

**THE ROLE OF PRIVATE SUBNATIONAL CREDIT MARKETS
IN MAKING LAND DEVELOPMENT MORE AFFORDABLE**

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Higher interest rates and shorter tenors or even lack of financing altogether mean that less urban infrastructure can be financed within the budget constraints of the national and subnational public sectors. In short, lack of adequate financing means less land will be provided with infrastructure (i.e., developed) at a higher unit cost: Less affordable land development.

The main argument of this paper is that: Within an adequate legal and regulatory framework and sound macroeconomic policies, **modern private subnational credit markets** can make urban infrastructure and, therefore, land more affordable by increasing the total volume of credit available for financing urban infrastructure and improving terms (i.e., lower rates and longer tenors). Such credit markets can also:

- Provide strong incentives for subnationals to improve their fiscal performance and efficiency, as improved creditworthiness would increase their access to financing on favorable terms.
- Help strengthen and deepen financial markets by providing investments of high credit quality.

These markets can also provide financing for programs for lower income families, if the local authorities so wish.

In summary, this paper will provide an idea of the potential of these private subnational credit markets for the following:

- Providing a high volume of infrastructure financing on favorable terms that can lower the costs of land development
- Creating incentives for subnationals to improved their fiscal performance and efficiency
- Helping to develop national financial markets

The paper discusses these three dimensions for the following sections:

I. The US and Europe. How well do these subnational credit markets work with regard to these three dimensions?

II. Mexico: Why and how did the government introduce market based controls on subnational borrowing?

III. Brazil: What could be done in Brazil?

¹ Parts of this paper are from a report prepared for the Inter-American Development Bank (IADB): **Brazil: Analysis of Alternatives for Greater Private Sector Participation in Financing State and Municipal Investment.** As the report has not yet been reviewed by IADB, what appears here reflects solely my views.

Section IV discusses some basic measures that can be taken to assure that these lower income families actually receive the benefits from these investments.

I. PRIVATE SUBNATIONAL CREDIT MARKETS IN THE US AND EUROPE

The following benefits from private subnational credit markets in the US and Europe are significant:

- High volume of credit for subnationals at attractive interest rates and long tenors, while helping to develop financial markets by providing instruments of high credit quality.
- Strong incentives for improving subnational fiscal performance and efficiency.

The highly developed financial markets in the US and Europe provide a huge volume of annual investment for subnational governments and infrastructure at relatively low interest rates and long tenors. The structures of subnational credit markets in the US and Europe have evolved differently. As interest on subnational bonds is exempt from federal income taxes in the US, most subnational financing has been done through the capital markets. However, some public financial intermediaries have emerged more recently in the US to address some weaknesses in bond financing, especially for smaller municipalities.² In Europe, many national governments initially created specialized public banks and funds to finance their subnationals. In more recent years, some of these specialized entities have been privatized and some of the larger European subnationals have begun to issue bonds.

US SUBNATIONAL BOND MARKET

Chart 1 and Table 1 show the impressive volume of activity in the US subnational bond market. Over the 1993 – 2003 period, US subnationals issued an average of nearly US\$300 billion of short-and long-term bonds annually for a total of US\$3.5 trillion for the period.

² For an interesting overview of these markets, see: Mila Freire and John Petersen, **Subnational Capital Markets in Developing Countries**. World Bank and Oxford University Press, 2004.

Chart 1

US: Short- and Long-Term Municipal Bond Issuance: 1993-2003
Billions US\$

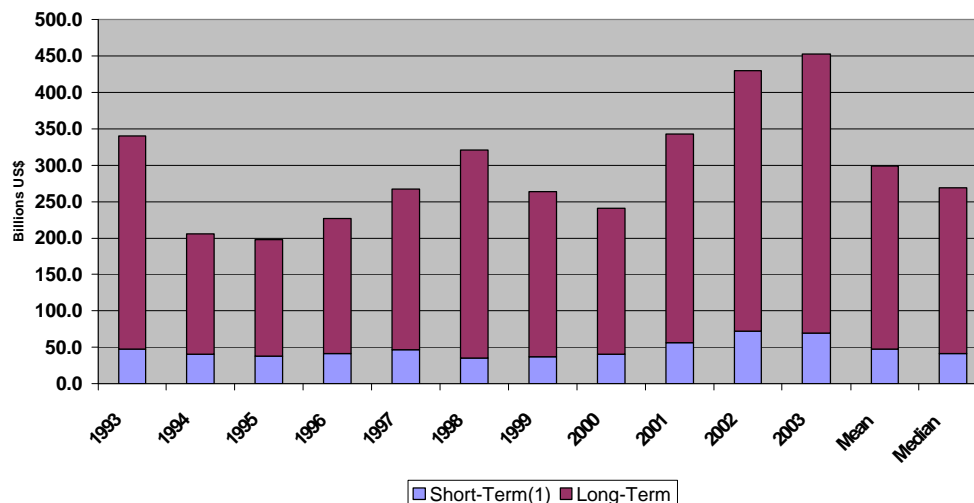


Table 1

US: Short- and Long-Term Municipal Bond Issuance: 1993-2004

Year	(Billions US\$)		Total
	Short-Term ⁽¹⁾	Long-Term	
1993	47.5	292.5	340.0
1994	40.3	165.1	205.4
1995	38.3	159.9	198.3
1996	41.7	185.0	226.7
1997	46.4	220.5	266.9
1998	34.7	286.2	320.9
1999	36.6	227.4	264.0
2000	41.0	200.2	241.2
2001	56.2	286.6	342.8
2002	72.4	357.7	430.1
2003	69.8	382.9	452.7
Mean	47.7	251.3	299.0
Median	41.7	227.4	266.9
Total	524.9	2,953.9	3,500.8
2004*	<u>21.9</u>	<u>189.9</u>	<u>211.8</u>

*As of June 30, 2004

⁽¹⁾Short-term refers to municipal securities with maturities of 13 months or less.

Source: Thomson Financial Securities Data

Table 2 shows two things about the US municipal bond market: low interest rates for even long maturities and a high potential impact for credit enhancement as shown by the difference in yields for AAA rated bonds versus A or BBB rated.³ These rates are for 2000, when the average annual US Treasury rate was 5.8% (the highest of the 1993-2003 period). With the US Treasury rate at only 1.0% in 2003, subnational rates were much lower.

