2.491.109	9.316.223.572,14	816.190.233,87
4º	Salvador	BA	2.902.927	5.345.810.690,93	474.711.421,42
5º	Campinas	SP	1.154.617	4.080.316.526,93	421.030.993,34
6º	Curitiba	PR	1.864.416	6.962.142.691,27	418.396.647,10
7º	Porto Alegre	RS	1.472.482	5.778.780.911,72	337.744.506,44
8º	Guarulhos	SP	1.312.197	3.563.342.904,39	331.510.282,49
9º	Goiânia	GO	1.412.364	3.810.052.319,94	320.150.917,50
10º	Fortaleza	CE	2.571.896	5.659.812.008,98	308.833.435,65
11º	Santos	SP	433.565	2.294.849.799,46	306.320.809,48
12º	Campo Grande	MS	843.120	2.729.723.698,29	287.392.976,99
13º	Recife	PE	1.608.488	4.397.696.217,38	287.183.092,88
14º	São Bernardo do Campo	SP	811.489	3.743.517.359,69	281.721.220,91
15º	Guarujá	SP	308.989	1.096.989.226,87	261.204.203,73
16º	Niterói	RJ	495.470	1.876.729.113,54	232.783.998,57
17º	Praia Grande	SP	293.695	1.116.688.794,57	225.514.011,04
18º	Ribeirão Preto	SP	658.059	2.192.695.467,73	220.961.386,46
19º	Santo André	SP	707.613	2.169.285.728,43	206.129.515,34
20º	Osasco	SP	693.271	1.937.215.782,38	205.294.338,80
21º	São José dos Campos	SP	681.036	2.471.372.631,23	147.379.788,72
22º	Florianópolis	SC	461.524	1.388.574.367,62	146.189.414,61
23º	São José do Rio Preto	SP	438.354	1.364.184.258,92	128.490.919,22
24º	Manaus	AM	2.020.301	4.262.280.164,45	126.965.058,42
25º	Londrina	PR	543.003	1.455.984.720,45	122.314.869,40

Source: Brazilian Treasure site in the internet - <https://siconfi.tesouro.gov.br>

Figure 9 - 25 highest cities 2015 ISS Collection in Brazil

SEQ	MUNICÍPIO	UF	POP	REC ORÇAMENTÁRIA	ISSQN
1º	São Paulo	SP	11.895.893	43.356.091.434,34	11.379.496.977,91
2º	Rio de Janeiro	RJ	6.453.682	24.653.270.430,62	5.346.724.390,71
3º	Belo Horizonte	MG	2.491.109	9.316.223.572,14	1.124.510.415,02
4º	Curitiba	PR	1.864.416	6.962.142.691,27	983.389.943,90
5º	Salvador	BA	2.902.927	5.345.810.690,93	874.325.346,18
6º	Porto Alegre	RS	1.472.482	5.778.780.911,72	748.070.977,21
7º	Barueri	SP	259.555	2.194.148.162,46	714.590.266,79
8º	Recife	PE	1.608.488	4.397.696.217,38	710.661.464,19
9º	Campinas	SP	1.154.617	4.080.316.526,93	696.252.460,86
10º	Fortaleza	CE	2.571.896	5.659.812.008,98	606.568.759,29
11º	Manaus	AM	2.020.301	4.262.280.164,45	575.511.967,36
12º	Goiânia	GO	1.412.364	3.810.052.319,94	518.498.332,48
13º	Santos	SP	433.565	2.294.849.799,46	406.712.866,26
14º	São Luís	MA	1.064.197	2.402.322.504,07	403.763.828,78
15º	Guarulhos	SP	1.312.197	3.563.342.904,39	364.926.033,68
16º	Vitória	ES	352.104	1.714.320.002,84	364.251.804,68
17º	Osasco	SP	693.271	1.937.215.782,38	357.615.730,17
18º	Belém	PA	1.432.844	2.714.735.918,00	324.513.265,00
19º	São Bernardo do Campo	SP	811.489	3.743.517.359,69	310.935.415,75
20º	Sorocaba	SP	637.187	2.417.193.825,93	288.882.863,21
21º	Niterói	RJ	495.470	1.876.729.113,54	279.864.677,29
22º	Campo Grande	MS	843.120	2.729.723.698,29	271.560.157,15
23º	Natal	RN	862.044	2.130.989.686,64	255.736.136,99
24º	Santo André	SP	707.613	2.169.285.728,43	252.571.525,34
25º	Itaboraí	RJ	227.168	706.849.824,65	248.848.286,89

Source: Brazilian Treasure site in the internet - <https://siconfi.tesouro.gov.br>

The graphs of the evolution of the collection between 2009 and 2015 for each one of the cities is presented below. The year that the loan was taken is in a different color:

All the information were got from the Brazilian Treasure site in the internet - <https://siconfi.tesouro.gov.br> , values in Brazilian reais.

I used the IPCA index to bring the values to 2015, according to following table:

Figure 10 - IPCA Index

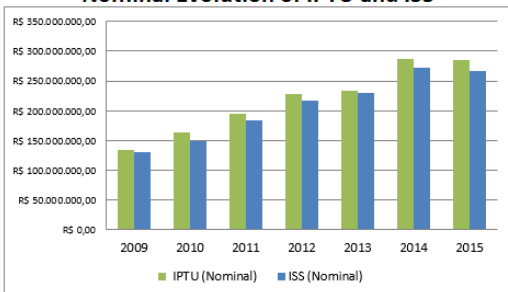
Year	IPCA	Cumulative IPCA
2009	1,0431	1,0000
2010	1,0591	1,0591
2011	1,0650	1,1280
2012	1,0583	1,1937
2013	1,0591	1,2643
2014	1,0641	1,3453
2015	1,1067	1,4889

