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The State of Parana's Municipal Finance System: A Model for Financing Sustainable Development for Brazil's Municipalities?

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Inter-American Development Bank
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Main types of projects that the SFM finances, such as street construction and paving, street lighting, ciclovias, and municipal bus terminals.

Source: SECID.

Keywords: Brazilian states, credit markets, finance, infrastructure, institutional development, investment, lending, municipal, Paraná, subnational, Urban Development Fund.

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Abbreviations and acronyms

FDU Fundo de Desenvolvimento Urbano/Urban Development Fund

FP Fomento Paraná/ Paraná's state development agency

IPDM Índice Iparades de Desempenho Municipal/ Paraná's Municipal Development Performance Index

LRF Lei de Responsabilidade Fiscal/ National Fiscal Responsibility Law

PL Patrimônio Líquido/bank equity

SECID Secretaria de Estado das Cidades do Paraná/ State Secretariat of Cities

SFM Sistema Financeiro Municipal/ Paraná's Municipal Finance System

STN Secretaria do Tesouro Nacional/National Secretary of the Treasury

About the authors



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DV. He holds a Ph.D. from the University of California and has worked for more than four decades on urban topics related to finance and economics in Latin America. David worked as a professor and researcher in Brazil for 17 years at the Instituto Brasileiro de Geografia y Estatística (IBGE), the Universidade Federal do Rio de Janeiro in the engineering graduate program (COPPE), the Instituto de Pesquisa e Planejamento Urbano e Regional (IPPUR) and the Fundação Getúlio Vargas. He entered the World Bank in 1990, where he conducted investment and reform programs at a subnational level in countries including Brazil, Argentina, Chile, and Ecuador. With the objective of promoting greater private sector participation in urban finance, he joined Dexia Crédit Local as Vice-President of the New York headquarters in 1998, where he established lending programs with Argentina, Brazil, and Mexico. Since returning to Brazil in 2004, he has been a consultant, conducting research for institutions such as the IDB and the Lincoln Institute of Land Policy, among others.



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Executive summary

This paper explores the Brazilian State of Paraná's urban development fund in financing municipal infrastructure. It seeks to address two main questions: the success of Paraná's Municipal Finance System (SFM) in financing infrastructure and institutional development and providing technical assistance and the SFM's contribution to national economic objectives.

The availability of sufficient financial resources is crucial for cities to address their growing infrastructure needs amidst rapid urban development. Traditional funding sources often fall short, making urban development funds an effective mechanism to bridge the infrastructure financing gap and promote sustainable urban growth.

Urban development funds, such as Paraná's SFM, are specialized financial intermediaries that mobilize resources from various stakeholders to fund infrastructure projects. They employ innovative financing mechanisms and provide technical assistance to municipalities, offering greater flexibility and financial stability.

The paper highlights the importance of municipalities, particularly smaller ones, in Brazil's consolidated public sector. Despite a decline in investment during Brazil's Great Recession, the municipal share of total investment increased. Smaller municipalities account for a significant share of the country's population, GDP, and households living in poverty.

In Paraná, smaller municipalities also play a significant role. They accounted for a substantial portion of the state's population, GDP, and households living in poverty. However, these municipalities face comparative disadvantages when it comes to borrowing for infrastructure financing.

The paper first discusses the effectiveness of Paraná's SFM, tracing its evolution over three decades with support from international financial institutions. The SFM has disbursed loans totaling \$1.9 billion, serving municipalities with varying population sizes and socioeconomic conditions. In addition to its own loans, the SFM managed loans from other sources and distributed state government grants, resulting in a total lending and grants of over \$2.3 billion.

The findings indicate that the SFM has been successful in providing financial support and technical assistance to municipalities. Its institutional and financial structures have been strengthened over time, making it more integrated and resilient. The SFM has significantly contributed to infrastructure development in smaller municipalities, accounting for over 80% of the lending provided.

Finally, based on a review of the international experience with municipal financial intermediaries, the paper defines criteria for developing modern subnational credit markets that contribute to national economic objectives and applies them to the SFM. The SFM generally meets the conditions for a specialized municipal intermediary in a modern subnational credit market, although Brazil's high interest rates continue to impede fuller development.

The paper concludes by suggesting ways to increase the positive impact of the SFM in addressing infrastructure financing challenges and promoting sustainable urban development.

Introduction

Urban development funds can play a crucial role in financing municipal infrastructure projects, providing a vital source of funding for cities to address their growing infrastructure needs. The availability of sufficient financial resources is crucial, as urban populations continue to rise and cities face increasing challenges in terms of transportation, housing, utilities, and public amenities¹.

Traditional sources of funding, such as tax revenues and government grants, often fall short of meeting the demands of rapid urban development. In this context, urban development funds can be used as an effective mechanism to bridge the infrastructure financing gap and promote sustainable urban growth.

Urban development funds are typically established at the national, regional, or local level and operate as specialized financial intermediaries. They mobilize resources from various stakeholders, including government agencies, development banks, private investors, and multilateral institutions. They employ innovative financing mechanisms, such as bonds, loans, equity investments, and public-private partnerships, to channel capital towards priority infrastructure projects. By diversifying funding sources and spreading the financial risks, urban development funds offer municipalities greater flexibility and financial stability in executing their infrastructure plans. Furthermore, urban development funds not only provide financial support but also offer technical assistance, capacity building, and knowledge sharing to municipalities.

Against this background, this paper aims to explore the role of the Brazilian State of Paraná's urban development fund in financing municipal infrastructure. Specifically, we seek to address two main questions:

1. How successful has Paraná's Municipal Finance System (SFM), known as Sistema de Financiamento e Apoio aos Municípios, been in financing infrastructure and institutional development and providing technical assistance for its municipalities, particularly the smaller ones?
2. Does the SFM meet the requirements for modern subnational credit markets by contributing to Brazil's national efficiency, equity, stability, and environmental objectives?

Within the Brazilian context, these questions are of utmost importance given the significant role municipalities play in Brazil's consolidated public sector. During Brazil's Great Recession from the second quarter of 2014 to the end of 2016, investment in the consolidated public sector, including at the municipal level, experienced a significant decline. Notably, municipal public investment dropped from 0.68% of GDP in 2009 to 0.39% in 2017, equivalent to a decrease of approximately US\$3.7 billion at the 2017 exchange rate.² Despite this decline, the municipal share of total consolidated public sector investment increased from 21.4% in 2009 to 22.8% in 2017, as national and state government investment decreased at even faster rates.