Table 2
Impact of Insured Municipal
General Obligation Bonds: 2000

Maturity (years)	Uninsured Bond Yields		Yield Difference between AAA/BBB c = b - a
	AAA	BBB	
Column	a	b	
5	4.80	5.29	0.49
10	5.07	5.65	0.58
20	5.71	6.29	0.58
30	5.82	6.39	0.57

Clearly, these lower rates are due in part to the exemption of subnational bonds from the US federal income tax. Some criticize the tax efficiency of the exemption, as the tax loss to the federal government is significantly higher than the benefit received by the subnationals. However, the private market provides a strong incentive for good fiscal performance, as a good credit rating significantly lowers interest rates. Subnationals with very low ratings may lose access to the bond market altogether, as in the cases of New York City, Philadelphia, and Washington, D.C. In these cases, legislative bodies turned financial control over to autonomous boards in order to return to the capital markets.

EUROPEAN SUBNATIONAL RELATIONSHIP BANKING

As European countries do not generally grant tax exemption to interest on subnational bonds, financial intermediaries make economic sense in many cases, especially for smaller credits. A number of European countries have had public municipal development funds, including France, Belgium, and the Netherlands. For example, in the 1980's, the French government created Credit Local de France (CLF) as a publicly owned fund to support French decentralization. CLF is an example of a subnational development fund that successfully privatized itself, as it evolved from a public subnational development fund into a fully private, profitable, financial institution during the last two decades of the 20th century. It is an interesting example for how public financing institutions can naturally evolve into private institutions.

³ This table is from an excellent report on US credit enhancement: California Debt and Investment Advisory Commission, **Bond Insurance as a Form of Credit Enhancement in California's Municipal Bond Market**, CDIAC 02-1, January 2002.

According to the World Bank report on financing Brazil's municipal investments specialized subnational "banks in Western Europe engage in 'relationship banking' (Peterson, 1997) in that they specialize in building long-term relationships with their clients."⁴

For example, Credit Local de France (CLF) explicitly tries to be a "reliable, permanent and long-term partner to local governments, independently of their size." Its main business to help develop its clients' activities are not limited to lending, but include other services, such as services for local elected officials and decision makers, including: decision making tools, budget analysis, financial information, and assistance for special problems, general information and financial data.⁵

In this way, relationship banks "develop their clients" and:

Can obtain resources, assess the viability of the subnational credit markets for public and project financing, develop a strategy for market development; assess creditworthiness; evaluate the project's technical, financial, and environmental viability, as well as credit risk with and without guarantees; price the loans based on funding costs; prepare the term sheets and present bids to borrowers; negotiate the loan agreement; and monitor subnational government compliance with loan agreement covenants.⁶

Europe's private subnational credit markets are mobilizing great volumes of credit for subnational investment. For example, in 2003, Dexia's total new public/ structured finance international credits totaled 40.3 billion Euros, and its total portfolio of 184 billion Euros of such credits generated net operating income before taxes of 1.1 billion Euros. These results do not include Dexia's monoline insurance company, FSA, whose net par of new originations was US\$64.4 billion in 2003 and net par outstanding was US\$290.0 billion.

CONVERGENCE OF THE SUBNATIONAL CREDIT MARKETS OF THE US AND EUROPE

Over the years, the US and European markets began to converge:

- The larger, more creditworthy European subnationals have begun to issue bonds.
- Dexia Credit Local and other European banks began to enter the US credit enhancement market. For example, Dexia Credit Local began to enhance US subnational bonds with letters of credit and liquidity facilities, and then purchased FSA, one of the US's larger monoline bond insurance companies.
- The US began to develop its own financial intermediaries for subnational governments, including state revolving and guarantee funds.

⁴ World Bank, **Brazil: Financing Municipal Investment: Issues and Options**, Report No. 20313-BR, Brazil Country Management Unit, Finance, Private Sector and Infrastructure Management Unit, Latin America and the Caribbean Region, (World Bank: Washington, DC), April 20, 2001, p. 75.

⁵ Ibid.

⁶ Ibid.

Clearly, modern subnational credit markets can offer substantial volumes of credit at attractive interest rates and tenors, while providing strong incentives for subnational governments to maintain their creditworthiness. Just to give an idea of the relative size of these markets in developed countries, Inter-American Development Bank (IADB) lent a total of US\$6.8 billion in 2003 for all sectors in all its borrowing countries. One of the reasons that IADB policy strategies emphasize the importance of developing private credit markets is their potential to mobilize great volumes of credit for subnational investment.

These markets finance both:

- Subnational governments per se, and
- Private sector suppliers of infrastructure and services to subnationals (that it calls structured finance).

As we shall see later, this private sector financing of the public sector is what Fitch Ratings calls the other side of PPP.

NEW GENERATION OF PUBLIC-PRIVATE PARTNERSHIPS

Based on its review of infrastructure financing in recent years, Fitch Ratings argues that “The scope of global demographic, public health, and safety needs, as well as economic development goals, translates into infrastructure requirements far in excess of currently available financing resources.”⁷ Recognition of this funding gap has resulted in “a nearly universal acceptance that the private sector can and should play a larger role in the financing of infrastructure in partnership with the public sector, whether actively as a project sponsor or passively as an institutional bond investor. **The latter role carries greater promise for enhancing the supply of capital for infrastructure** [*Emphasis added*], provided that structural elements meaningfully enhance the credit quality of proposed debt instruments so as to engage a country’s domestic debt market.” Thus, in this new generation of Private-Public Partnerships (PPP), private sector financing of the public sector is increasingly important and the private sector’s “role is less for equity and more for their expertise in designing, constructing, and operating projects.”⁸

Local governments in partnership with development banks and international aid agencies are slowly discovering that, by pooling project credit risk through infrastructure banks and adding layers of credit enhancement (initial payment of project debt by local user fees or taxes, followed by the ability to intercept intergovernmental aid, reserve funds, and partial credit risk guarantees from external sources), they can engage domestic private capital.

By providing an enhancement role with its capital, this public sector coalition will be able to leverage its funds much further, while domestic investors will benefit from the gradual diversification of their investment portfolios. The remaining construction conglomerates

⁷ FitchRatings, Public-Private Partnerships: The Next Generation of Infrastructure Finance. International Public Finance, January 14, 2003, www.fitchratings.com

⁸ Ibid.

are still on the scene, but their role is less for equity and more for their expertise in designing, constructing, and operating projects.

In other words, in Public Private Partnerships (PPP), the private sector can participate by:

- Providing management skill or equity.
- Financing state or municipal infrastructure investments being done by public or private entities.