Figure 11 - Campo Grande Data

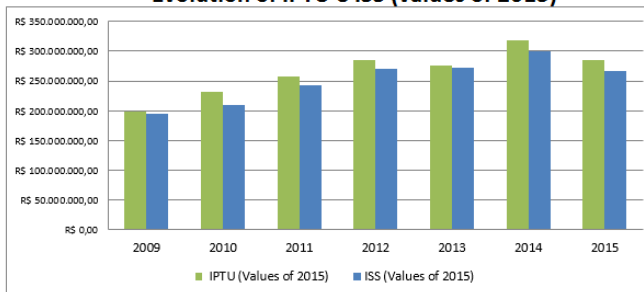
City:	CAMPO GRANDE					
Year	IPTU (Nominal)	IPTU (Values of 2015)	Surplus - IPTU	ISS (Nominal)	ISS (Values of 2015)	Surplus - ISS
2009	133.331.732,43	198.512.140,8284		130.943.828,52	194.956.888,7618	
2010	164.288.972,15	230.955.769,4458	32.443.628,62	149.511.833,36	210.182.217,7291	15.225.328,9673
2011	195.294.618,31	257.779.509,5093	59.267.368,68	183.215.748,36	241.835.981,7353	46.879.092,9736
2012	228.642.673,61	285.171.822,4144	86.659.681,59	217.145.085,34	270.831.593,8448	75.874.705,0830
2013	233.732.198,66	275.252.262,5519	76.740.121,72	230.448.703,92	271.385.489,5465	76.428.600,7848
2014	287.392.976,99	318.057.807,6348	119.545.666,81	271.560.157,15	300.535.625,9179	105.578.737,1561
2015	285.479.849,22	285.479.849,2200	86.967.708,39	266.217.335,05	266.217.335,0500	71.260.446,2882
		Cumulative Total	461.624.175,81		Cumulative Total	391.246.911,2531

	Collection				
Year	IPTU (Values of 2015)	ISS (Values of 2015)	Total IPTU and ISS		Surplus - Collection related to 2011
2009	198.512.140,83	194.956.888,76	393.469.029,59		
2010	230.955.769,45	210.182.217,73	441.137.987,17		
2011	257.779.509,51	241.835.981,74	499.615.491,24	Project Value	-27.777.777,78
2012	285.171.822,41	270.831.593,84	556.003.416,26		56.387.925,01
2013	275.252.262,55	271.385.489,55	546.637.752,10		47.022.260,85
2014	318.057.807,63	300.535.625,92	618.593.433,55		118.977.942,31
2015	285.479.849,22	266.217.335,05	551.697.184,27		52.081.693,03
				Cumulative Total	246.692.043,42

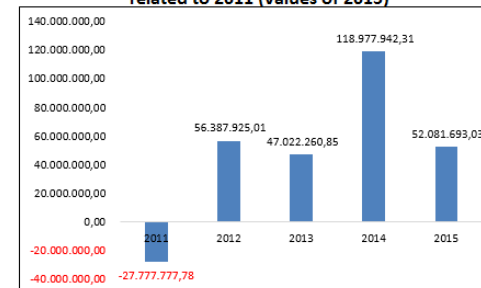
Nominal Evolution of IPTU and ISS



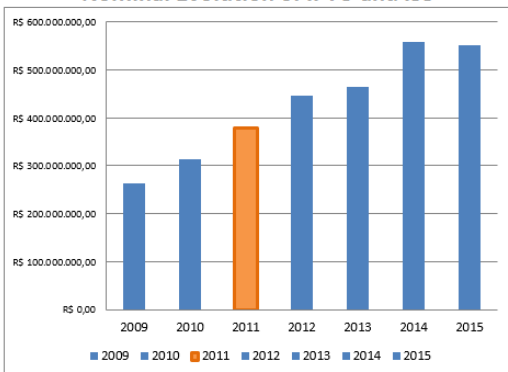
Evolution of IPTU e ISS (values of 2015)



Project Value and Collection Surplus of IPTU and ISS related to 2011 (values of 2015)



Nominal Evolution of IPTU and ISS



Evolution of IPTU and ISS (values of 2015)

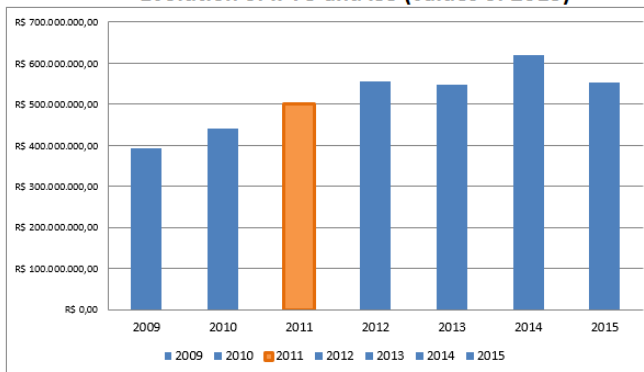
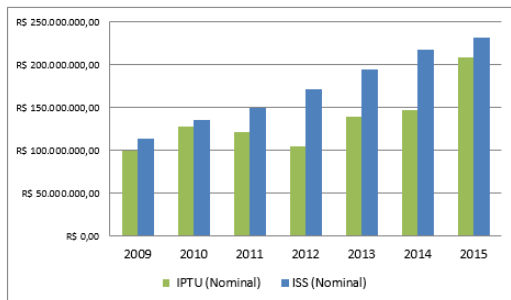


