

**MEASURING LOCAL GOVERNMENT CREDIT RISK
AND IMPROVING CREDITWORTHINESS**

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I. INTRODUCTION

At the heart of any credit financing system lies the ability of both lenders and borrowers to assess credit risk. Municipal credit markets have been slow to develop in emerging countries because the risks of municipal lending have been difficult to identify, and even more difficult to limit in reliable fashion except through central-government guarantees. Many Municipal Development Funds sponsored by multi-lateral institutions have experienced unacceptably high loan loss rates, frightening away potential private-sector lenders. Financial markets have found it difficult to use municipal budgets and municipal financial reports to gauge underlying financial condition so as to assess the credit risks involved in municipal lending.

This situation is changing. Municipal borrowing in recent years has grown rapidly and is likely to accelerate in view of the immense investment backlogs that local governments face and the continuing decentralization of service responsibilities. Some developing countries have been able to involve the private sector in direct municipal lending. Other countries have created specialized financial intermediaries whose job is to raise financial resources from the private sector and lend them to local authorities. The credit experience of these arrangements varies widely. Within World Bank programs alone, default rates on municipal loan projects have ranged from 0 to more than 90 percent. This variation provides a good basis for assessing the factors that contribute to municipal credit risk and creditworthiness.

Who Should Assess Municipal Credit Risk?

All participants in the municipal credit market need to assess credit risk. The lender or investor has perhaps the most obvious interest in determining whether a loan is “creditworthy” since its money is at stake. However, in a well-functioning market (or a public lending system that simulates a market), the borrower has an equal interest in understanding the risks it assumes by borrowing, as well as the likely impact of that risk on the interest rates it must pay, now and in the future. In countries that use bond markets to allocate municipal credit, specialized institutions like independent credit-rating agencies and bond insurance firms have developed that are paid by market participants to perform part of the task of assessing and reducing credit risk. Central government regulators have a critical interest in ensuring both that individual municipalities take on prudent risks in borrowing, and in establishing a national framework that will reduce credit risk for the entire municipal sector.

When Is a Municipality Creditworthy?

A municipality is “creditworthy” when its borrowing meets the risk standards of a lender. The same municipality may propose two loans, one of which is creditworthy while the other is not, depending upon the specific credit protections built into the loan agreement.

There is no absolute level of credit risk that constitutes “creditworthiness.” Each lender and each national government must decide how much risk it will tolerate in municipal lending. In a market situation, higher credit risk is compensated by higher interest rates. Some lenders may prefer to accept

higher risks in exchange for higher potential returns. Certain lending institutions may be subsidized by government expressly to enable them to make higher risk loans that generate public benefits; the standard of “creditworthiness” for these institutions is appropriately less demanding than it would be for lenders whose risk-taking is not subsidized. Central governments in their regulatory role have to establish norms of creditworthiness. At times, central authorities have imposed such severe restrictions on local government borrowing that, while the credit risk of the loans that are made undoubtedly is reduced, lending activity in the municipal sector is choked off. At the other extreme, some central governments have provided sovereign guarantees to virtually all local borrowers. This practice both stimulates lending activity and protects market participants from risk. However, it impairs market development in other ways. Lenders have little incentive to carry out municipal credit evaluation at all, relying exclusively on the sovereign guarantee, with the result that capital is mis-allocated to activities that have high inherent risks or low economic returns.

In short, credit risk must be traded off against other objectives, both in the minds of lenders and in the design of a credit system. The standard set for “creditworthiness”—i.e., the dividing line between loan approval and loan rejection—will reflect these tradeoffs.

A Note on Terminology

Municipal loans and municipal bonds are two ways of providing credit to local government authorities. Although these instruments and the markets that support them have significant differences, the assessment of credit risk in both cases involves essentially the same procedures. In this Toolkit, except where otherwise noted, we refer interchangeably to municipal bonds and municipal loans as well as to other terms like credit “issue,” which, strictly speaking apply only to one form of lending or the other. Similarly, except where otherwise noted, we refer interchangeably to different terms for local government authorities. Among such terms are “municipality,” “local authority,” and “local government.”