Broadening and increasing the efficiency of subnational credit markets so that they can lend to the more creditworthy of the subnational governments and their enterprises could provide incentives for greater reform and efficiency, including PPP on the production side. To gain access to financing, subnational governments would have to improve their creditworthiness by such means as:

- Improving their fiscal performance.
- Increasing their transparency by adapting to private sector lending reporting requirements and legal instruments (e.g., covenants, reserve accounts, etc.). This could boost demand for technical assistance available through a number of different programs.
- Seeking greater private sector participation via such options as concessions, strategic investors, BOTs, management contracts, etc. Although the focus of the study will be on increased private sector debt financing of subnational governments and private sector partners (e.g., concessionaires) rather than on private equity participation, more efficient private financial credit markets can provide incentives for greater private sector participation.

In fact, PPP blurs the distinction between public/private sector risk, as there is always public sector risk in PPPs. For this reason, in Brazil's debate on PPP, there was much emphasis on the issues of:

- A guarantee fund to cover risk of noncompliance by the public sector.
- Impact of PPP on public sector indebtedness and the Fiscal Responsibility Law.
- Public procurement procedures for private sector partners.

As visualized by Brazil's current government, PPP focuses more on the private sector production of services.⁹

Emphasis in this report will be on private sector financing of subnationals (as this role has received much less attention) with the understanding that this can contribute to greater private sector participation in provision of expertise in designing, constructing, and operating projects, as well as equity. Greater private sector financing of the public sector would provide increased incentives for subnationals to engage in PPP and other forms of private sector participation.

⁹ Demian Fiocca, **As parcerias público-privadas na estratégia econômica brasileira**, II SEMINÁRIO INTERNACIONAL DE FUNDOS DE PENSÃO, Rio de Janeiro, 07 de julho de 2004, a PowerPoint from web site of the Ministério de Planejamento, Orçamento e Gestão.

II. MEXICO'S EXPERIENCE IN DEVELOPING PRIVATE SUBNATIONAL CREDIT MARKETS

In 1999, Mexican government wanted to address the problem of continual subnational bailouts by the national government by using market based controls in conjunction with some simple government controls.

IMPORTANCE OF REFORM SYNERGY

In Mexico, a number of interrelated reforms are paving the way for the emergence of a modern private subnational credit markets:

- Decentralization.
- Pension.
- Banking regulation.
- Capital market regulation.

Synergy among the reforms has been most important. First, we will look at the reforms that triggered this development; and then move on to discuss very briefly evolution of the markets *per se*.

Decentralization reforms in late 1990s set the stage for this by making the national/ subnational transfer system more transparent and predictable.¹⁰ In 1999, Mexican government wanted to address the problem of subnational bailouts by the national government. Decentralization reforms in late 1990s set the stage for this by making the national/ subnational transfer system more transparent and predictable.¹¹ A principal cause of these bailouts was the use of national/subnational automatic transfers (*mandatos*) as loan guarantees in a way that made loans to subnationals virtually risk free. This generated a moral hazard for banks that led to over borrowing by subnationals, and then to bailouts on default. National government controls on subnational borrowing were ineffective.

DECENTRALIZATION ADJUSTMENT LOAN

To address these issues, the Mexican Government asked for assistance in developing a market-based system. This led to the World Bank's Decentralization Adjustment Loan of about US\$600 million. Some key reforms were:

- Elimination of the *mandatos*.
- The use of external credit ratings to set risk weightings for all bank lending to subnationals, as proposed in the initial drafts of Basel II Accord.

¹⁰ For an interesting discussion of these reforms, see: Marcelo Giugale and Steven Webb, **Achievements and Challenges of Fiscal Decentralization: Lessons from Mexico** (Washington: World Bank, 2000).

¹¹ Ibid.

In August 2004 the national bank regulatory authority enacted a new regulation for commercial and development banks that fine tunes the provisioning rules for loans granted to subnational entities.¹²

WHAT THE RATINGS REVEALED

Although the nearly universal view among national government officials and academics was that there were virtually no creditworthy states or municipalities in Mexico, the credit ratings revealed that there are many creditworthy borrowers at the subnational level:

- Of 30 out of 31 states are rated by Standard and Poor's, Moody's or FitchRatings, 29 are above investment grade on the local scale.
- Of a total of 75 states and municipalities rated by Standard and Poor's, 50 received a rating of A or above on the local scale.

Ratings have also created a healthy competition among states and municipalities, as mayors and governors pride themselves on having better ratings than their peers.

FACTORS INFLUENCING SUPPLY OF SUBNATIONAL CREDIT

Demand for local currency, fixed-income paper is growing rapidly in Mexico's capital markets due to:

- Macroeconomic stability.
- Mutual funds.
- Pension reform of 1997.

The 1997 pension reform created the private managers of mandatory pension funds: *Afores*. In five years, these *Afores* accumulated assets in excess of 8% of GDP (US\$34 billion as of April 2003) and this is expected to reach 20% of GDP by 2015.

LINKING THE SUPPLY AND DEMAND FOR SUBNATIONAL CREDIT

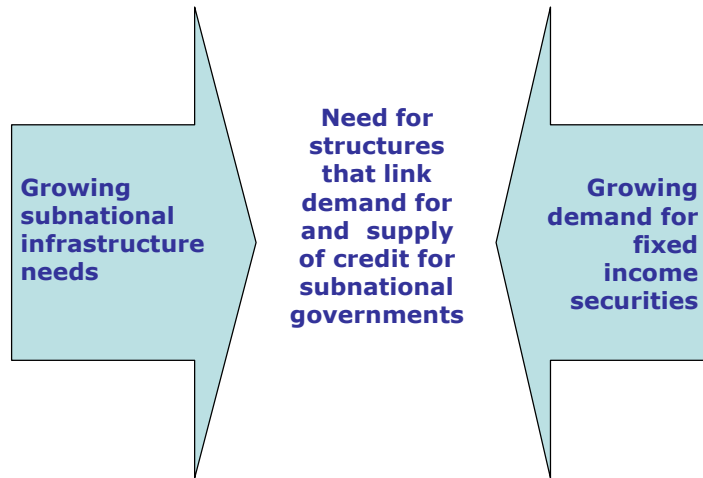
The subnational bond market has emerged to link supply and demand of subnational credit, as shown in Chart 2. Capital market regulation changed to permit issuance of subnational bonds. From 2001 to 9/2003, Mexican state and municipal governments issued 22 bonds for a total amount of over US\$2.0 billion.