Figure 12 - Florianópolis Data

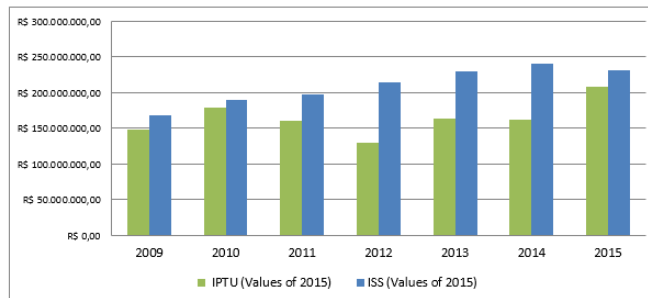
City:	FLORIANÓPOLIS					
Year	IPTU (Nominal)	IPTU (Values of 2015)	Surplus - IPTU	ISS (Nominal)	ISS (Values of 2015)	Surplus - ISS
2009	99.945.645,72	148.804.967,4054		113.242.704,55	168.602.412,2218	
2010	127.387.102,76	179.079.496,0270	30.274.528,62	134.745.806,16	189.424.286,5727	20.821.874,3509
2011	121.671.919,38	160.601.085,5304	11.796.118,13	149.364.774,77	197.154.323,6131	28.551.911,3912
2012	104.196.205,00	129.957.462,4429	- 18.847.504,96	171.522.934,53	213.929.915,4156	45.327.503,1937
2013	138.990.823,91	163.681.080,2042	14.876.112,80	194.508.119,05	229.060.438,2287	60.458.026,0069
2014	146.189.414,61	161.787.825,1489	12.982.857,74	217.024.715,88	240.181.253,0644	71.578.840,8426
2015	208.530.114,44	208.530.114,4400	59.725.147,03	231.075.953,08	231.075.953,0800	62.473.540,8582
		Cumulative Total	110.807.259,36		Cumulative Total	289.211.696,6435

Year	Collection			Surplus - Collection related to 2011
	IPTU (Values of 2015)	ISS (Values of 2015)	Total IPTU and ISS	
2009	148.804.967,41	168.602.412,22	317.407.379,63	
2010	179.079.496,03	189.424.286,57	368.503.782,60	
2011	160.601.085,53	197.154.323,61	357.755.409,14	Project Value -10.222.222,00
2012	129.957.462,44	213.929.915,42	343.887.377,86	- 13.868.031,29
2013	163.681.080,20	229.060.438,23	392.741.518,43	34.986.109,29
2014	161.787.825,15	240.181.253,06	401.969.078,21	44.213.669,07
2015	208.530.114,44	231.075.953,08	439.606.067,52	81.850.658,38
			Cumulative Total	136.960.183,45

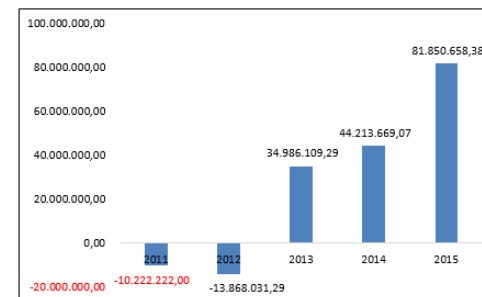
Nominal Evolution of IPTU and ISS



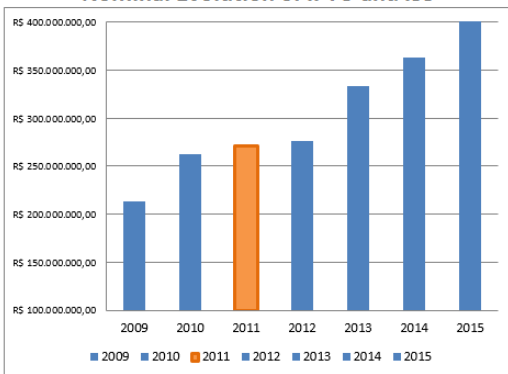
Evolution of IPTU e ISS (values of 2015)



Project Value and Collection Surplus of IPTU and ISS related to 2011 (values of 2015)



Nominal Evolution of IPTU and ISS



Evolution of IPTU and ISS (values of 2015)

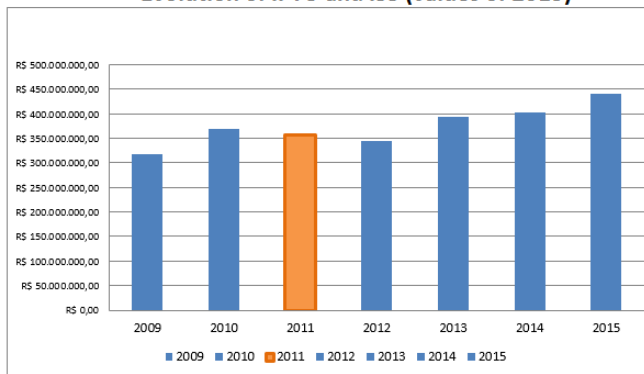
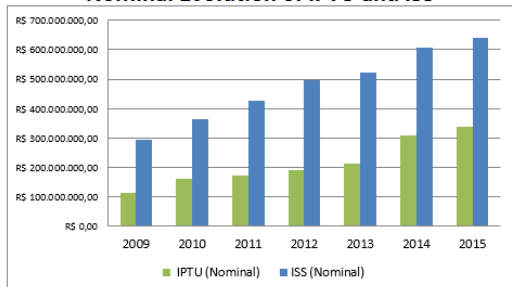


Figure 13 - Fortaleza Data

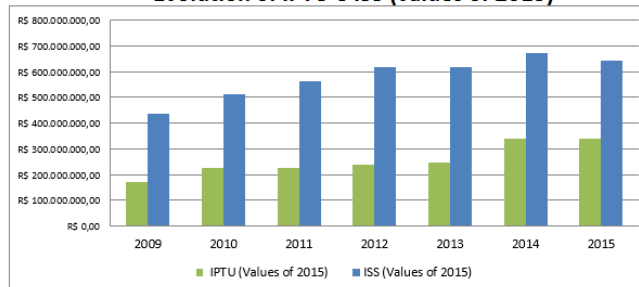
City:	FORTALEZA					
Year	IPTU (Nominal)	IPTU (Values of 2015)	Surplus - IPTU	ISS (Nominal)	ISS (Values of 2015)	Surplus - ISS
2009	114.115.675,26	169.902.142,4613		294.521.301,00	438.500.669,8369	
2010	159.734.233,98	224.552.764,7590	54.650.622,30	363.778.383,55	511.395.959,0900	72.895.289,2531
2011	172.071.713,87	227.126.391,8365	57.224.249,38	427.468.338,07	564.237.660,3719	125.736.990,5350
2012	191.284.814,42	238.577.682,2282	68.675.539,77	495.746.951,66	618.314.417,9918	179.813.748,1549
2013	211.496.816,47	249.066.998,8544	79.164.856,39	523.604.502,35	616.617.328,6371	178.116.658,8002
2014	308.833.435,65	341.785.963,2339	171.883.820,77	606.568.759,29	671.289.645,9062	232.788.976,0694
2015	339.444.876,91	339.444.876,9100	169.542.734,45	641.511.623,07	641.511.623,0700	203.010.953,2331
		Cumulative Total	601.141.823,05		Cumulative Total	992.362.616,0456