Finally, this Toolkit addresses credit risk. Municipal credit markets involve other kinds of risk. Like all credit markets, they are subject to interest-rate risk (i.e., the risk that the market value of an outstanding loan or bond may change because of a change in general interest rates). Lenders and borrowers in foreign currency face exchange rate risk. Municipal lenders in most emerging markets face liquidity risk (i.e., the risk that they cannot realize the value of a loan or bond through sale before maturity because there is not a well-functioning secondary market). Our focus is on credit risk. However, the risks are intertwined. When other risks affect the borrower’s ability to repay a loan, or a lender’s willingness to accept different degrees of credit risk, they are addressed in this Toolkit.

II. CREDIT RISK AND CREDITWORTHINESS

What Is Credit Risk?

Credit risk is the risk that a borrower will not make full and timely payment of debt service. Once a borrower falls behind in debt servicing, credit risk also involves the relative size and probable duration of default.

Moody's Definition of Credit Risk for Municipal Bonds:

“The probability that interest and principal will be paid in accordance with the terms of the bond issue, as well as the bondholders' likely economic return if the bond issue defaults.”

How Is Credit Risk Measured?

Credit risk usually is measured on a comparative scale. The credit risk of a particular borrowing is measured first against the risk of other municipal loans or municipal bonds in the country. Sometimes, an attempt is made to standardize credit ratings across different types of credit, including corporate, municipal, and central-government debt, or for municipal bonds across different countries.

Examples of Standard & Poors Municipal Rating Categories

AAA—“capacity to repay interest and principal is extremely strong.”

BBB—“adverse economic conditions or changing circumstances are more likely to lead to a weakened capacity to pay interest and repay principal.”

B—“currently has the capacity to meet interest payments and principal repayments. Adverse business, financial, or economic conditions likely will impair capacity or willingness to pay.”

Independent bond-rating agencies customarily use a specific letter or numerical scale to summarize risk assessments. Banks that lend to municipalities have comparable scales that they use for internal risk evaluation.

The summary credit rating combines the various risk factors discussed in this Toolkit. Since there is no single “right” way to combine the different risk factors, users should either examine and weigh the underlying risks directly, or confirm the track record over time of a credit rating agency's ability to discriminate effectively between high and low-risk lending in a particular country. Start-up rating agencies in emerging credit markets typically require a number of years to develop reliable municipal credit-rating methods—partly because the most important sources of credit risk vary from country to country and must be uncovered by relating different risk factors to actual default experience.

Creditworthiness Standards

A municipal loan or municipal bond is “creditworthy” when it meets the risk standards of the lender. Institutional lenders, like mutual funds, pension funds or insurance funds, generally will establish a minimum level of credit quality that an issue must have. In the United States, most insurance funds and many mutual funds will invest only in “investment grade” municipal bonds.

These are bonds rated are bonds rated BBB or higher on the S&P scale. Institutional lenders may also specify a risk distribution for their entire loan portfolio—e.g., that at least 75 percent of bonds or loans be rated A or higher. Or they may adjust their capital adequacy ratios to reflect the riskiness of the lending portfolio (see box).

The rules establishing “creditworthiness” standards may be set by the lender itself, or by regulatory authorities. The market also plays a role. Unless a municipal lending institution sets clear and prudent rules for lending, it is likely to have a hard time raising capital on the private market.

Default Rates

Credit ratings are an attempt to evaluate risk, *ex ante*, before a loan is made. After a set of loans has matured, credit risk can be measured, *ex post*, for that class of loans by the default rate, or some variant of this measure. Banks and credit rating agencies use actual default experience to modify the models they use to assess *ex ante* credit risk.

Default rates can be measured in different ways. Care needs to be taken to specify clearly the definition that is being used in a particular case. Banks and regulatory authorities often measure default rates by the principal value of loans in default. Problem loans may be defined as loans for which payment of debt service is at least 30 days past due. Non-performing loans may be defined as loans for which payments are at least 90 days past due. Technical default on a municipal bond occurs as soon as a scheduled debt service payment is missed. Banks and other lenders set forth maximum target rates for problem loans and non-performing loans in their business planning. Regulatory authorities typically require loan loss provisioning once loans reach the non-performing stage.