Most would agree that these reforms have set the stage for future growth for Mexico's subnational credit market.

¹² Maria Tapia and Juan Pablo De Mollein, **Mexico's Subnational Securitization Market Entering Second Stage of Development**, Standard and Poor's, November 3, 2004.

Chart 2

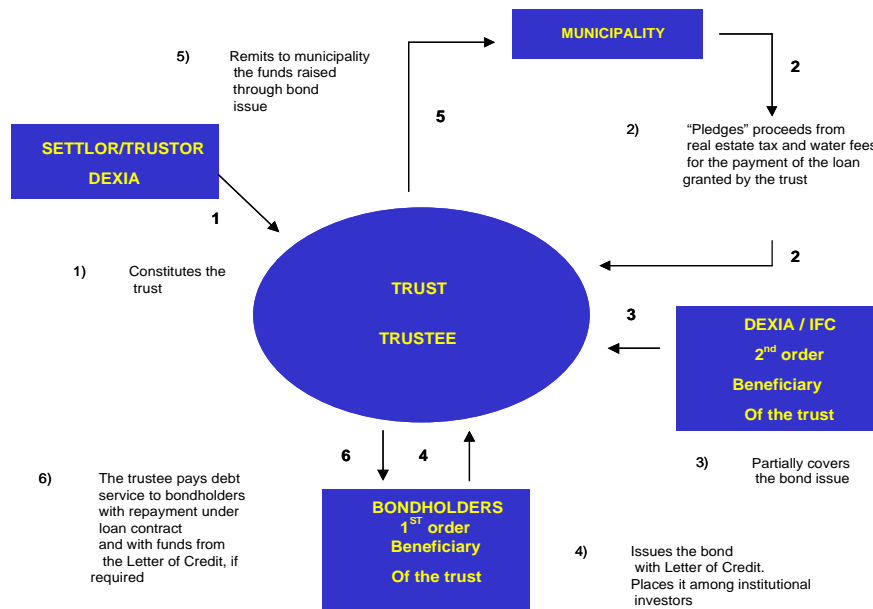
Mexico: Linking Supply and Demand for Credit



As shown in Box 1 and Chart 3, the enhancement of a secured bond issue of about US\$9 million by the Municipality of Tlalnepantla by Dexia Credit Local and IFC’s municipal fund is an innovative operation in terms of both the structure (payment guarantee is water fees) and enhancement. Both Standard and Poor’s and Moody’s rated it AAA (Mexican scale).

Chart 3

Mexico: Enhancement Structure



Box 1
CREDIT ENHANCEMENT STRUCTURE FOR A MEXICAN MUNICIPALITY

The structure:

1. Dexia Credit Local (as settlor or trustor), sets up an irrevocable trust at a bank. The beneficiaries are, in order of priority:
 - The bondholders;
 - Dexia Credit Local, in the event that there is a draw under the letter of credit;
 - The municipality and the municipal water company for any remaining amounts.
2. The trustee, the municipality and the municipal water company as joint obligor close a loan agreement. The credit constitutes a general obligation of the municipality and of the water company. The municipality and the municipal water company agree to use as source of repayment the property tax revenues and water fees and pledge the proceeds of these revenues to the trust in order to guarantee their payment obligations. All the rights arising from the credit agreement are transferred to the trust and become part of the trust assets.
3. Dexia Credit Local grants to the trustee, for the benefit of the bondholders, a letter of credit, whereby it guarantees to the bondholders the regularly scheduled payments on the bond. The rights to the letter of credit are also transferred to the trust and become assets of the trust.

The letter of credit has the following characteristics:

- The letter of credit is issued to trustee for the benefit of the bondholders.
 - The letter of credit is triggered by a credit event that is the lack of funds in the trust, which, in all cases, results from a default of the municipality and the water company under the loan agreement passed with the trust.
 - The letter of credit is irrevocable and unconditional.
 - The fee is paid up front.
 - The letter of credit is valid for the entire life of the bond.
 - The letter of credit only covers regularly scheduled payment of interest and principal to the bondholders.
 - The letter of credit is capped to the US\$ equivalent, at closing date, of the amount issued in Mexican pesos, net of the reserve account.
 - The interest rate on the funds drawn is the higher of the 2 following formula: penalty rate under the bond issue and Libor rate + spread + 200 basis points.
 - The applicable law is NY law.
4. The trustee issues the bonds and remits to the municipality and to the water company the funds raised through the issue, net of fees, expenses and of the reserve account.
 5. The trustee pays the debt service to the bondholders with the payments made by the municipality pursuant to the loan agreement, and with the funds available under the letter of credit, in the event that there is a shortage of funds in the trust.

The IADB municipal development project financed technical assistance improved performance of Tlalnepantla's water company.¹³ The municipality's participation in the municipal project also provided additional incentives for improved municipal performance, as the loan's the interest rate would rise if the municipality's credit rating drops. This clearly demonstrates potential synergy between multilateral subnational investment and adjustment projects

¹³ Programa de Reforma Estatal y Municipal (Programa ME-0208).

SUMMARY: REFORMS PAVED WAY FOR MODERN PRIVATE SUBNATIONAL CREDIT MARKETS

In summary, reform synergy paved the way for the emergence of a modern subnational credit market in Mexico:

- Decentralization =
 - More predictable and transparent transfer system.
 - World Bank adjustment loan conditions eliminated *mandatos*.
- Bank regulation = The World Bank loan linked risk weightings on subnational bank loans to external credit ratings.
- Pension reform = Set up private pension funds.
- Capital market regulation = Gave permission to issue subnational bonds.

III. COULD PRIVATE SUBNATIONAL CREDIT MARKETS BE DEVELOPED IN BRAZIL?

Could modern private subnational credit markets would provide added incentives for improved subnational fiscal performance and help reduce the current regulatory burden? A World Bank review of Brazil's fiscal federalism argued that: "Market based lending would provide additional incentives for prudent fiscal behavior, while easing the burden of regulation."¹⁴ That **about 2,300 of the mayors** leaving office in 2004 could be **subject to penalties under the current legislation**, shows the potential size of this regulatory burden. The first part of this section asks: Has Brazil done the reforms necessary to introduce market based controls of subnational borrowing? The second part asks: What alternative structures could be implemented in these markets?

BRAZIL'S REFORMS

Brazil's reforms (especially those of the last 5 years) have established a legal and regulatory framework that would be adequate to support development of modern subnational credit markets with some relatively minor adjustments that would enable the most creditworthy of subnationals to borrow. Brazil's reforms have:¹⁵

- Made the national/subnational transfer system more transparent and predictable.
- Introduced strict controls on lending to or borrowing by subnationals.