Year	Collection			Surplus - Collection related to 2010
	IPTU (Values of 2015)	ISS (Values of 2015)	Total IPTU and ISS	
2009	169.902.142,46	438.500.669,84	608.402.812,30	
2010	224.552.764,76	511.395.959,09	735.948.723,85	Project Value
2011	227.126.391,84	564.237.660,37	791.364.052,21	55.415.328,36
2012	238.577.682,23	618.314.417,99	856.892.100,22	120.943.376,37
2013	249.066.998,85	616.617.328,64	865.684.327,49	129.735.603,64
2014	341.785.963,23	671.289.645,91	1.013.075.609,14	277.126.885,29
2015	339.444.876,91	641.511.623,07	980.956.499,98	245.007.776,13
			Cumulative Total	789.340.080,80

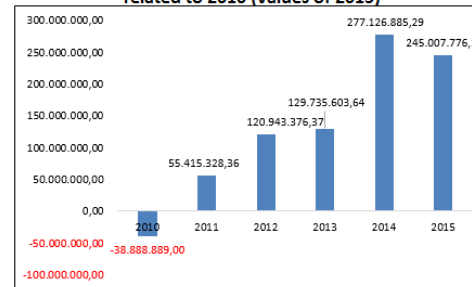
Nominal Evolution of IPTU and ISS



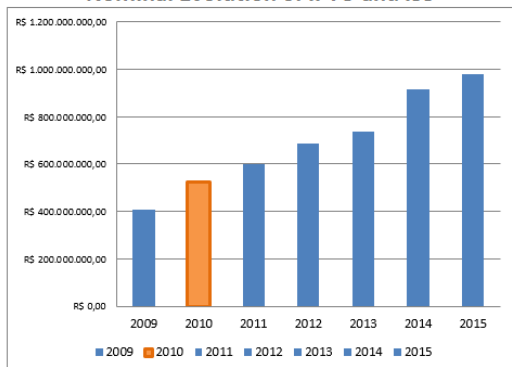
Evolution of IPTU e ISS (values of 2015)



Project Value and Collection Surplus of IPTU and ISS related to 2010 (values of 2015)



Nominal Evolution of IPTU and ISS



Evolution of IPTU and ISS (values of 2015)

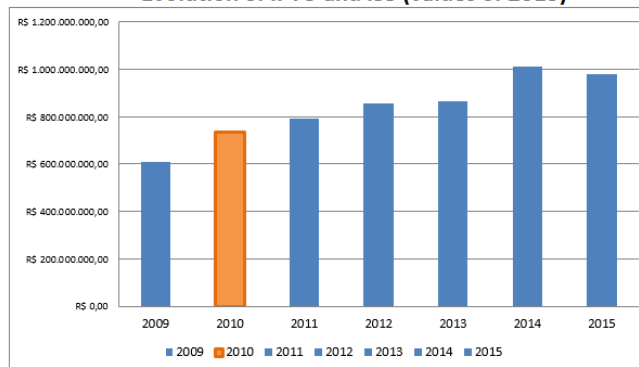
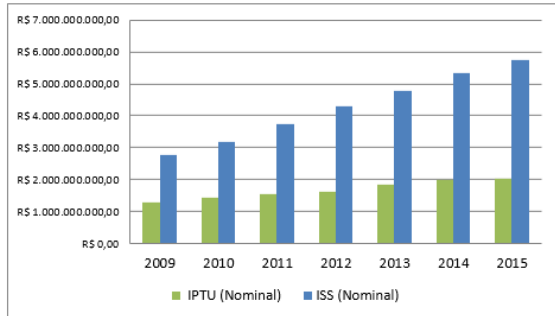


Figure 14 - Rio de Janeiro Data

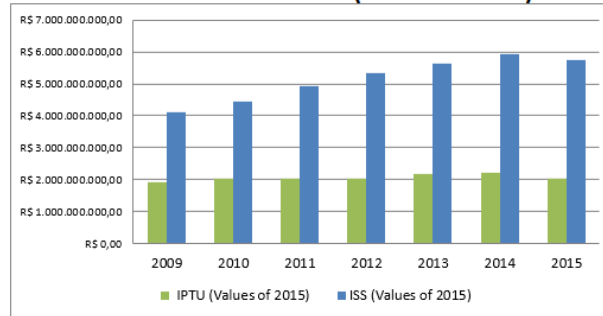
City:	RIO DE JANEIRO					
Year	IPTU (Nominal)	IPTU (Values of 2015)	Surplus - IPTU	ISS (Nominal)	ISS (Values of 2015)	Surplus - ISS
2009	1.277.320.074,39	1.901.749.402,5538		2.767.111.744,93	4.119.839.038,9608	
2010	1.431.848.091,24	2.012.877.512,8008	111.128.110,25	3.166.204.901,19	4.451.018.711,7726	331.179.672,8118
2011	1.526.766.704,73	2.015.258.667,5777	113.509.265,02	3.722.608.357,31	4.913.664.107,8328	793.825.068,8720
2012	1.624.933.536,87	2.026.678.794,0113	124.929.391,46	4.283.897.640,54	5.343.039.765,5039	1.223.200.726,5431
2013	1.839.757.750,85	2.166.571.342,6394	264.821.940,09	4.795.570.652,54	5.647.453.281,6048	1.527.614.242,6439
2014	2.002.164.889,57	2.215.795.883,2871	314.046.480,73	5.346.724.390,71	5.917.219.883,1988	1.797.380.844,2379
2015	2.031.664.222,02	2.031.664.222,0200	129.914.819,47	5.727.346.158,55	5.727.346.158,5500	1.607.507.119,5892
		Cumulative Total	1.058.350.007,01		Cumulative Total	7.280.707.674,6979