Unfortunately, there is no universally accepted standard for reporting or measuring default rates. Either the ratio of *defaulted debt service to annual debt service owed* or *principal value of defaulted loans to principal value of all loans* is preferable to a measure that mixes flows and stocks—e.g., the ratio of *defaulted debt service to principal value of all loans*. The latter measure frequently is cited by municipal lending institutions in developing countries. It tends to greatly underestimate the magnitude or urgency of default problems.¹

Creditworthiness Policy: Infrastructure Financing Company of South Africa

INCA, the Infrastructure Financing Company, is a 100 percent private-sector financing intermediary which lends to local authorities in South Africa. It raises funds for lending mainly through its own bond issues.

INCA’s bond prospectus both limits the maximum credit risk (minimum credit rating) for individual INCA loans, and requires INCA to adjust its financial leverage (capital to outstanding loans ratio) according to the weighted credit risk of all municipal loans in its portfolio. When the loan portfolio becomes riskier, INCA must add more capital, as protection for its bondholders. The specific ratios INCA must maintain are set forth in the prospectus.

¹ For example, in a group of loans where the interest rate is 10 percent and where there is a five-year grace period on principal payments, with debt service due semi-annually, *all* of the loans could be non-performing and five-months past due in debt-service payments, yet the reported default rate by this measure would be only 5 percent.

Close monitoring of default rates (or problem loan rates) is critical to assessing and limiting municipal credit risk. When negotiating a program for municipal credit development, Bank and country officials should set clear targets for maximum default rates on Program loans and for loans in the entire municipal sector, with a clear definition of how default will be measured. In effect, this target establishes the standard of creditworthiness that the municipal sector will aim for. It provides a guideline as to how much credit risk is tolerable.

At present, few parastatal lenders to local authorities routinely monitor municipal default experience. Even fewer report default rates publicly, or compare actual default experience with institutional targets. A review of 30 Bank programs in municipal lending found none that specified targets for default rates or non-performing loan rates.

Default Measurement and Default Targets

A bi-lateral aid program helped set up a financial intermediary in the Czech Republic which makes loans to municipalities through commercial banks. A primary program objective, formalized in the Policy Agreement signed by the Czech Government, was to keep problem loan rates (measured as the percentage of loan amounts on which debt service was more than 30 days past due) under 5percent. Later, as the Program expanded into technical assistance in municipal credit analysis for all commercial banks and other municipal lenders, the same target of a maximum 5 percent “default” rate was established for the entire municipal credit sector. In actual experience, the problem loan rate in the municipal sector, defined as above, has been under 1 percent, as compared to a problem loan rate of 38 percent on banks’ loans to the industrial-commercial sector.

The highest default rate on municipal bonds in the United States was reached at the peak of the Great Depression, in its fourth year. A cumulative debt service amount equal to 16 percent of annual debt service on all outstanding municipal obligations was in default.

III. ASSESSING AND IMPROVING SECTORAL CREDIT RISK

Much of the international experience with publicly released municipal credit ratings has been accumulated in the United States. Credit ratings, along with municipal bond markets, are now growing rapidly in Europe, Latin America and in parts of Asia and Africa. However, the U.S. model of credit risk analysis tends to predominate.

In some respects, the U.S. orientation has distorted municipal credit evaluation in developing countries. The United States has a distinctive fiscal system, and credit rating methodologies have evolved so as to capture the risks inherent in that system. For example, local governments in the United States rely much more heavily than local governments in the rest of the world on local taxes, imposed and collected at the local level, and on fees charged for local public services. This makes the revenue side of local budgets highly sensitive to *local* economic conditions and *local* decisions about tax rates. Historically, the principal source of local revenues has been the local property tax; hence, borrowing limitations and credit risk assessments have tended to concentrate on debt and debt service obligations relative to a community's property values. Intergovernmental fiscal flows in the United States, though subject to political and other forces, are relatively modest by worldwide standards and relatively stable.