1. Between 2000 and 2015, the total number of urban households in Brazil grew by nearly 12 million, which is over five times the number of households in the municipality of Rio de Janeiro in 2010. As the growth rate of urban households in Brazil was more than double that of the urban population, meeting the infrastructure demands of these new households presents a formidable task.

2. We transform the Brazilian Real to its 2017 value using the Broad Consumer Price Index (IPCA) and into US\$ at the average annual commercial exchange rate for 2017 (US\$1 = R\$3.19).

Furthermore, smaller municipalities are particularly significant in terms of their total population, GDP, and households living in poverty. In 2017, 68.8 million people (33.1% of Brazil's total population) resided in the 4,957 municipalities with 50,000 or fewer inhabitants, contributing to a GDP of US\$458.8 billion (R\$1.4 trillion), which accounted for 22.2% of the country's total GDP. Additionally, in 2010, municipalities with 50,000 or fewer inhabitants were home to 7.0 million households earning less than half the minimum salary per capita (often used as a measure of poverty), surpassing the number in municipalities with more than 500,000 inhabitants (3.3 million) by more than double.

Finally, the significance of smaller municipalities in Paraná is also notable. Among the state's 11.3 million inhabitants residing in its 399 municipalities, 4.5 million (39.5%) lived in the 367 municipalities with 50,000 or fewer inhabitants.

These smaller municipalities contributed to a total GDP of US\$42.8 billion, accounting for 32.5% of the state's total GDP. In 2010, over half (56.2%) of the households in Paraná earning less than half the minimum salary per capita were in these smaller municipalities. However, as discussed below, such municipalities face comparative disadvantages when trying to borrow to finance their infrastructure needs.



1. The effectiveness of Paraná's SFM

The Municipal Finance System (SFM) in Paraná is the result of three decades of work, which involved two World Bank loans and three loans from the Inter-American Development Bank (IDB). The state established the Urban Development Fund (FDU) in 1988, initially funded by a World Bank loan of US\$100 million. Subsequently, the FDU received three IDB loans: Paraná Urbano I in 1996 (US\$249 million), Paraná Urbano II in 2002 (US\$100 million), and Paraná Urbano III in 2020 (US\$118.4 million). As of 2017, the FDU had a bank capital of over US\$420 million. Notably, the reforms implemented during the preparation of IDB's Paraná Urbano III in 2018 enhanced the SFM's institutional and financial structures, making them more integrated and resilient³.

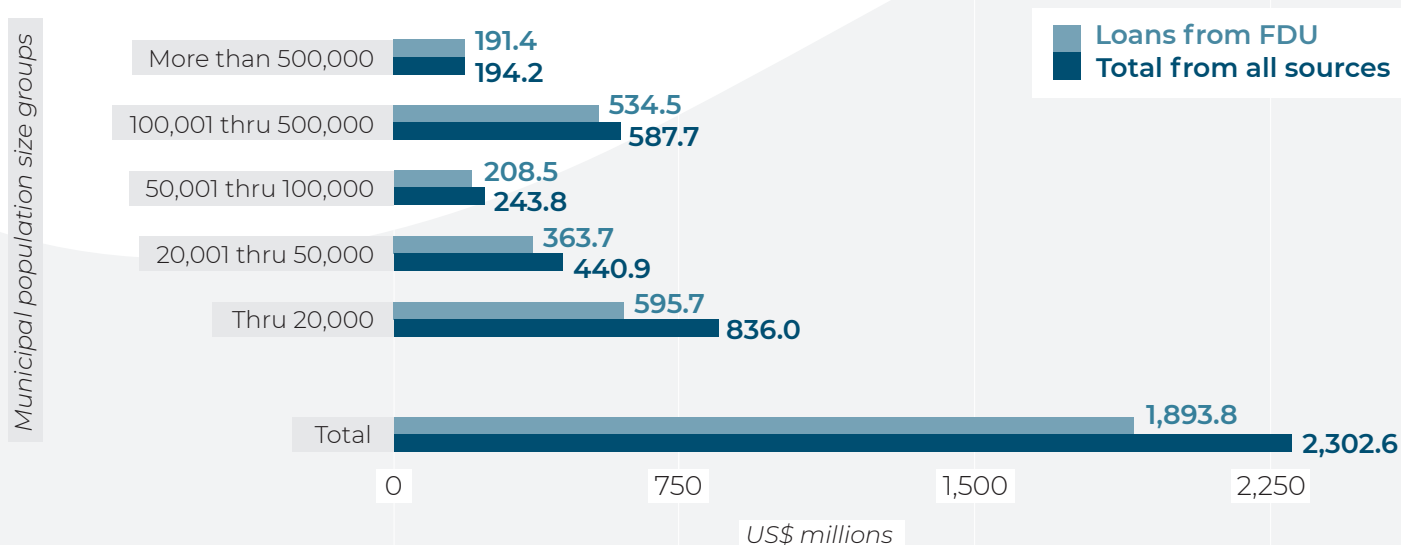
Since the inception of Paraná Urbano I in 1996 until November 2020, the SFM's FDU has disbursed loans totaling US\$1.9 billion through more than 10,000 loans, serving municipalities with varying population sizes and socioeconomic conditions.

Additionally, the SFM managed loans worth over US\$366.3 million from other sources such as Caixa and BNDES and distributed US\$42.5 million in state government grants. Consequently, the total lending and grants provided by the SFM amounted to over US\$2.3 billion (R\$7.3 billion) during the specified period.

Chart 1 illustrates the total value of municipal loans and grants provided by the SFM, totaling US\$2.3 billion, from both the FDU and other sources, categorized by municipal population size groups in 2017. Of this total, the FDU accounted for over 80%, with US\$1.9 billion (R\$6.0 billion). Markedly, 50.7% of the FDU lending, amounting to US\$959.4 billion (R\$3.1 billion), was allocated to municipalities with 50,000 or fewer inhabitants.