	Collection				
Year	IPTU (Values of 2015)	ISS (Values of 2015)	Total IPTU and ISS		Surplus - Collection related to 2011
2009	1.901.749.402,55	4.119.839.038,96	6.021.588.441,51		
2010	2.012.877.512,80	4.451.018.711,77	6.463.896.224,57		
2011	2.015.258.667,58	4.913.664.107,83	6.928.922.775,41	Project Value	-54.434.318,00
2012	2.026.678.794,01	5.343.039.765,50	7.369.718.559,52		440.795.784,10
2013	2.166.571.342,64	5.647.453.281,60	7.814.024.624,24		885.101.848,83
2014	2.215.795.883,29	5.917.219.883,20	8.133.015.766,49		1.204.092.991,08
2015	2.031.664.222,02	5.727.346.158,55	7.759.010.380,57		830.087.605,16
				Cumulative Total	3.305.643.911,17

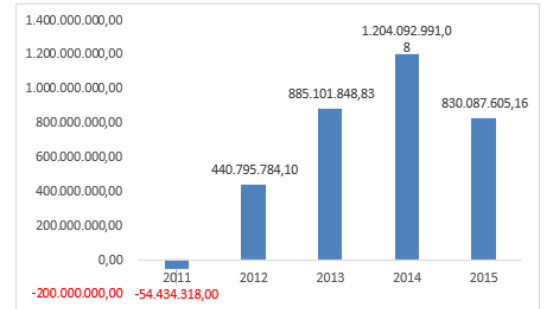
Nominal Evolution of IPTU and ISS



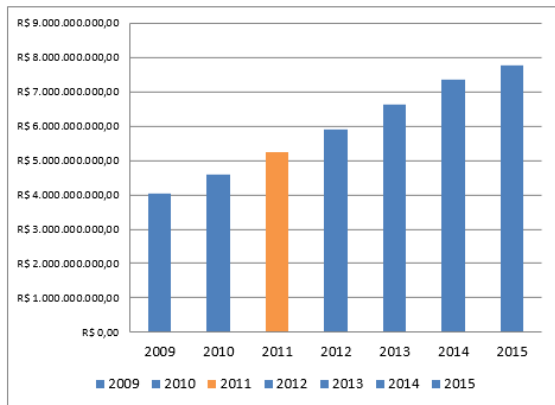
Evolution of IPTU e ISS (values of 2015)



Project Value and Collection Surplus of IPTU and ISS related to 2011 (values of 2015)



Nominal Evolution of IPTU and ISS



Evolution of IPTU and ISS (values of 2015)

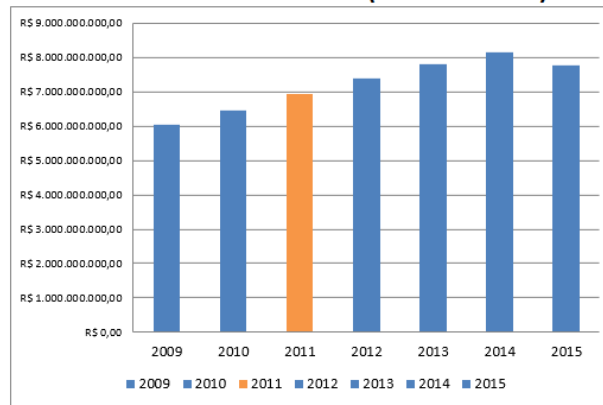
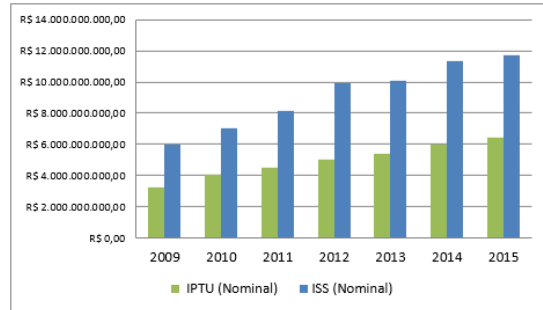


Figure 15 - São Paulo Data

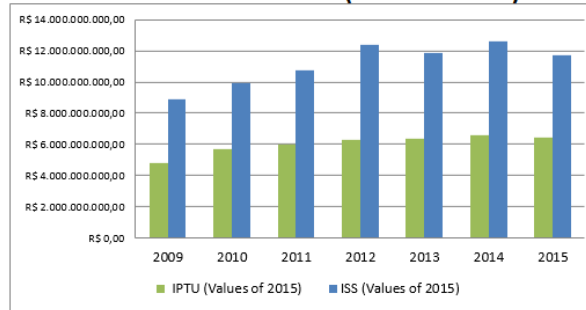
City:	SÃO PAULO					
Year	IPTU (Nominal)	IPTU (Values of 2015)	Surplus - IPTU	ISS (Nominal)	ISS (Values of 2015)	Surplus - ISS
2009	3.226.271.058,33	4.803.462.484,2061		5.954.568.066,71	8.865.511.855,9377	
2010	4.049.113.821,71	5.692.203.110,3403	888.740.626,13	7.053.318.138,28	9.915.483.044,6286	1.049.971.188,6909
2011	4.531.673.265,55	5.981.590.899,7338	1.178.128.415,53	8.147.925.920,92	10.754.870.592,8969	1.889.358.736,9592
2012	5.027.438.496,48	6.270.412.147,8336	1.466.949.663,63	9.935.287.383,04	12.391.667.594,2333	3.526.155.738,2956
2013	5.411.427.058,74	6.372.710.093,3982	1.569.247.609,19	10.073.340.125,08	11.862.762.926,0289	2.997.251.070,0913
2014	5.963.748.376,61	6.600.080.328,3943	1.796.617.844,19	11.379.496.977,91	12.593.689.305,4530	3.728.177.449,5153
2015	6.437.361.619,32	6.437.361.619,3200	1.633.899.135,11	11.716.470.921,86	11.716.470.921,8600	2.850.959.065,9223
		Cumulative Total	8.533.583.293,78		Cumulative Total	16.041.873.249,4745