Most developing countries have a quite different revenue picture. Consequently, the greatest credit risks may be found at different spots than in the United States. In particular, more of the risks are systemic risks, risks deriving from central government policy toward the municipal sector as a whole, or risks associated with sorting out the rules that will govern municipal borrowing and loan repayment, whereas in the United States the principal risks now concern the financial and economic conditions of individual municipal borrowers or the credit protections surrounding individual municipal bonds.

Assessing Sub-Sovereign Credit Risk in Russia

Russia illustrates the distinctive factors that sometimes go into credit risk assessment in developing countries. Of the five major risk elements in a proposed Novgorod Oblast bond, only the last in the list below is commonly an important risk consideration in Western local credit markets. The bond is a short-term (six-month) issue:

* *Dependence on violently fluctuating Federation transfers.* Transfers from the Federation level account for about 57 percent of Novgorod Oblast budget revenues. Not only have the rules governing the types of revenues that will be shared, and the sharing proportions, been changed each year, but the Federation often runs one to several months late in making transfers, because of cash flow problems. Allocations from the Federation are the least stable of the 13 different sources of Oblast revenue.

* *Barter payments.* Taxes and fees often are paid in kind rather than in cash. Novgorod Oblast receives about 75 percent of its revenues in cash, which was rated as very good, ranking it 5th among 33 oblasts.

* *Guarantees.* The Oblast provides unconditional guarantees for the debt of other entities, primarily commercial enterprises. In July, 1997 the amount of outstanding guarantees (R31.6 billion) was more than 10 times the Oblast's own outstanding debt (R 3 billion).

* *Unprofitable enterprises.* Both the Oblast's tax revenues and its guarantee exposure depend heavily on the profitability of enterprises in the region. However, 46 percent of all enterprises in the region were unprofitable in the previous year—considerably higher than the rates in Moscow or St. Petersburg.

* *Need to roll over short-term debt.* There was little real prospect of Novgorod Oblast paying off the bond at the end of six months from revenues. It would need to roll over the debt by issuing new bonds.

BIS Ratios

One measure of overall credit risk in the municipal sector is the BIS ratio. The Bank of International Settlements in Basle establishes minimum capital adequacy ratios for banks that all member nations subscribe to. The capital adequacy ratio refers to the ratio of bank capital to outstanding loans, after separate provisioning for non-performing loans. The base capital adequacy ratio is now 8 percent.

In calculating capital adequacy ratios, loans outstanding are weighted by sectoral risk. Loans to central government (of the same country) are assigned zero weight; i.e., they are assumed to be risk free for regulatory purposes. Loans to the business sector are weighted at 1.0. The Basle Agreement recognizes that the relationship between national government and sub-sovereign public bodies, like municipalities, varies greatly from country to country, and so allows a discretionary assignment of risk by the Central Bank to municipal loans. The risk weighting may be set anywhere between 0 and 1.0. These risk weightings for municipal loans are termed BIS ratios.

Especially in Europe—both Eastern Europe and Western Europe—as well as in developing countries whose financial regulation practices have been shaped by European models, BIS ratios play an important role in municipal lending. They directly reflect the Central Bank’s assessment of municipal credit risk and its guidance to commercial banks about prudential lending in the sector. An increase in the BIS ratio requires banks to add more capital for any given volume of municipal lending (assuming a bank is near its minimum capital adequacy ratio), thereby raising the cost to banks of making municipal loans, and tending both to drive up interest rates in the sector and slow loan growth.

Differences across countries in municipal sector BIS ratios are revealing. In the Netherlands the BIS ratio is 0, indicating that local government borrowers are viewed by the Central Bank as no more risky than the national government itself. This reflects the fact that there have been no municipal defaults since the 1930s and the fact that the State indirectly guarantees municipal loans through a variety of mechanisms. The Czech National Bank now imposes a BIS ratio of 0.2 for municipal lending, reflecting the low sectoral problem-loan rate since municipal lending was resumed. The South African Reserve Bank recently adopted a BIS ratio of 1.0 for municipal loans.