3. Discussed in detail in the section on the creation and organizational structure of the SFM.

Chart 1. SFM: Total value of loans from the FDU and financing from other sources administered by the SFM, including state government grants: 1996 to November 2020 in US\$(*): 1996/November 2020

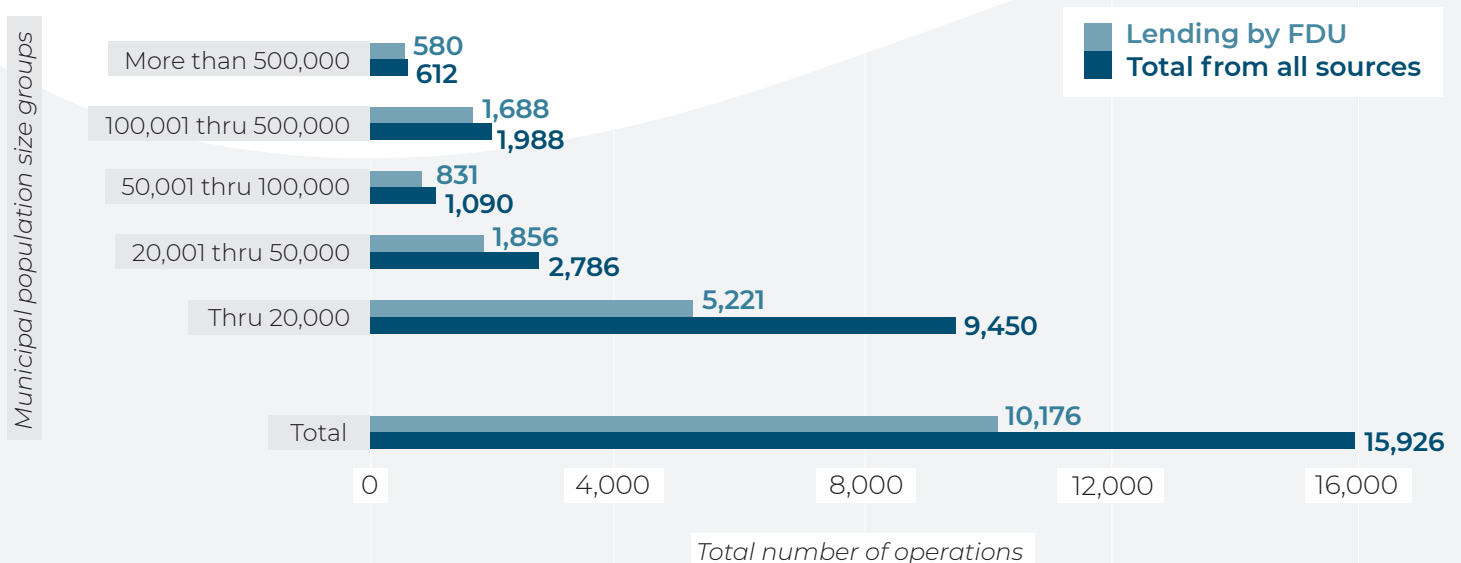


(*) US\$ millions: Average 2017 commercial exchange rate: US\$1 = R\$3.19
 Source: Authors' tabulation using a database from Paranaidade.



Chart 2 shows that the SFM made nearly 16,000 loans and grants during the 1996/2020 period. Of these, 12,236 (76.8%) went to municipalities with 50,000 or fewer inhabitants. During this same period, the FDU alone made 10,176 loans, 7,077 of which (69.5% of its total) went to municipalities with 50,000 or fewer inhabitants.

Chart 2. SFM. Total number of loans from the FDU and financing from other sources administered by the SFM, including state government grants: 1996 to November 2020



Source: Authors' tabulation using a database from Paranacidade.

The SFM also plays a crucial role in supporting the institutional development of its municipal clients through various means. It provides financial assistance for institutional development projects, offers technical guidance on project preparation, procurement, and execution, and facilitates knowledge management. The implementation of World Bank and IDB projects has allowed the SFM to provide valuable technical assistance to municipalities, helping them enhance their project identification, preparation, procurement, and execution processes. The operational manual of the SFM project has been particularly instrumental in providing guidance to municipalities.

Between 1996 and 2020, the SFM disbursed loans totaling US\$64.0 million (R\$204.2 million) for nearly 1,300 institutional development projects.

Out of these loans, over 1,000 were granted to municipalities with 50,000 or fewer inhabitants, amounting to US\$37.2 million (R\$118.5 million).

The municipalities with 20,000 or fewer inhabitants received the highest concentration of loans, with 725 loans totaling R\$72.9 million (US\$22.9 million). In 2022, the SFM lent R\$429.2 million to 89 municipalities.

In terms of knowledge management, Paranacidade has actively sought to identify and disseminate best practices to municipalities through various channels. It conducts courses, conferences, and workshops covering topics such as municipal financial management, land use, sector plans, project design, procurement, and execution. Additionally Paraná Interativo (2020) provides internet-based access to georeferenced data and indicators for Paraná's municipalities, facilitating informed decision-making processes.



2. SFM and the requirements for modern subnational credit markets

This section examines the role of modern subnational credit markets in supporting national economic objectives. It reviews the international experience with municipal financial intermediaries, identifies the essential conditions for the successful functioning of such markets, and subsequently applies these criteria to evaluate the SFM.

2.1 The role of modern subnational credit markets and national economic objectives

Modern subnational credit markets (e.g., bank and capital markets) contribute to national stability, efficiency, equity, and environmental sustainability objectives. Subnational credit markets can play a crucial role in allocating a country's limited resources by acting as intermediaries between the savers and investors by creating and trading financial assets.

If there is adequate prudential regulation and supervision of financial markets, subnational credit markets can contribute to the national economic stability objective by providing incentives for municipal fiscal responsibility. As the private sector lenders take the default risk in such a modern municipal market, they charge higher interest rates and restrict lending to less creditworthy local governments. Municipalities seek to maintain their creditworthiness to facilitate access to credit on more favorable terms. As a result, there usually are very few defaults at the subnational level in countries with such modern credit markets. For example, although the municipal default rate for 2007-2016 edged up slightly in the US, it was still only 0.15% in 2016, compared to the corporate default rate of 6.92% (Moody's 2017).

Modern subnational credit markets boost efficiency by financing infrastructure on favorable terms and play an essential role in domestic financial markets. In the US, investors currently hold US\$3.8 trillion in municipal securities. The average annual bond issuance in the US was over US\$430 billion during the last decade ending in 2018, enough to finance two-thirds of municipal infrastructure investments (MSRB 2019).

Modern credit markets also contribute significantly to national objectives of interpersonal equity⁴ and environmental sustainability. They achieve this by financing municipal investments in critical sectors like health, education, and social housing, while also supporting infrastructure development that protects the environment and enhances climate resilience.

Additionally, these credit markets can channel funds towards environmentally friendly projects, integrate environmental, social, and governance (ESG) factors into decision-making, provide incentives for sustainable practices through favorable financing terms, assess and price environmental risks, promote transparency and accountability through robust reporting practices, and foster impact investing. Through these mechanisms, modern credit markets actively support the pursuit of both equity and sustainability goals at a national level.

4. Interpersonal equity refers to the concept of fairness and justice in interpersonal relationships and interactions, regardless of personal characteristics such as race, gender, age, or socioeconomic status.