	Collection				
Year	IPTU (Values of 2015)	ISS (Values of 2015)	Total IPTU and ISS		Surplus - Collection related to 2012
2009	4.803.462.484,21	8.865.511.855,94	13.668.974.340,14		
2010	5.692.203.110,34	9.915.483.044,63	15.607.686.154,97		
2011	5.981.590.899,73	10.754.870.592,90	16.736.461.492,63		
2012	6.270.412.147,83	12.391.667.594,23	18.662.079.742,07	Project Value	-27.777.778,00
2013	6.372.710.093,40	11.862.762.926,03	18.235.473.019,43		- 426.606.722,64
2014	6.600.080.328,39	12.593.689.305,45	19.193.769.633,85		531.689.891,78
2015	6.437.361.619,32	11.716.470.921,86	18.153.832.541,18		- 508.247.200,89
				Cumulative Total	- 430.941.809,75

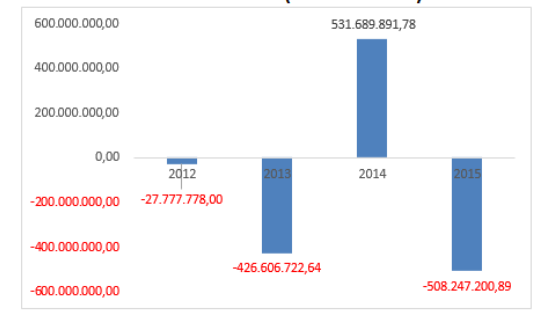
Nominal Evolution of IPTU and ISS



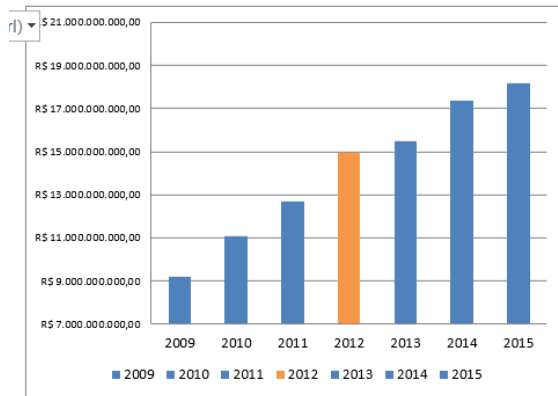
Evolution of IPTU e ISS (values of 2015)



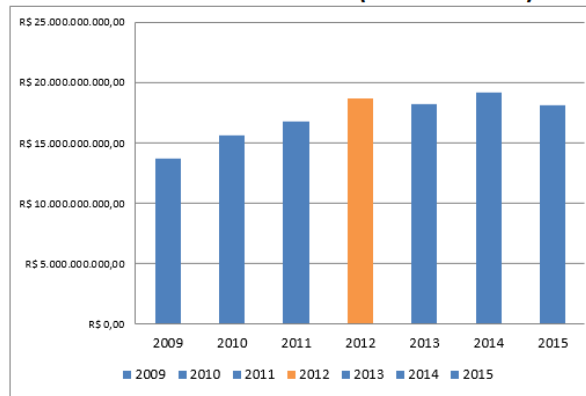
Project Value and Collection Surplus of IPTU and ISS related to 2012 (values of 2015)



Nominal Evolution of IPTU and ISS

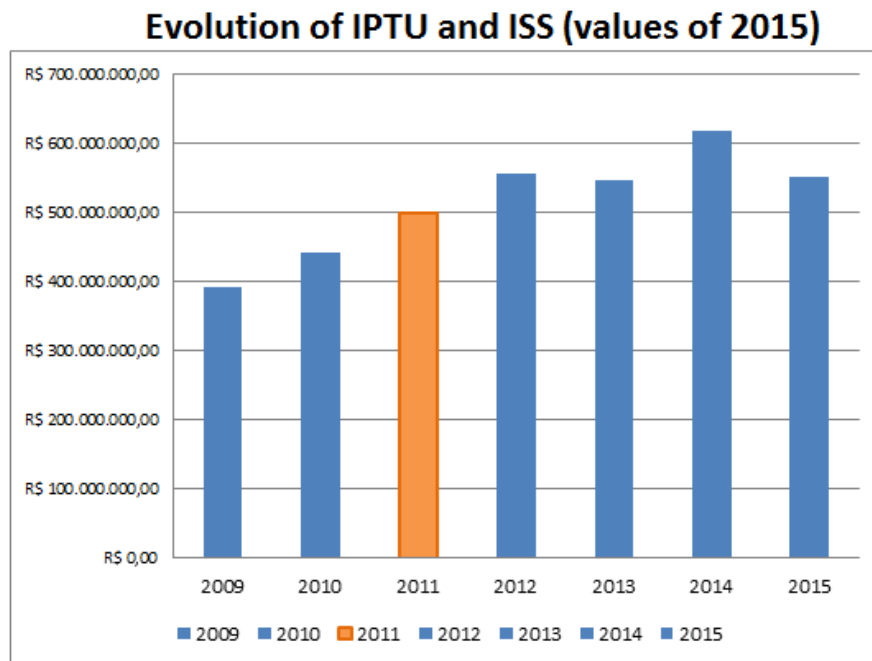


Evolution of IPTU and ISS (values of 2015)