BIS Ratios in South Africa and the Czech Republic

Changes in BIS ratios reflect the Central Bank’s changing assessment of the risks in municipal lending. In South Africa, the South African Reserve Bank historically maintained a low 0.1 risk weighting for municipalities, based on a strong implicit national guarantee of municipal debt and the strong financial position of white local authorities, the only municipal borrowers from the banking system. In 1996, the BIS ratio was raised to 0.2. In November 1997 it was raised to 1.0, reflecting a) the central government’s renunciation of any guarantee for municipal debt, b) the amalgamation of black and white local authorities resulting in weakened local financial condition relative to previous white local authorities, and c) the lack of legislative or Constitutional definition regarding the future intergovernmental financing system.

In contrast, the Czech National Bank lowered the risk weighting of municipalities from 0.4 to 0.2, based on the extremely low default history of municipalities. It encouraged banks to strengthen their loan portfolios by diversifying from corporate lending into municipal lending

Intergovernmental Fiscal Dependence and Legislative Risk

Most local governments in developing countries rely heavily on intergovernmental fiscal flows. These take the form of capital grants, operating transfers, formula-based revenue sharing, and sometimes such special arrangements as reimbursement for local budget deficits. The proportion of local budget revenues that are collected by national or provincial authorities, then transferred to local government can reach as high as 90 percent as in Czech municipalities excluding Prague, and is more than 50 percent in many countries including Brazil, Argentina, Colombia, India, Indonesia and Romania.

Formula-based revenue sharing often is the largest intergovernmental fiscal flow. It entitles local authorities to receive a designated proportion of some nationally collected revenue source—the personal income tax, VAT, or even all nationally collected revenues. In federal systems, similar formula-based revenue sharing may entitle municipalities to receive designated proportions of revenues collected by the state or province. When the formulas defining local revenue shares are stable and fully respected, revenue sharing of this kind is a reliable source of local revenue. Under European Union fiscal rules, revenue sharing in fact is counted as “own-source” revenue.

In developing countries, local revenue-sharing receipts are subject to more central-government discretion. Local government’s share of a national revenue source can be changed drastically from one year to the next (see box), or even in the middle of a fiscal year if the national budget comes under pressure. Where local budgets are highly dependent upon revenue sharing, and revenue-sharing arrangements are unstable, it becomes virtually impossible to calculate a local government’s capacity to repay debt. Neither a potential lender nor the local authority itself knows how large its revenue sharing allotment is likely to be in the future. This uncertainty about revenue levels translates into credit risk.

Instability of Revenue Sharing Rules and Legislative Risk

In Hungary, the personal income tax (PIT) is collected by national government but shared with local authorities on a formula basis. It has been one of the principal sources of local income, but also a source of financial instability. In 1991, local governments were allocated 100 percent of the PIT. The local percentage changed to 50 percent in 1992, 30 percent in 1993-94, and 35 percent in 1995. The local share is derived as a residual after Government and Parliament decide the total level of national support for local budgets.

Argentina’s experience exemplifies another kind of legislative risk. Argentina has a constitutional requirement that a new revenue sharing pact (called the co-participation revenue system) be negotiated between central government and provinces in time to be implemented in 1996. The new system was not put into effect in 1996, however, but was postponed to 1998. During the interim, co-participation payments, the largest source of revenue for most municipalities, had an uncertain legal basis and carried the risk of unilateral modification by Government. There is also the possibility that there will be further delay in negotiating a new revenue-sharing agreement.

Some countries have tried to combat this fiscal uncertainty by writing revenue-sharing formulas into their constitutions, as Brazil and Colombia have done. Constitutional provisions do add strength to the revenue-sharing pledge. However, under fiscal duress the pledges have not always been honored. In the end, intergovernmental revenue risk must be judged by the historical record. Unless revenue-sharing has been stable or predictable over time, heavy dependence on intergovernmental transfers is a source of credit risk. The risk is greater if local authorities have limited powers to raise taxes or fees at their own initiative.

Parastatal Lenders' Default Rates

Municipal lending and loan repayment are partly political. This is especially true when municipal lending is handled by parastatal Municipal Development Funds, State Environmental Funds, or similar public institutions. Loans sometimes are made for political reasons. Municipal borrowers often plead poverty and attempt to get national authorities to forgive their loans or not press for collection. A "municipal loan culture" soon develops, in which, depending upon the way national and parastatal authorities act, timely loan repayment is regarded either as a strict obligation or an option to be exercised when fiscally convenient.