¹⁴ William Dillinger, **Brazil: Issues in Fiscal Federalism**, World Bank Report No. 22523-BR, June 4, 2002, p. ii.. See: http://www-wds.worldbank.org/servlet/WDS_IBank_Servlet?pcont=details&eid=000094946_02061904004610,

¹⁵ For a detailed review of these reforms, see: Vetter, Brazil, **ibid.**, **Chapter II**.

- Increased the transparency of subnational accounts by imposing uniform budgeting categories and also collecting and publishing subnational financial data.
- Reformed the financial system by eliminating state banks and strengthening prudential regulations.
- Restructured CAIXA (Caixa Econômica Federal).
- Used BNDES (Banco Nacional de Desenvolvimento Econômico e Social) to finance greater private sector participation in infrastructure provision and modernize subnational administration.
- Transformed municipal development funds into development agencies.
- Stimulated the development of domestic capital markets by strengthening the regulatory framework and creating new types of investment funds.

A remaining weakness is the lack of an adequate regulatory framework for the water sector.

These reforms have significantly:

- Reduced the risk of irresponsible borrowing by subnationals.
- Augmented the potential supply of resources for financing their infrastructure investments, especially by institutional investors in the capital markets.
- Increased the number of creditworthy subnationals.

The regulations would have to be adjusted to allow the most creditworthy subnationals to borrow.

AUGMENTED POTENTIAL FINANCING BY INSTITUTIONAL INVESTORS

Brazil's institutional investors represent an enormous potential supply of financing for subnationals and private sector suppliers of services and infrastructure to them. As shown in Table 3, pension funds and insurance companies held total investments of US\$85.4 billion in November 2003/January 2004.

Table 3
Total Investments of Institutional Investors on November 2003/January 2004¹⁶

Institutional Investors	Total Investments (Billions of US\$)¹⁷
Mutual Funds	186.4
Private Pension Funds	69.4
Insurance Companies	16.0

Pension funds have indicated a significant appetite for infrastructure investments.¹⁸ One of the largest funds, Petros (Fund of Petrobras) said that it would invest up to R\$2.5 billion infrastructure investments.

INCREASED THE NUMBER OF CREDITWORTHY SUBNATIONALS

With 2003 financial data, we ranked 491 municipalities with 50,000 or more inhabitants in accord with four indicators of financial performance. Table 4 shows the results for the 122 municipalities in the top quartile show a high level of creditworthiness. For example, the mean of Net Operating Balance after Debt Service/ Current Revenue was 16.5% and that of Debt Service/ Current Revenue was only 2.1%.

Table 4
**Preliminary Ranking of Municipalities with 50,000+
Inhabitants with 2003 Financial Data:
Results for Top Quartile**

Financial Indicators	Value
Debt Service/ Current Revenue	2.1%
Net Operating Balance After Debt Service/ Current Revenue	16.5%
Salaries/ Current Revenue	44.2%

Source: Original data from: Secretaria do Tesouro Nacional:
http://www.tesouro.fazenda.gov.br/estados_municipios/index.asp

¹⁶ CAIXA, Política de Financiamento para a Área de Desenvolvimento Urbano da Caixa Econômica Federal, Abril de 2004. Prepared for CAIXA by TC/BR, TcDI, and FIA.

¹⁷ Exchange rate: 1US\$ = 3.0 R\$. There is some double counting in the total, as the pension funds and insurance companies invest in the mutual investment funds.

¹⁸ “Fundos de pensão vão investir mais,” Valor Econômico, 12/21/2004, edição nº 1162.

POTENTIAL ALTERNATIVES FOR BRAZIL'S PRIVATE SUBNATIONAL CREDIT MARKETS?

Alternatives for Brazil must deal with the twin challenges of high and volatile interest and exchange rates.

- **High interest rates.** The Overnight/SELIC rate is similar to the “Fed Rate” in the US. Not only is the current annualized SELIC rate of over 18.75% high, but the mean for the 9/1999 to 9/2004 period was 18.9%.
- **Volatility of foreign exchange rates.** Since devaluing in 1999, the R\$/US\$ exchange rate has also been volatile, making borrowing in foreign currency expensive even at low US\$ interest rates. For example, for Brazil, the annual internal rate of return of a US\$ loan taken at Libor + 50 basis points in January 1999 would be 35% in Reais versus only 5.6% in US dollars in December 2002 due to the devaluation of the Real. Obviously, the objective should be to reduce this risk as much as possible by increasing the opportunities to borrow in local currency by developing the local capital markets.

Furthermore, ways must be found to provide longer term financing at rates that are more accessible without crowding out the private credit market.

A TWO-TRACK STRATEGY FOR DEALING WITH HIGH INTEREST RATES AND VOLATILE EXCHANGE RATES

Clearly, there are few projects with a financial rate of return greater than Brazil's prevailing interest rates. However, there are sources of funding with below market rates, such as those administered by the CAIXA, BNDES, and Municipal Development Funds (MDFs), and multilateral lending. In the past, lending at below market rates by these different entities has often inhibited the development of the private subnational credit markets.

One initial strategy would be to lend these below-market rate resources through the private market. In other words, these resources would be used to fund operations in which the private sector receives a spread to take the credit risk. Thus, there could be two parallel tracks that could begin simultaneously:

- **Track 1:** In Track 1, funding would come from CAIXA, BNDES, and multilateral entities, but private entities would take the risk. In this way, lending would go through the private subnational credit markets, rather than compete against them. In this manner, private sector entities (including the institutional investors) would learn how to evaluate and manage subnational credit risk.
- **Track 2.** As the decline in overall interest rates make subnational lending attractive to institutional lenders such as pension and investment funds, and insurance companies, they could begin to fund these efforts.

Initially, one would expect Track 1 to dominate, but with some startup activity with Track 2. However, as the interest rates decline, Track 2 activity would begin to accelerate. The following alternatives describe in detail how this might be accomplished.

TRACK 1 ALTERNATIVES FOR LENDING THROUGH THE PRIVATE MARKET RATHER THAN COMPETING WITH IT

To deal with the limit of 45% of net equity for public sector investment, CAIXA developed a structure in which it lends FGTS funds through private sector banks. FGTS (Worker's Severance Indemnity Fund) receives 8% of the salaries of all of the workers in Brazil's formal sector (i.e., those with signed work cards). Money goes to individual accounts on which participants can draw in case of being fired, to buy housing, etc. The TR (Tasa Referential) rate used to adjust FGTS accounts and lending is an administered rate that has run considerably below market in recent years.