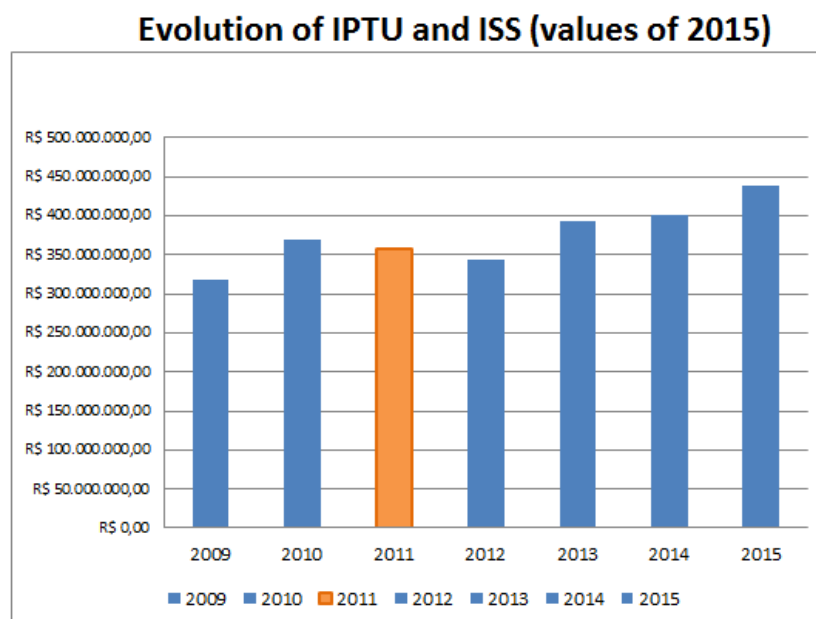
Analyzing the following graphs of the evolution of the collection between 2009 and 2015 for each one of the cities presented below, where the year that the loan was taken is in a different color, we can see that in any one of the cities analyzed, there was a continuous growth, showing that the investments done with resources of the loan do not guarantee a continuous increase in the collection for the cities.

Figure 16 - Campo Grande



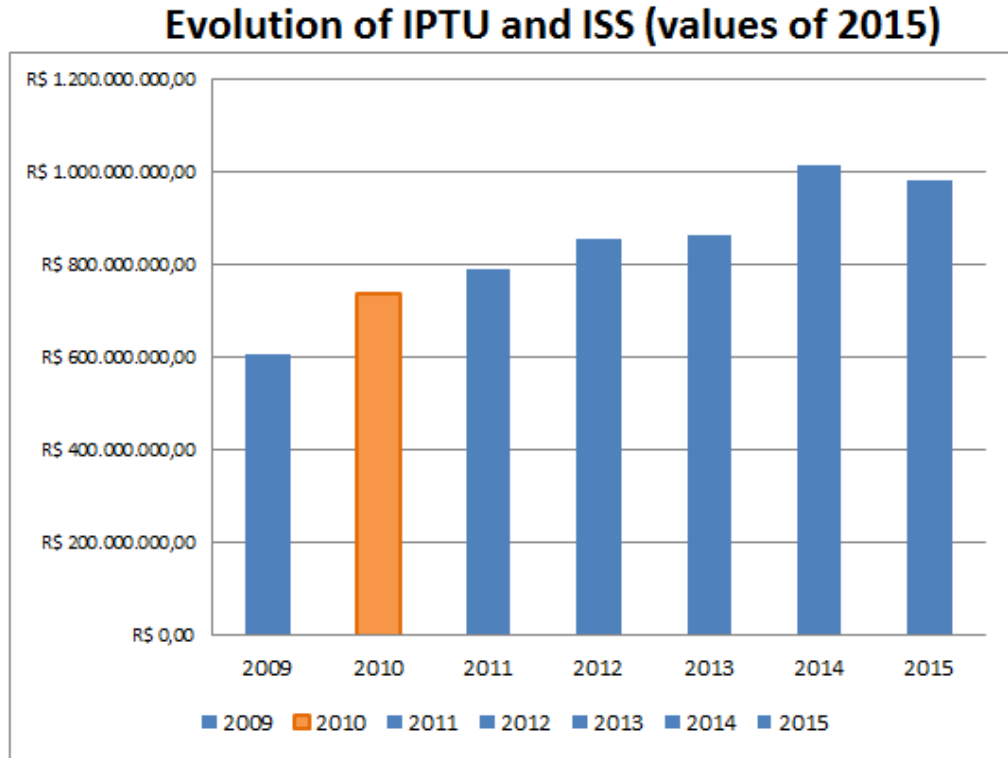
Source: Brazilian Treasure site in the internet - <https://siconfi.tesouro.gov.br>

Figure 17 - Florianópolis



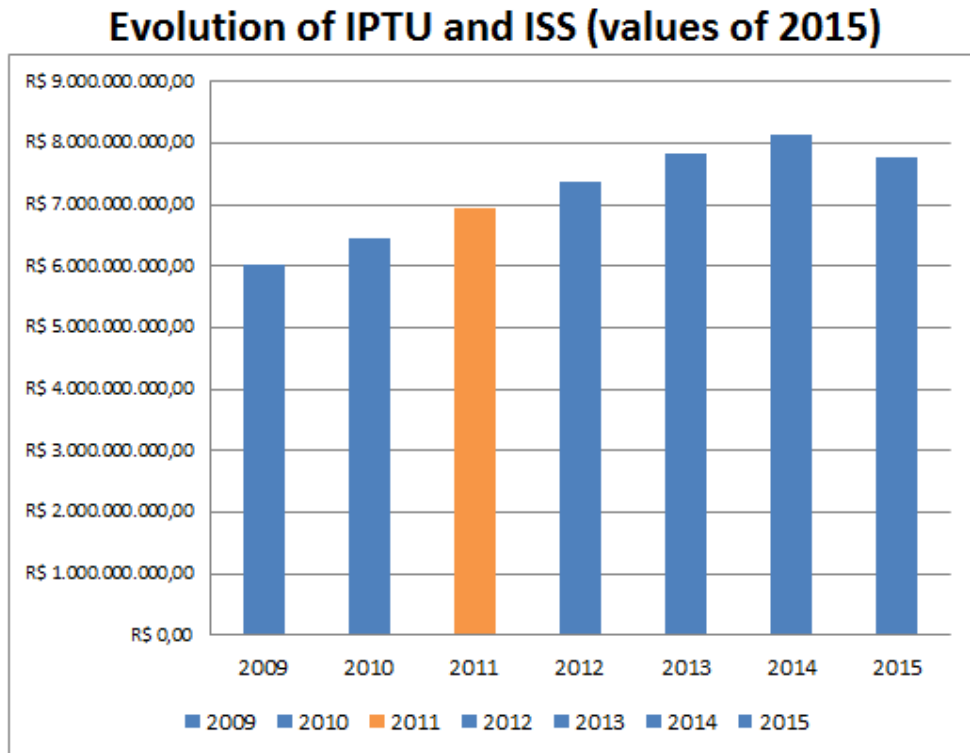
Source: Brazilian Treasure site in the internet - <https://siconfi.tesouro.gov.br>