The best measure of this systemic risk is the default rate on public or quasi-public lending to municipalities. As the box illustrates, default rates can vary by large amounts. Although differences in municipal financial condition and ability to pay account for some of this variation, most of the difference is due to differences in local *willingness to pay* and lending institutions' *willingness to live with non-payment*.

Tolerance of high default rates in part of the municipal lending system is likely to infect creditworthiness in the rest of the municipal credit market. A number of simple steps, summarized at the end of the section, can minimize these risks.

Duff and Phelps' Analysis of Credit Risk for Rio de Janeiro

"The municipality derives revenues from intergovernmental transfers. This is a feature that Rio shares with other municipalities in the country. Nonetheless, 37.4 percent of revenues [in 1995] were derived from such transfers. Direct federal transfers accounted for only 4.2 percent, with state transfers of motor vehicle taxes and taxes on goods and services constituting the rest. States in Brazil, however, depend on the federal government for transfer revenues. While both federal and state transfers to the municipality are constitutionally protected, the risk is one of fiscal constraints at the state or federal level, affecting the outlook for intergovernmental transfers at the municipal level. This vulnerability could be significant in an environment where the public sector at the level of the central and state governments generally faces resource stresses. These stresses have been building up..."

Non-Performing Loan Rates, Selected Municipal Development Funds

FUND	NON-PERFORMING RATE (Year)	
Calcutta CMDA	90% +	(1989)
Kenya LGLA	85%	(1993)
Honduras BANMA	57%	(1992)
Indonesia RDA	28%	(1994)
South Africa LALF	11%	(1995)
Colombia FINDETER	2%	(1996)
Brazil, Paraná PrAM	2%	(1993)
Jordan, CVDB	Entire portfolio restructured, with 2-year grace period.	

Legal Issues Surrounding Municipal Default

Part of the credit risk that a municipal lender faces is the probability of getting paid in the event that a municipal borrower defaults. Unlike other borrowers, municipalities cannot go out of business. Therefore, it often is more likely that some kind of “workout” will be negotiated, or that loans will be restructured by mutual agreement rather than defaulted upon in their entirety.

A lender will find comfort in a well-defined legal or political process that clarifies what happens in the event of default. One issue involves the priority of claims as between lenders, municipal employees, vendors and other creditors during default. Another issue involves the role of the State. Often, it is perceived that municipal debt carries an implicit guarantee from the State. From the State’s perspective, perfect clarity regarding its actions in the event of local default may be undesirable, since it limits government’s flexibility in responding to particular situations. It is important, however, that the credit market understand whether there is a general Government guarantee, as well as the procedures that will be followed in case of default. The process should involve sufficient enforced fiscal discipline to reduce credit risks throughout the municipal sector by making clear to municipalities the importance of responsible credit management.

Workout Procedures

Hungary, Argentina, Colombia, and South Africa are among countries that now have formal, legislatively based workout procedures for municipalities that either have defaulted on loans or are about to do so. Generally, these provisions call for the State (or province) to temporarily assume debt service obligations, but also to send a fiscal intervention team to the municipality, charged with the responsibility of cutting budget expenditures and increasing local revenues so as to restore budgetary balance and resume local debt servicing.

A municipality remains under “forced intervention” until its budgetary situation is cured. The municipality is prohibited from issuing new debt except as part of a refinancing package recommended by the intervention team and approved by higher-level government.

The legal rules surrounding collateral and guarantees have similar importance. Clarity with respect to the conditions under which a lender can claim payment of a loan guarantee or foreclose on collateral helps reduce municipal credit risk.

Economic Conditions

The ability of municipalities to repay debt is sensitive to economic conditions. The precise economic risk depends upon a municipality’s revenue and expenditure structure. Local governments that raise most of their funds from local taxes are specially vulnerable to local economic conditions. Local governments that rely primarily upon revenue-sharing from nationally levied taxes are less vulnerable to local economic conditions, but are more exposed to economic difficulties elsewhere in the country. Local governments that have to pay for safety-net activities, like unemployment compensation or hospital care for the poor, out of locally generated revenues are more vulnerable to economic cycles than are local governments that either do not provide these services or are compensated for them directly by transfers from the central government. Communities that have high concentrations of “old”

economic activities, where employment is being slashed because of economic restructuring, face special difficulties in taking on debt obligations.