In this structure, a private bank acts as an FGTS/Agent. As shown for a loan to a water company in Chart 4, CAIXA as FGTS Administrator onlends money to the private FGTS/Agent. The private FGTS Agent, in turn, loans the money to the water company, pledging its water tariff revenues as security. Lending goes through the private subnational credit market, rather than to compete directly with them.

This structure has been approved by CAIXA's management and pertinent regulatory bodies

As it is the private financial agent that assumes the risk of nonpayment on the bonds by the water companies, CAIXA's risk is, of course, the private financial institution rather than the water company. The CAIXA will act as collection agent in the transactions in part because CAIXA branches and lottery posts receive a large portion of water tariffs. A number of private sector banks are willing to act as the private FGTS Agent, including Unibanco, Itau, and Bradesco.

The total interest rate on these operations is calculated as follows:

$$\text{Total interest rate} = \text{TR} + \text{FGTS spread} + \text{CAIXA Spread} + \text{Risk Spread}$$

Where:

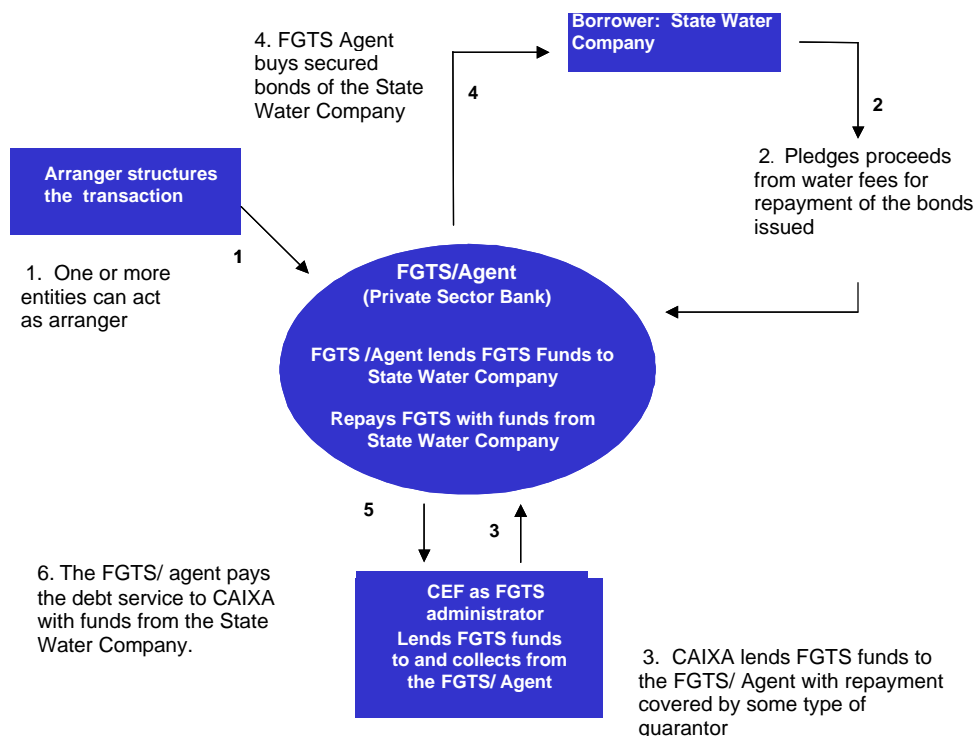
TR = Reference rate

FGTS spread = 6.5% for sewerage or 8.0% for water

CAIXA Spread = depends on servicing costs

Risk Spread = Based on creditworthiness to the financial institution taking the risk

Chart 4
CAIXA Structure with Private FGTS/ Agent



Participating banks charge a Risk Spread based on their perception of the risk that has ranged from about 1.5% to 3.5%. Tenors would be around 10 years. Even after adding this FGTS spread, the risk premium, and a supervision fees to the TR, the total annual rate is on average less is significantly less than the market rates. CAIXA can lend FGTS funds only for investments in water and sewerage, or social housing, but not for debt restructuring or current expenditures.

Could multilaterals fund Track 1 operations in reais? As seen above, one objective should be to reduce this currency risk as much as possible by increasing the opportunities to borrow in local currency by developing the local capital markets. On December 7 2004, IADB issued its first inflation-linked bond denominated in Brazilian currency. The issue was for 200 million reais (approximately \$73,000,000) maturing on Dec. 8, 2009. The issue will pay a coupon of 6.26 percent. The principal will be adjusted to inflation. Given the difficulty that subnationals have in dealing with exchange rate risk, wouldn't it make more sense to lend the proceeds in Reais in Brazil, rather than swapping them into U.S. dollars as was done by the IADB?

STRUCTURES WITH A GUARANTOR

Structures with a guarantor could provide an efficient way to spread the risk and to bring in other potential partners, including foreign financial institutions. For example, domestic or foreign banks or other financial institutions could provide the letters of credit or insurance in which they agree to pay the creditor, if the debtor fails to do so.

The guarantees can also cover only specified risks (i.e., partial risk coverage), such as regulatory or breach of contract risks. In effect, as letters of credit or other guarantees "rent" the higher ratings of the financial institution to the bond issuers, they can:

- Reduce borrowing costs
- Achieve broader marketability both domestically and across borders
- Improve returns on equity
- Achieve better matched funding
- Manage risk more effectively
- Respond to new regulatory capital requirements

These guarantees can provide virtually 100% coverage of the debt service payments (i.e., full wrap) or partial coverage of these payments (i.e., partial credit coverage). First loss coverage (e.g., first 10% of loss) is one kind of partial coverage. On the Santiago/Valparaiso Toll Road financing, Dexia agreed to take the first loss of 2% of the amount insured by a private bond insurance company. A big advantage of such first loss coverage would be that private banks or CAIXA could participate in a deal with very low exposure. See Box 2.