2.1.1 Specialized Municipal Financial Intermediaries: The International Experience

In the realm of municipal finance, smaller municipalities often encounter difficulties in accessing credit markets due to their limited capacity and the relatively lesser amounts and infrequency of their borrowing needs. Moreover, the high fixed costs associated with bond issuance make this option inefficient and expensive for smaller cities. To bridge these financing gaps and support national economic objectives, many countries have established specialized municipal financial intermediaries. These entities, which globally go by different names, such as local government funding agencies, municipal development funds, bond banks, and municipal relationship banks, play a vital role in assisting smaller municipalities in obtaining the necessary financing for their projects.

The international experience with specialized municipal financial intermediaries offers valuable insights into successful approaches to foster municipal credit growth and support local development. Two noteworthy examples are the Tamil Nadu Urban Development Fund (TNUDF)⁵ and the Municipal Finance Company of the Czech Republic (MFCCR).

The TNUDF has emerged as one of the most successful international institutions in promoting municipal credit growth. Notable achievements include issuing a \$300 million bond for the Madurai ring road project, attracting domestic private finance, and facilitating equity participation in wastewater projects. The fund has also implemented pooled financing for twelve towns, introducing security mechanisms, independent trustees, government guarantees, and escrow accounts to protect investors and attract funding. TNUDF's experiences serve as a valuable precedent for similar initiatives and provide valuable lessons for fostering municipal credit growth and infrastructure development in other regions (Peterson, 2003).

Similarly, the MFCCR successfully introduced local credit markets by implementing municipal lending through commercial banks. By assuming all credit risk, these banks began lending to municipalities using their own funds. Today, Czech commercial banks routinely offer competitive, intermediate-term infrastructure loans utilizing their long-term savings. Furthermore, major banks provide infrastructure loans to local governments, while municipalities with populations exceeding 100,000 have issued municipal bonds. The availability of funds from both sources has contributed to lower interest rates and longer maturities for several types of municipal credit, demonstrating the positive impact of a functioning local credit market in the Czech Republic.

Other examples of municipal finance intermediaries include local government funding agencies in Europe (such as Agence France Locale and Kommunekredit in Denmark), bond banks in the US, and Colombia's FINDETER⁶.

These intermediaries enable efficient financing through activities such as bond issuance, loan guarantees, and securitization. They assemble portfolios of loans to creditworthy municipalities and prioritize the development of institutional capacity through technical assistance and knowledge dissemination.

In Europe, specialized municipal financial intermediaries, such as municipal relationship banks, have adopted a long-term partnership approach with local clients. These banks extend their services beyond lending and assist municipalities in budget preparation, project structuring, and financial analysis. By guiding municipalities through the credit market and facilitating loan applications and project preparation, these intermediaries contribute to the learning process and enhance municipalities' financial capabilities.

5. <http://tnuifsl.com/tnudf.asp>

6. In the specific case of Colombia's FINDETER, established in 1980, it operates as a second-tier lender, providing loans to domestic commercial banks for on-lending to municipalities for infrastructure projects. Supported by the Colombian government, World Bank, and Inter-American Development Bank, FINDETER benefits from its high credit rating and offers more favorable lending terms compared to commercial banks. It assumes the full municipal credit risk, while commercial banks retain the loans. FINDETER underwent an institutional transformation in 2011, expanding its financial product offerings and implementing the Integrated Territorial Development program to address the short, medium, and long-term needs of local governments.

Paraná's SFM serves as a specialized municipal financial intermediary at the state level.

Unlike national development banks like Caixa and BNDES that operate across all states and municipalities, the SFM focuses on lending to municipalities within a single state. It shares similarities with Colombia's FINDETER in its emphasis on municipal finance, although FINDETER operates at the national level as a second-tier bank.

These examples of specialized municipal financial intermediaries illustrate the diverse approaches taken worldwide to support municipal credit growth and foster local development. By providing tailored financing solutions, comprehensive services, and institutional capacity development, these intermediaries contribute to the sustainable development of municipalities and enable them to address their unique financing challenges effectively.

2.1.2 What are the conditions for modern subnational credit markets?

Based on a comprehensive literature review encompassing Latin America, the US, and Europe, a range of conditions have been identified as necessary for establishing municipal financial intermediaries that effectively contribute to national efficiency, equity, stability, and environmental objectives. Table 1 summarizes the key conditions based on the review's findings. Anderson (2004) suggests that responsible and effective borrowing by municipalities requires the fulfillment of requirements in the following areas: (i) legal capacity, (ii) institutional capacity, (iii) competent staff possessing the necessary knowledge and skills, and (iv) a reliable source of funding through loans or bond issues.



Table 1. Conditions for a municipal financial intermediary that contribute to the development of modern subnational credit markets.

Legal capacity
Legal structure that provides sufficient autonomy and accountability for accomplishing the objectives of the intermediary
Creditworthiness: Adequate prudential controls and supervision by the institutions of the national financial system, including: Asset-liability management (e.g., liquidity policies and matching the duration of assets and liabilities), risk management, stress testing, and credible auditing. Acceptable credit ratings by reputable firms
Developed sources of funding from loans or bond issues
Private credit markets free from moral hazards, such as implicit or explicit government guarantees for municipal loans
Adequate regulatory controls on municipal borrowing by state or national governments, especially when access to private credit markets is not viable due to high interest rates or other issues
Ability to borrow from various entities in different markets, using a variety of instruments, and targeting multiple investor groups
Competition with other lenders to provide incentives for improved performance
Capacity to securitize municipal loans for sale on the credit markets
Institutional capacity
Effective governance for setting overall policies and strategies for attaining them
Sufficient administrative capacity for efficient and effective policy implementation
Mechanisms for assessing and lending to creditworthy municipalities, thereby developing a portfolio of municipal loans. Greater access to credit provides incentives for the maintenance of creditworthiness and improved fiscal performance
Ability to assist the institutional development of municipal clients (especially the smaller ones), including the financing of: <ul style="list-style-type: none"> • Equipment and works • Technical assistance for: Municipal financial management (e.g., management information systems and real estate cadasters), infrastructure planning, and project design, procurement, and execution
Knowledge and skills
Knowledge management and dissemination of relevant national and international information through courses, conferences, workshops, and consultations

Source: The authors based on a review of the international literature

2.2 The SFM and the requirements for modern subnational credit markets

To what extent does Paraná's SFM meet the conditions of a modern subnational credit market? What changes would help it overcome any weaknesses in this regard? To address these questions, we will analyze the creation and organizational structure of Paraná's SFM, including the relevant laws, regulations, and financial statements of its two main entities: Paranacidade and Fomento Paraná.