One task of credit analysis is to identify the economic events which would most impair a municipality's ability to repay debt, and assess the risk of these events. Since economic analysis of this kind is standard within the Bank, we do not spell out the indicators that can be used for this purpose.

Table 1	
STEPS WORLD BANK AND COUNTRIES CAN TAKE TO IMPROVE MUNICIPAL SECTOR CREDITWORTHINESS	
Area	Actions
<u>Fiscal System</u>	
1. Intergovernmental Flows	1a. Establish clear legislative or constitutional basis for revenue-sharing and grants 1b. Maintain stable revenue-sharing formulas
2. Local Revenues	2a. Provide for local control over local tax rates (or local piggy-back rates) on some significant revenue sources
<u>Municipal Development Funds</u>	
1. Problem Loans	1a. Set explicit targets for maximum acceptable problem loan rates; monitor actual experience
2. Credit Assessment	2a. Assign explicit risk rating to each municipal loan 2b. Separate department within Fund or external credit-rating institution performs risk assessment. 2c. Compare <i>ex post</i> default or problem-loan experience with <i>ex ante</i> credit ratings; revise risk assessment methodology if necessary
3. Loan Policy	3a. No new loans to borrowers who have problem loans outstanding 3b. No capital grants by Government to borrowers with problem loans outstanding
<u>Legal System</u>	
1. Default Procedures; Collateral Foreclosure	1a. Establish clear legal rules governing default procedures that are followed in practice, and enforceable by courts
<u>Loan Defaults and Workouts</u>	
1. Local Budget Intervention	1a. Establish automatic procedures for local budget intervention by Government or Province at time of (impending) default 1b. Give intervention team power to restore budgetary balance by mandatory spending cuts and/or tax increases

IV. MUNICIPAL DEBT BURDEN AND DEBT STRUCTURE

The magnitude and structure of local debt, including any proposed new borrowing, is critical to credit analysis. Financial ratios often are used to measure municipal debt burden and a municipal borrower's ability to pay debt service. The ratios are most effective when there is a known universe for statistical comparison, so that the indicators for an individual municipality can be compared with those for other municipalities.

Debt Service / Recurring Revenues

The ratio of debt service to recurring revenues, or some variant of this measure, probably is the most fundamental of the financial ratios. The ratio is commonly used by credit-rating agencies in assessing municipal credit risk, by municipalities in projecting their own debt capacity, and by national governments in establishing borrowing ceilings for local governments. It measures the capacity of a municipality to cover debt service from regular revenue sources.

In the ratio of *debt service to recurring revenues*, the numerator is annual interest payments plus annual principal payments on debt, including any proposed new debt that is being evaluated. The denominator is annually recurring ordinary revenues—that is, total revenues minus one-time or capital revenues, such as proceeds from asset sales or targeted grants for investment projects.

The *debt service to recurring revenue ratio* should be calculated for the current year, and for several years into the future, using current debt obligations and conservatively estimated future revenue growth that does not count on increases in tax rates or changes in revenue-sharing formulas. In developing countries, many municipal loans carry prolonged initial grace periods. When these expire, debt servicing obligations can suddenly jump, increasing debt service ratios dramatically. Principal payments on other loans may be bunched in particular years. Consequently, it is important to calculate the debt service requirements of existing and proposed debt for several years into the future. Lending policy should avoid prolonged initial grace periods.

In France and other countries, a variant of the above ratio is used as the key financial indicator. Instead of recurring revenues in the denominator, the ratio uses the local government's *management savings* or *operating surplus* (the two terms refer to the same concept; see accompanying budget

Outline of Municipal Budget and Debt Ratios

OPERATING BUDGET

= Current (Recurring) Revenues

- Own Sources
- Shared Taxes
- Operating Transfers

– Operating Expenditures

= OPERATING SURPLUS

[MANAGEMENT SAVINGS]

– Debt Service

– Investment

+ Capital Revenues (asset sales, capital grants)

= TOTAL (DEFICIT) SURPLUS

= Borrowing Requirement (if deficit)

box). The ratio of debt service to operating surplus measures the percentage of “free” funds left over after paying for current service delivery that is needed for debt service.