Figure 18 - Fortaleza



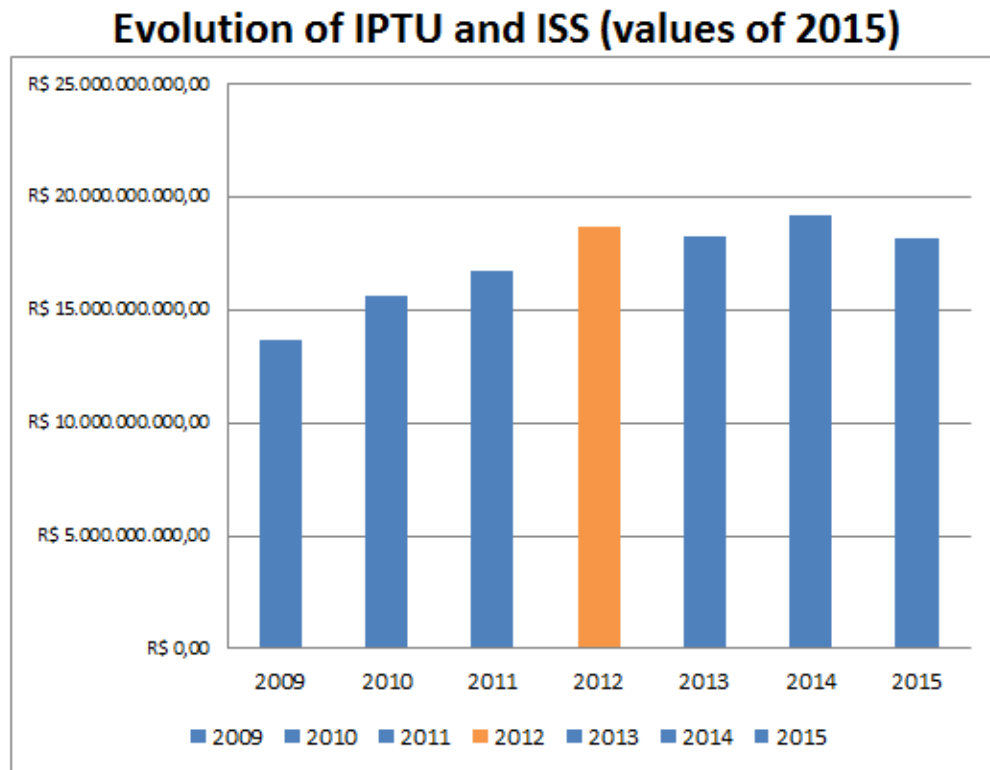
Source: Brazilian Treasure site in the internet - <https://siconfi.tesouro.gov.br>

Figure 19 - Rio de Janeiro



Source: Brazilian Treasure site in the internet - <https://siconfi.tesouro.gov.br>

Figure 20 - São Paulo



Source: Brazilian Treasure site in the internet - <https://siconfi.tesouro.gov.br>

The motivation for these results is better analyzed in the next section of this paper.

8. Conclusion and Recommendations

This null effect of participation in the programs on the increase of the cities own revenues may be a consequence of the diversity of actions financed by the program, which allows investments in items that generate little direct effect on the collection of taxes, although they can generate other benefits for the administration and the citizens.

Factors influencing the results, specifically to the IPTU (property tax) and the ISS are:

- Changes in tax rates (IPTU, ISS, etc.);
- Generic Update Securities and real estate register (property tax);
- Update of registration service providers (ISS);
- Delinquency (relative to the number of taxpayers or the percentage of unrealized revenue).

There are other general factors that contribute to the results:

- Sectoral composition of the municipal GDP (Agriculture, Industry, Services - can influence Collection: More % Services, for example, greater weight ISS);

- Variation of the municipal GDP (important to advance realistic estimates IBGE);
- Nonrecurring exogenous factors (climate issues such as droughts or floods, problems in relevant sectors of the municipality, macroeconomic shocks, etc.);
- Training of servers connected to surveillance;
- Possible benefits or tax exemptions or even debt refinancing;
- Overestimation of revenue that, by failing to materialize, create budgetary problems;
- Incentive programs to pay taxes on time or within the deadline.

It would therefore be possible to make some changes in the current programs for the purpose of increasing their own revenues. It should be establish some criteria to reinforce that at least 50% of the projects should be linked to some kind of increase in the revenues, since nowadays much different kind of projects are accepted, even to do construction.

It is important to notice that are other loans available, like from World Bank (International Bank for Reconstruction and Development - IBRD), but with different conditions. They are helping lot cities that are fighting against hunger, greenhouse gases and trying to improve sustainable development.

The next necessary steps to be taken are to review the program rules to guarantee a relation of the projects to an increase in revenues and also use different statistic models to isolate each of the variables, to better understand the influence of each of the strategies used to augment the collection and improve citizen relationship with government.

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