2.2.1 The creation and organizational structure of Paraná's System for Financing Actions in Municipalities

The State of Paraná in Brazil has implemented various policies and tools to support urban development. One such tool is the State Urban Development Fund (FDU), initiated in 1988, to finance urban infrastructure and public services in municipalities with populations below fifty thousand. Initially supported by loans from the World Bank and later the Inter-American Development Bank (IDB), the FDU faced restrictions due to the National Fiscal Responsibility Law (LRF) enacted in 2000.

As a result, the state shifted FDU's resources as a capital contribution⁷ to its state financial institution, Fomento Paraná⁸, which allowed for the continued financing of municipalities in Paraná. This adjustment ensured compliance with the LRF while maintaining support for local development.

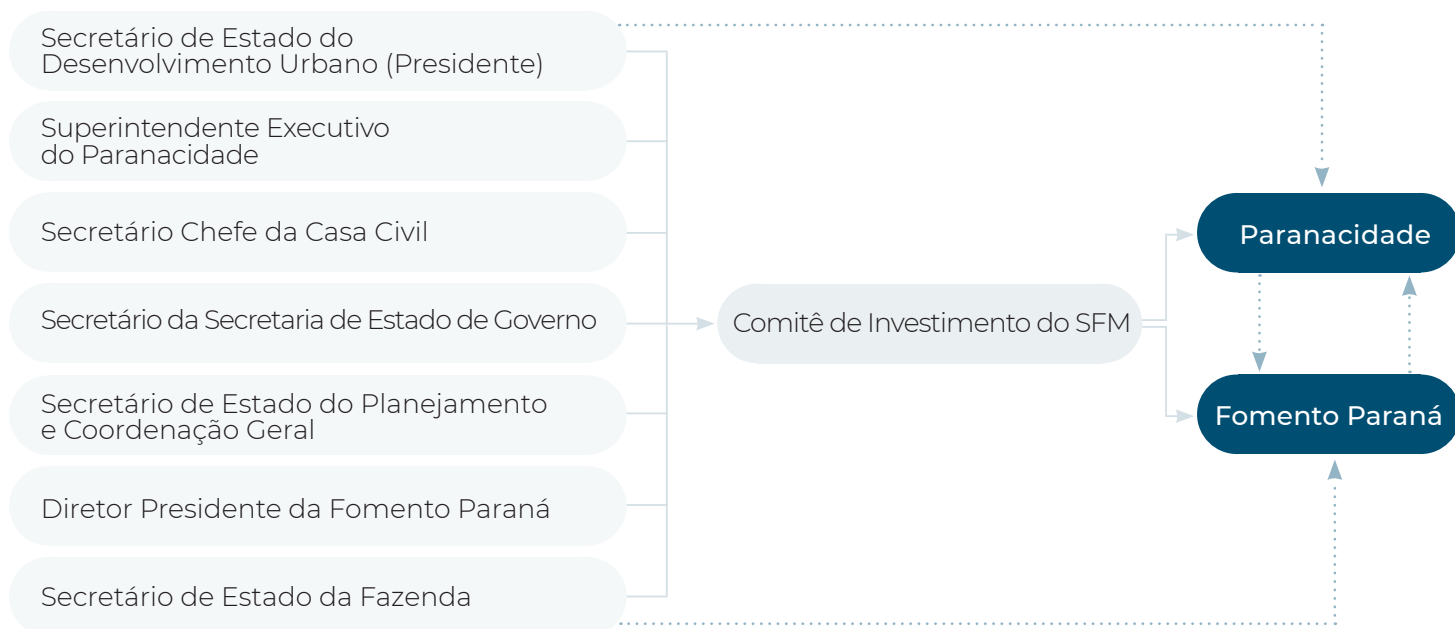
In 2002, the State of Paraná established the System for Financing Actions in Municipalities (SFM)⁹. In 2013, a new state law (17655) was enacted to revise SFM's regulatory framework, aiming to safeguard the resources of the FDU, ensure its financial sustainability, and enhance its effectiveness. Law 17655/2013 specifies the funding sources for the FDU, including interest payments on municipal loans and returns from other financial investments. Additionally, the law clearly outlines the responsibilities of the entities within SFM's organizational structure, as depicted in Chart 3.

7. Law 13,227 of July 18, 2001, incorporated the FDU resources into Fomento Paraná's capital. Fomento Paraná must keep accounting records regarding the use of FDU funds and returns earned on them.

8. Agência de Fomento Paraná, S.A., known as Fomento Paraná, is a closely held semipublic corporation, whose majority stakeholder is the State of Paraná. Created under Law 11,741/1997, it is an independent financial entity affiliated by law with the Department of Finance. Because of its legal status, Fomento Paraná is not subject to the LRF restriction and can, therefore, provide financing to municipalities of the State of Paraná.

9. Decree 5,361 of April 30, 2002.

Chart 3. SFM's organizational structure



Source: Author's summary based on the Regulamento Operacional Geral do SFM (2019)

The State Secretariat of Cities (SECID) (formerly the Secretariat Urban Development - SEDU) is responsible for establishing urban development policy for the state, providing comprehensive technical assistance to municipalities and associations of municipalities, and administering the SFM.

Paranacidade, established in 2006 as a private non-profit entity¹⁰, is the executing agency for the State of Paraná's institutional and regional development policy actions (Paranacidade, 2021). It is incorporated as a private sector non-profit (Serviço Social Autônomo), subordinated to the State Secretariat of Cities (SECID)¹¹. The Superintendent of Paranacidade is the Secretary of State for Cities, who is responsible for overseeing and evaluating its actions in accordance with the urban and regional development policy for the state of Paraná. This includes supervising plans, programs, projects, products, and services approved by the SFM's Investment Committee. Paranacidade implements national and international programs that finance municipal infrastructure and institutional development. Furthermore, it provides technical assistance and knowledge management to municipalities.

Fomento Paraná (FP) operates under the laws and regulations of the National Financial System (SFN) and is subject to supervision by the central bank. These legal and regulatory restrictions are in place to mitigate risks associated with development agencies within the SFN. The central bank ensures compliance with these rules through its supervision of FP. Additionally, the National Secretary of the Treasury (STN) regulates municipal borrowing by enforcing the Fiscal Responsibility Law and other limits. In essence, these national institutions have stringent control over both lending to and borrowing by municipalities, ensuring a robust oversight framework.