Box 2 SANTIAGO/VALPARAISO TOLL ROAD CONCESSION	
Purpose and Description of the Facility:	The proceeds of the bond issue (approx. US\$270 million) were used to finance the engineering, construction and improvement of a 129 km-long toll road linking the cities of Santiago, Valparaiso and Viña del Mar. The bonds were denominated in UF (Unidad de Fomento). The issue benefited from a financial guarantee provided by the IADB and the private bond insurer. The IADB provided 10% of the financial guarantee (up to a maximum dollar value of US\$75 million), and the private bond insurer provided the balance under an A/B guarantee structure. Dexia Credit Local was one of the first loss payees for the part guaranteed by the private bond insurer, through an approximately UF225,000 Letter of Credit, corresponding to about 2% of the private bond insurer's share.
Sources of Repayment	If drawn, source of repayment would be cash flow from the Project plus claw-back mechanisms allowing access to distributed cash flow under certain circumstances.
Covenants/Special Conditions	Include a shadow rating requirement of at least BBB- from both S&P and Moody's
Collateral	First priority security interest in and lien on all real, personal and intangible assets, all contracts, and all rights of the Bond Issuer in which a security interest can be created, including pledge of the Concession, all project agreements and equity interest of the Shareholders in the Bond Issuer.
Arranger(s)	IADB is the Guarantor-of-Record Santander Chile is the Bond Arranger and Underwriter
Dexia Credit Local Position	First loss reinsurer through the provision of a Letter of Credit to the private bond insurer only, originator of the transaction and part of the structuring team

As shown by the events of recent years in Latin America, currency risk can be extreme. If the international investor grants guarantees on local currency loans or bonds, he has a currency risk only in the case of default in which he would have to pay the bank or bondholder in local currency and be

repaid in local currency. Thus, the guarantor's currency risk is contingent on a default event. As sound, flexible structures and rigorous credit analysis lower the credit risk, they lower the guarantor's contingent exchange rate risk.

Providing guarantees is a way that multilaterals could help lower the costs of borrowing for infrastructure investment from Brazil's credit markets, as well as contribute to development of the local credit markets.

TRACK 2 STRUCTURES: PRIVATE RISK AND FUNDING

CAIXA clearly demonstrated its interest in developing new products with national and international partners by contracting a study to analyze new alternatives for infrastructure financing (Hereafter, CAIXA Report).¹⁹ This report concluded that CAIXA could play an important role in increasing the participation of capital markets in financing basic sanitation and urban infrastructure and lists a number of alternatives for tapping the capital markets via different kinds of investment funds. Two of the most promising alternatives are:

- Securitization of Receivables (Fundo de Investimento em Direitos Creditórios).
- Equity Fund (Fundo de Investimento em Participações).

One of the big advantages of these funds over the standard securitization structure with a traditional Special Purpose Entity (SPE) is much more favorable tax treatment. In addition, they also offer greater risk diversity and other features, such as over collateralization of assets. The idea, of course, is to tap the massive resources of institutional investors such as mutual and pension funds, as well as insurance companies.

SECURITIZATION OF RECEIVABLES

CAIXA is currently structuring a FIDC with existing CAIXA loans to subnationals and their water companies, as a pilot effort. One problem is that the TR-adjusted loans have lower interest rates than the market, so that they would be sold at a high discount on the regular market. However, CAIXA has found a small niche of insurance companies that use TR in their operation (called títulos de capitalização) in which it plans to place this small pilot project. Another potential solution would be for FGTS to purchase the FIDC at rates similar to those used on the CAIXA loans.

Could private entities or IADB guarantee the senior tranche of FIDC? This would help to increase the acceptance of this issue in the capital markets for institutional investors.

Table 5 shows the potential roles and possible actors for them in a FIDC with a Guarantor for both Track 1 and Track 2 operations. For water loans, CAIXA has a big comparative advantage as collection agent, as its agencies and lottery posts collect from 30% to 50% in the different states.

¹⁹ Caixa report, ibid.

Table 5
FIDC with Guarantor: Potential Roles and Possible Actors for Them

Roles	Possible Actors
Originator	CAIXA Municipal Development Funds BNDES Private Banks
FIDC administrator	Qualified by CVM
Collection agent	CAIXA Private banks
Guarantor	Multilaterals Private foreign and domestic banks
Investors/ Funding	Track I: CAIXA/ BNDES/ IADB/ World Bank Track II. Institutional Investors

EQUITY INVESTMENT FUNDS

In 2003, the CVM²⁰ regulated the Fundo de Investimento Em Participações (FIP) as another kind of investment fund. Although the FIPs were created to finance private entities, there is no legal restriction for them to be used to finance public entities, as long as they comply with the other CVM regulations.²¹ For example, it seems clear that if the FIP would buy debentures of a water company.

On June 30, 2004, the Inter-American Development Bank (IADB) approved a loan of up to \$75 million to help create a FIP: the Brazilian Infrastructure Investment Fund (BIIF). See Box 3. BIIF is to promote medium and long-term financing from the private sector for infrastructure projects:

The \$575 million investment fund in local currency will be a mixed debt-equity fund designed to invest primarily in private sector infrastructure projects and public utility companies in the areas of energy, transportation, telecommunications, water and sanitation, among others. It is expected to invest in approximately 15 different projects or businesses and will follow guidelines to ensure diversification and avoid excessive concentration in one area or business.”²²

²⁰ Instrução CVM 391 (16/07/03) & 406 (27/04/04)

²¹ CAIXA Report, p. 89.

²² From IADB’s web site.

Box 3**BRAZILIAN INFRASTRUCTURE INVESTMENT FUND (BIIF)²³**

IADB is seeking to support the creation of the Brazilian Infrastructure Investment Fund (BIIF) with participations in the amount of up to 1.5 billion Reais from institutional investors, mainly in the Brazilian market. The IADB will provide financing to the Fund in the form of a senior loan in the amount of US\$ 75 million.

BIIF is designed to provide long-term financing for infrastructure projects in Brazil. The IADB believes that, besides facilitating investments with long term maturities, the Fund will contribute to the development and sophistication of the local capital market and to the maturation of the concept of responsible investment incorporating elements of social, environmental and corporate governance.

The proposed Fund will be registered as a closed-end fund and constituted as a “Fundo de Investimento em Participações” (“FIP”), to be governed by the Brazilian Securities and Exchange Commission (CVM) Rules no. 391/03 and no. 406/04, by the Fund’s by-laws and any other applicable legal and regulatory provisions. While the Fund’s funding objective is to obtain capital in the amount of 1.5 billion Reais, it will begin its operations when it reaches an initial capital amount of 900 million Reais. Once investors have made their commitments to the Fund and the Fund is in operation, *pari passu* draw-downs of capital will occur according to the capital expenditure programs of the invested projects. Investment in BIIF will take the form of senior and subordinated quotas to be purchased by qualified investors, pursuant to the terms of CVM Rule no. 302/99. Both classes of quotas have equal voting rights. However, the Senior Quotas will have preference over the Subordinated Quotas with respect to dividends and the return on equity. The term of the Fund is 15 years, extendable upon resolution of the Quota holders.