As mentioned earlier, FP serves as the financial agent of the FDU and holds its capital as stockholder equity (PL). FP's financial accounts undergo auditing by an independent private accounting firm (such as KPMG in 2017) and by the state's auditing body, the Tribunal de Contas. This arrangement ensures transparency

10. Law 15,211 of July 17, 2006.

11. Paranacidade operates under a management contract with the State of Paraná, as stipulated in Articles 17 and 18 of Law 15,211/2006. This contract ensures the organization's technical, administrative, and financial autonomy while adhering to the principles of legality, impersonality, morality, publicity, reasonableness, and cost-effectiveness, as mandated by the law.

and accountability in FP's financial operations. One notable strength of FP is its ability to access funds from various sources. It can borrow from Brazilian institutions such as Caixa Econômica Federal, BNDES, and other public or private entities. These funds can then be on-lent to municipalities. FP can also act as financial agent for these entities without assuming credit risk.

Finally, the SFM's Investment Committee is responsible for establishing and guaranteeing adherence to the law, regulations, and government policies. Its members include representatives from the state secretariats of cities, finance, government, planning, the governor's office, Paranacidade, and Fomento Paraná. The Investment Committee meets periodically to perform its duties and responsibilities as defined in its bylaws. The Regulamento Operacional Geral (ROG)¹² defines the rules and regulations of the SFM.

Lending Conditions under the SFM. To be considered eligible to borrow from SFM, municipalities in Paraná must present financing priority to SECID/Paranacidade for classification and approval. Additionally, they must also:

- Present priorities in accordance with their Municipal Master plan, as established by State Law No. 15,229/2006 (amended by State Law No. 19,866/2019 and State Law No. 21,051/2022)
- Be in full compliance with the commitments made regarding previous loans and with the provisions of the pertinent state and national laws.
- Have the capacity to assume debt under federal laws and regulations.

SFM finances a broad range of institutional and infrastructure projects¹³. The SFM used the Taxa de Longo Prazo (TLP) as the index for calculating its interest rates until 2023, when it began using its spreads and the SELIC rate¹⁴ as its index. As the central bank uses the SELIC to implement its monetary policy, it varies significantly over time. The average annual SELIC during 2018/2022 ranged from 2.00% in 2021 to a high of 13.75% in late 2022 and the first semester of 2023, with an annual average of 6.5%. In real terms, annual SELIC ranged from -5.5% in 2021 to 6.6% in 2022.¹⁵

The SFM's spreads vary based on Paraná's municipal development performance index (IPDM)¹⁶ levels. As shown in Table 2, the SFM's annual interest rate spread for a municipality within the lowest IPDM group is zero versus 4.25% for one in the highest group. The challenge is to offer affordable rates to municipalities while providing for continued capitalization of the FDU (that is, a rate that covers both its operating costs and inflation) and remaining competitive with its rivals, as we will discuss below.

12. Paranacidade 2023, Paranacidade website, accessed 05 July 2023, https://www.paranacidade.org.br/arquivos/File/ROG/2023/regulamento_operacional_geral_ROG_abril_2023_publicado.pdf

13. SFM priority projects aimed at improving infrastructure and quality of life for the population include: road paving, construction of industrial warehouses, bus terminals, community centers, daycare centers, schools, fire stations, solid waste management, as well as projects for administrative modernization, master plans, implementation of water supply systems, engineering projects, and energy efficiency programs, among others (Source: <https://www.fomento.pr.gov.br/FINANCIAMENTOS-AO-SETOR-PUBLICO>)

14. The monetary committee of Brazil's central bank sets the SELIC rate, much as does the US Federal Reserve sets the "Fed rate".

15. Calculated using the SELIC rate (Banco Central do Brasil, Boletim, Seção mercado financeiro e de capitais) and the and the Índice Nacional de Preços ao Consumidor (INPC) downloaded from Ipeadata on July 10, 2023.

16. The IPDM (Municipal Development Performance Index) is an index that measures the performance of the 399 municipalities in the state of Paraná, Brazil, considering three dimensions: income, employment, and agricultural production; health and education. Its development is based on different administrative statistics provided by public entities. IPDM values range from zero for lowest performance to 1 for the highest level. The data sources for the Index are publicly available official statistics, mostly derived from mandatory administrative records. These extensive databases have an annual periodicity and provide data at the municipal level. The selection of indicators includes important aspects for local development, which allows for joint actions by the three levels of government and the business sector. <https://www.ipardes.pr.gov.br/Pagina/Indice-Ipardes-de-Desempenho-Municipal>

Table 2. SFM: Interest rates: July 2023

Municipal development performance index (IPDM)	Less than 0.6500	From 0.6500 to 0.6999	From 0.7000 to 0.7999	0.8000 or above
SFM's annual interest rate spread	0.0%	3.75%	4.00%	4.25%
Annual index rate	SELIC	SELIC	SELIC	SELIC

Source: <https://www.fomento.pr.gov.br/FINANCIAMENTOS-AO-SETOR-PUBLICO>, Accessed July 6, 2023

The tenor of SFM loans runs up to 10 years, with grace periods from amortization ranging from 12 to 24 months. The tenors vary for different sectors as defined in the project manual (ROG). Since its inception, the FDU has kept grace periods and tenors low (ranging from 5 to 10 years) as incentives to promptly implement projects and free up resources for loans to other municipalities. The FDU can finance up to 100% of the direct cost of the project.

Table 3 shows the results from Fomento Paraná's financial simulator on July 5th of 2023 for Cascavel, a municipality of nearly 300,000 inhabitants, ranked in the highest performance group. As the annual SELIC index rate is 13.75%, and the SFM spread is 4.25%, the municipality's total annual interest rate is 18.58%.¹⁷

At the average SELIC for the 2021/2023 period of 7.25%, the rate would be 11.50%. Amortization is by the constant amortization system (i.e., straight-line amortization) with tenors varying for equipment and vehicles (5 years), basic infrastructure (8 years), and social projects (10 years). The grace period from amortization is higher for social projects at 24 months versus 12 months for the other two projects.

17. Total interest = (1 + SELIC) * (1 + SFM spread)



Table 3. Results from Fomento Paraná's financial simulator: July 2023

▲ SIMULADOR DE FINANCIAMENTOS

Município: **CASCAVEL**

Dados do Município

População	IPDM	PR Recup.	PR Rec. Emerg.	Indexador	Amortização	Spread	Juros Total	Juros Mensal	Capacidade (16% RCL)	1ª Parcela
289.339	0,8085	Não	Decr. calamidade	13,75% SELIC	SAC	4,25% a.a.	18,58% a.a.	1,43% a.m.	R\$249.321.048,05	Setembro 2023

EQUIPAMENTOS E VEÍCULOS

Ocultar

Valor:

Prazo: 60 meses
Carência: 12 meses

INFRAESTRUTURA BÁSICA

Ocultar

Valor:

Prazo: 96 meses
Carência: 12 meses

OBRA SOCIAL

Ocultar

Valor:

Prazo: 120 meses
Carência: 24 meses

Source: <https://www.fomento.pr.gov.br/FINANCIAMENTOS-AO-SETOR-PUBLICO>, Accessed 06 July 2023

2.2.2 The financial performance of the SFM: 2013 to 2017

This analysis covers the period from 2013 to 2017, which includes the last full year before Brazil's Great Recession (2014-2016) and the subsequent year of economic recovery. By examining this period, we can assess how effectively the SFM navigated through this challenging economic downturn.

In 2017, FP shareholder equity (PL/ Patrimônio Líquido) was R\$1.6 billion (US\$489.2 million), of which 86.4% (R\$1.4 billion/ US\$422.9) belonged to the FDU. FP's PL increased by 31.6% in real terms during the period from 2013 to 2017. According to the National Monetary System's regulations, the SFM classifies all loans into nine levels of credit risk ratings. For the required credit risk stress tests for loans to public and private sector customers, the agency downgrades the risk classifications of the loans by two levels.

In 2013, the FDU's shareholder equity (PL) reached almost R\$1.25 billion (US\$392 million), despite persistent inflation in previous years and a lack of political support from some prior state government administrations. As a result of the state's reforms in 2013, the PL of the FDU began to grow, reaching R\$1.35 billion in 2017 (US\$424.3 million). This real growth of 8.0% during the period from 2013 to 2017 (R\$100.4 million) is impressive, given that Brazil experienced a severe recession from 2014 to 2016. This increase in the PL of the FDU and other measures helped increase the overall loans granted to municipalities by 14.6% in real terms during the period from 2013 to 2017.

The financial system regulations have severely limited the FDU's ability to leverage its capital. As a result, the ratio between the FDU's total assets and its PL was just over 1.0, compared to a median of 6.0 for Brazilian banks in 2017. Despite the credit risk of the FDU's municipal loans being nearly zero due to its robust mechanism guarantee, the regulations require this high reserve. Municipal borrowers pledge their state transfers from Value Added Tax (VAT) or the municipal transfer fund (Fundo de Participação dos Municípios/ FPM). In this way, the municipal loan agreements grant the FDU the right to deduct the loan payments from the state government transfers to the municipalities before the municipalities receive them. Furthermore, STN conducts a rigorous review of each new municipal loan application, following the criteria in its detailed manual (STN, 2019).

The income statement of the FDU for the 2013 to 2017 period shows that revenues from municipal loans increased by R\$10.1 million (12.1%) in constant 2017 values, while the return from financial investments decreased slightly due to falling interest rates in Brazil. The real rate of increase in total expenditure was 12.1% during this period (a real annual rate of 2.9%). Paranaidade receives 8% of the amount of new municipal loans to cover their costs, and FP receives 1% of this amount. An advantage of this remuneration system is that it provides an incentive to process new loans effectively and a cap on these expenses. However, a disadvantage of using these fixed percentages is that there is no incentive to reduce spending or increase performance through efficiency improvements.

There was significant demand for municipal loans from the FDU between 2007 to 2017, despite high interest rates, negative macroeconomic trends, and competition from Caixa and BNDES. During this period, the availability of financial resources from the SFM, Caixa, and BNDES was low in comparison with the potential demand from the municipalities of Paraná, estimated at approximately R\$2.7 billion per year for the group of 399 municipalities in Paraná, as described in the Consultation Letter (Paraná, 2017).

The SFM has significant competitive advantages in municipal loans, especially for small municipalities. First, the SFM lends only to the municipalities of Paraná and offers them a wide range of technical assistance. Another advantage is that the SFM usually finances 100% of the total project cost. In this way, it has formed a strong relationship with municipalities over more than three decades.

In conclusion, the SFM, with its ability to lend capital without incurring direct funding costs, has a competitive advantage over other Brazilian institutions like Caixa and BNDES, despite their access to funding with below-market interest rates. The private sector perceives municipal lending as risky, and the costs associated with funding have deterred private financial entities from entering the municipal market. Additionally, private-sector creditors may not have access to guarantees involving transfers to state and federal government municipalities. Therefore, the SFM's unique position allows it to serve as a lender to municipalities effectively.

SFM: CONDITIONS FOR MODERN SUBNATIONAL CREDIT MARKET

In the Table 4, we used the conditions for municipal financial intermediaries in a modern subnational credit market defined in Table 1 to summarize our analysis of the SFM. Overall, the SFM has performed well on most of these conditions. However, it has not yet entered the private credit markets due to the prevailing high and volatile market interest rates, as discussed above. Despite this, the SFM has developed into a strong and resilient financial institution over the past three decades, successfully weathering challenging macroeconomic conditions.

If interest rates stabilize at reasonable levels, the SFM has the necessary institutional structure to engage the private credit markets, as it is creditworthy and capable of generating portfolios of loans to creditworthy municipal borrowers. In the meantime, it continues to provide financing opportunities for municipalities that meet strict creditworthiness requirements using its own capital, loans from national and international development entities, while providing technical assistance, and knowledge management for institutional development.

Table 4. Compliance with the conditions for a municipal financial intermediary that contributes to the development of modern subnational credit markets.