The objective of the Fund is to obtain attractive returns through long-term investment in the following securities issued by corporations with headquarters in Brazil, which have as their objective to develop, invest and finance infrastructure projects:

1. Simple Debentures or Debentures convertible into stock;
2. Stock;
3. Subscription Bonuses;
4. Other securities convertible into or exchangeable with stock.

The eligible projects are restricted to the following sectors:

1. Energy;
2. Transportation;
3. Water and sanitation, including water treatment, distribution and treatment and transport of waste, and other treatment and processing sites which develop environmental, recycling and irrigation services; and
4. Telecommunications.

²³ Condensed from: IADB, **Brazilian Infrastructure Investment Fund Request for Proposal Fund Manager Selection Process**, July 16, 2004

A ROLE FOR MUNICIPAL DEVELOPMENT FUNDS?

Multilateral loans have created Municipal Development Funds in many of Brazil's States, including Parana, Rio Grande do Sul, Santa Catarina, Minas Gerais, and Bahia. A World Bank report mentions a number of different alternatives for increasing private sector participation in these MDFs:²⁴

The private sector might also provide supplemental financing for the MDF through: cofinancing, securitization, syndication, guarantees and insurance. There are a number of examples of the use of funds to enhance school district credit for bond issues in the US. The private sector might also provide supplemental financing via a bank loan or arranging a non-bank placement. One alternative is to set up a new, private or more "privatizable" entity that can gradually take over the business of the older public entity. This is what was done in France with the Credit Local de France (CLF) as mentioned earlier. Other alternatives include: (a) cofinancing by the private sector; (b) syndication of loans by the public banks; (c) securitization of the loan portfolios of public banks for sale in the private capital markets; and (d) provision of guarantees or insurance by the public sector banks against different kinds of risks for the private sector. In the World Bank program, the guarantee may be either for specified risks (partial risk guarantee) or for all credit risks during a specified part of the contract of the financing term (partial credit guarantee).²⁵

There are many ways for MDFs to increase private sector participation in financing subnationals and their enterprises. For example, MDFs could also sell their loans on the capital markets via a FIDC.

SUMMARY

In summary, Brazil's reforms paved the way for the emergence of a modern subnational credit market that could reduce the regulatory burden in the control of subnational indebtedness by providing incentives for improved subnational fiscal performance. However, alterations in the regulatory framework to allow the more creditworthy subnationals borrow would be necessary. These creditworthy subnationals could, then, borrow to help meet Brazil's pressing infrastructure needs, using the existing structures discussed above and new ones.

IV. PROGRAMS FOR LOWER INCOME FAMILIES

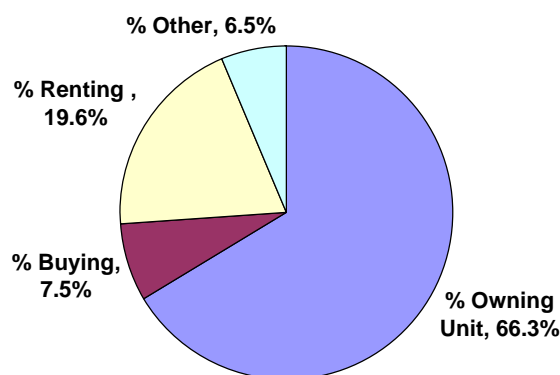
Private subnational credit markets can, of course, finance programs for lower income families, if local authorities so wish. Provision of infrastructure in lower income settlements usually pushes up land rents in these settlements. Thus, if the lower income families are renters, they will tend to be pushed out of the settlement by rising rents. To avoid this, steps must be taken to help secure homeownership for these renters before the infrastructure investments are made.

²⁴ World Bank, **Brazil: Municipal Investment**, Ibid., paragraph 6.30.

²⁵ Ibid.

Table 6 shows that the percentage of renters in Rio's *favelas* is almost 20%, but varies substantially within the municipality, tending to decline in outlying areas, where the percentage of home ownership and buying are highest. The *Centro* Administrative Region had the highest percentage of renters: 48.8%. Obviously, the *favela* dweller owns his housing unit, but generally has no legal title to the land under it.

Table 6
Private Households in *Favelas* by Type of Home Occupation: Rio de Janeiro: 2000



Private Households in *Favelas* by Type of Home Occupation: Rio de Janeiro: 2000

	Total	Center/ Near Zona Norte ²⁶	Zona Sul ²⁷	Outlying ²⁸
Total Private Households	1,802,347	385,878	294,273	1,122,196
% of Total Private Households	100.0%	100.0%	100.0%	100.0%
% Owning Unit	66.3%	62.4%	63.6%	68.4%
% Buying Unit	7.5%	6.4%	4.5%	8.7%
% Renting	19.6%	25.0%	25.2%	16.3%
% Other Condition	6.5%	6.2%	6.7%	6.6%

Source: <http://www.armazemdedados.rio.rj.gov.br/index.htm>

²⁶ Includes the following Regiões Administrativas: Centro, Complexo do Alemão, Maré, Méier, Portuária, Rio Comprido, Santa Teresa, São Cristovão, Tijuca, and Vila Isabel.

²⁷ Includes the following Regiões Administrativas: Barra da Tijuca, Botafogo, Copacabana, Lagoa, and Rocinha.

²⁸ Includes the following Regiões Administrativas: Anchieta, Bangu, Campo Grande, Cidade de Deus, Guaratiba, Ilha de Paquetá, Ilha do Governador, Inhaúma, Irajá, Jacarepaguá, Jacarezinho, Madureira, Pavuna, Penha, Ramos, Realengo, and Santa Cruz.

CONCLUSIONS

Private subnational credit markets in the US and Europe have long provided an impressive volume of credit on favorable terms while controlling subnational indebtedness and providing instruments of high credit quality for investors. Mexico's government has successfully implemented market based controls of subnational borrowing (and bailouts), while helping to develop its financial markets. With some regulatory changes to allow the most creditworthy subnationals to borrow, Brazil could further develop its private subnational credit markets using structures that have in great part already been developed. These markets could reduce the burden of subnational regulation by providing incentives for improved subnational fiscal performance in the form of greater access to credit on more favorable terms. Steps must be taken to assure that lower income families are not pushed out of areas benefiting from infrastructure investments by rising rents.