Conditions for a municipal financial intermediary that contributes to the development of modern subnational credit markets	Compliance of Paraná's SFM with the conditions
LEGAL CAPACITY	
Legal structure that provides sufficient autonomy and accountability for accomplishing the objectives of the intermediary	Fomento Paraná is incorporated as a private sector corporation (S.A.), and Paranacidade is a serviço social autônomo (a private sector non-profit). As such, they have more independence than most public sector entities, subject to the laws and regulations for their respective type of entity (e.g., auditing and reporting)
Creditworthiness of the Intermediary: Adequate prudential controls and supervision by the institutions of the national financial system, including asset-liability management (e.g., liquidity policies and matching the duration of assets and liabilities), risk management and stress testing and credible auditing, as well as acceptable credit ratings by reputable firms	Fomento Paraná is part of Brazil's National Financial System. Therefore, it is subject to its laws, regulations, and procedures, including risk stress tests and stringent controls requiring provisioning for almost all municipal loans. The Banco Central supervises Fomento Paraná. The state government's Tribunal de Contas and private auditing firm audit Fomento Paraná. The Tribunal de Contas audits Paranacidade. Both are subject to the oversight of the state executive and legislative branches
DEVELOPED SOURCES OF FUNDING FROM LOANS OR BOND ISSUES	
Private credit markets that are free from moral hazards, such as from implicit government guarantees for municipal loans or bonds	Controls on lending to and borrowing by municipalities, but high market interest rates have mostly inhibited municipal borrowing from private banks and in the capital markets
Adequate regulatory controls on municipal borrowing by state or national governments, especially when access to private credit markets is not possible due to high interest rates or other issues	Tight controls on lending to and borrowing by municipalities by the National Secretary of the Treasury (STN) provide incentives for maintaining fiscal performance up to the levels defined by indicators defined in the regulations. However, private credit markets provide more graduated incentives by providing more favorable terms for higher ratings (e.g., an AAA rating receives more favorable terms than a lower one). The SFM could introduce additional incentives into the eligibility criteria
Ability to borrow from different entities in various markets, using a variety of instruments, and targeting several investor groups	Although, in theory, Fomento Paraná can access private credit markets, most funding has come through Caixa and BNDES due to high market interest rates
Competition with other lenders to provide incentives for improved performance	Competition from the below-market rates of Caixa and BNDES for the FDU loans
Capacity to securitize municipal loans for sale on the credit markets	Fomento Paraná would theoretically be able to securitize its municipal loan portfolio on the credit markets, but market interest rates higher than the SFM would mean a discount
INSTITUTIONAL CAPACITY	
Effective governance for setting overall policies and strategies for attaining them	Governance by the Investment Committee in accordance with state law and its bylaws
Sufficient administrative capacity for efficient and effective policy implementation	Paranacidade and Fomento Paraná are well staffed
Mechanisms for assessing and lending to creditworthy municipalities, thereby developing a portfolio of municipal loans. Greater access to credit provides incentives for the maintenance of creditworthiness and improved fiscal performance	The SFM applies its eligibility criteria as defined in its operational manual (ROG) for all loans and provides technical assistance in obtaining approval of the STN for borrowing
Ability to assist the institutional development for municipal clients (especially the smaller ones), including the financing of works, equipment, and consulting for: Municipal financial management (e.g., management information systems and real estate cadasters), infrastructure planning, and project design	The SFM has financed a significant amount of institutional development, especially for smaller municipalities, as shown above
KNOWLEDGE AND SKILLS	
Knowledge management and dissemination of the relevant national and international information through courses, conferences, workshops, and consultations	The SFM has identified best practices and provided numerous courses, conferences, and workshops along with direct technical assistance on such topics as multiyear investment plans, procurement procedures, and project evaluation

2.2.3 Suggestions for changes in Paraná's SFM

As highlighted in the previous section, Paraná's SFM serves as a crucial initial step towards the establishment of modern subnational credit markets. With stable interest rates, it has the potential to leverage its institutional framework to access private credit markets and further enhance its role in supporting municipalities' financing needs. To provide additional incentives for the improved financial performance of Paraná's municipalities, the SFM can implement several changes. These include:

Improved Creditworthiness: The SFM can offer more favorable loan conditions to more creditworthy municipalities, such as lower interest rates, longer tenors and grace periods, higher priority in loan processing, and a higher percentage of total project cost financed. This would incentivize municipalities to maintain fiscal discipline and strengthen their creditworthiness, as is the case for municipalities with higher credit ratings in modern credit markets. One option for assessing creditworthiness is using the national government's Payment Capacity Rating (CAPAG)¹⁸, which rates states and municipalities based on indicators like indebtedness, current savings, and liquidity.

Multiyear Plans for Infrastructure Investments: The SFM can finance multiyear investment plans that cover all sectors over an extended period if municipal financial performance remains within the limits of creditworthiness indicators. One option for this would be to adapt the existing municipal Plano Plurianual to serve this purpose. Financing the investment plan rather than individual projects would ensure a comprehensive approach and provide stability for long-term infrastructure development.

Value Capture Instruments: The SFM can encourage the use of value capture instruments, as enabled by the Statute of the City, to finance infrastructure investments. Value capture involves capturing the real estate value generated by public interventions. The SFM can offer more favorable loan conditions for projects that utilize value capture instruments, such as betterment levies. This would incentivize municipalities to implement these instruments and generate additional revenue for sustainable development.

Technical Assistance and Knowledge Management: The SFM can continue providing technical assistance and knowledge management to municipalities. This includes supporting cadaster modernization, offering courses, and developing manuals on betterment levies and other financial mechanisms. By enhancing municipalities' capacity and knowledge, the SFM can contribute to improved financial performance and effective implementation of infrastructure projects.

Empirical evidence¹⁹ suggests that Paraná's municipalities have exhibited better fiscal performance than other Brazilian municipalities, particularly in land-based revenues, possibly due to the incentives and technical assistance provided by the SFM. Efforts to increase the use of betterment levies, cost recovery requirements, and technical support have contributed to high collection rates in Paraná.

In conclusion, the SFM can provide additional incentives for municipalities to improve their financial performance by implementing changes such as incentives for improved creditworthiness, multiyear plans for infrastructure investments, and the use of value capture instruments. Combined with technical assistance and knowledge management, these measures can foster sustainable municipal development, stronger financial institutions, and increased private sector participation in infrastructure provision and financing. The SFM's experience provides valuable lessons for future projects promoting municipal development and fiscal effort.

18. <https://www.tesourotransparente.gov.br/temas/estados-e-municipios/capacidade-de-pagamento-capag>

19. See Pereira et al. 2013 and Vetter and Vetter 2019.

However, significant challenges remain at the national level for inducing greater private sector participation in modern municipal credit markets in Brazil. The challenges that Peterson enumerated in 2003 remain: "Reforms are needed to simplify the borrowing process, streamline regulatory frameworks, and instill confidence in private lenders. By implementing these reforms, Brazil can overcome the obstacles hindering the local financing system, empowering municipalities to effectively invest in their development and accelerate overall economic growth." For example, regulatory changes could allow securitization of SFM loans on the private market when interest rates and other conditions permit, thereby transferring credit risk to the private sector and allowing additional SFM lending.

Future studies at the national level could analyze the desirability and viability SFM-type funds in other states. Would such funds contribute to the national economic objectives by assisting in developing modern subnational credit markets. How creditworthy are the municipalities of different states? What are the correlations between municipal creditworthiness and socioeconomic indicators? Could the Agências de Fomentos in the other states be used as the executing agencies for SFM-type efforts?



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