Recent historical trends for either of these ratios can reveal whether the debt service picture is tightening. For example, Credit Local de France, the large municipal bank, argued that the declining size of management surpluses, and the steady growth of *debt service to management savings* for French municipalities in the first half of the 1990s, inevitably would lead to diminished local investment and credit capacity unless reversed.

Sometimes *total revenues* are used in the denominator of the debt-service ratio instead of recurring revenues. This measure tends to be easier to calculate, since total budget revenues often are known for a large sample of municipalities when the exact composition of revenues is not. In countries where municipalities do not generate much revenue from asset sales or other capital activities, the ratio of *debt service to total revenue* tends to provide much the same information as the ratio of *debt service to recurring revenue*.

Distribution of Debt Service/Total Revenue Ratio, United States Municipalities

Year	Percentile Distribution		
	25th	50th	75th
1989	.132	.066	.020
1991	.133	.066	.019
1992	.136	.072	.018

In the United States a *ratio of debt service to total revenue* greater than 0.15 traditionally has been viewed as a danger signal. Debt service ratios above this level place a municipality at the high end of the U.S. distribution (see box). Comparative tables can quickly identify municipalities whose debt service ratios are high compared to the rest of a national or Program universe, suggesting the need for careful scrutiny of local financial conditions. The second box, for example, shows that two municipal borrowers under the Czech Municipal Infrastructure Financing Company (MUFIS) program have *debt service to total revenue* ratios in excess of 30 percent. This does not necessarily mean that loans should not have been made to these municipalities. A municipality may have fully evaluated the costs of investment and have decided to “catch up” on needed improvements by exercising strict discipline over other budget elements. However, a debt service ratio of this magnitude is a warning signal.

Debt Service/Total Revenue Ratio, First 25 Borrowers in MUFIS Program, Czech Republic

Debt Service Ratio	MUFIS Only	All Borrowing
0-4.9%	13	8
5.0-9.9%	8	9
10.0-14.9%	2	3
15.0-19.9%	0	2
20.0-24.9%	1	1
30.0-34.9%	1	2

The second box illustrates, too, the importance of taking into account all borrowing, not just borrowing under one program. In the Czech Republic, for example, municipalities can borrow from

commercial banks on their own or through the MUFIS program; from the State Environmental Fund, Ministry of Agriculture (for water projects); and from the Ministry of Finance and District Office (when in financial difficulty). They also can issue municipal bonds. The total debt service ratio, for all borrowing, is the relevant measure for assessing credit risk.

Total Debt/Tax Base

The ratio of *total debt to local tax base* measures the potential for paying off debt from local tax revenues, on the assumption that a municipality is unrestricted in its taxing powers. For decades in the United States, as much as 90 percent of all local revenues were obtained from the local property tax. The property tax was an unlimited tax; that is, local authorities could raise local property tax rates as much as necessary or as much as desired to finance local budgets. General obligation borrowing by municipalities was secured by this unrestricted ability to levy local property taxes.

In this kind of fiscal system, it is reasonable to measure debt burden or debt capacity in terms of the ratio of total debt to the total local taxable base. In the United States, the ratio would measure the ratio of *total local debt to total property value*. In the nineteenth century and first part of the twentieth century most state tax limitation statutes were written in terms of this ratio.

The ratio has less significance today. Many states no longer allow municipalities unrestricted freedom in levying local property tax rates. There are state ceilings that must be obeyed. Property often is not assessed at full market value, introducing a complexity into the denominator of the ratio. Property taxes have declined as a proportion of total local revenues, making the measure less relevant as an index of local revenue capacity.

Nonetheless, in situations where a single tax source dominates the local revenue picture, and local authorities have substantial discretion over the tax rate that is levied, a ratio that measures *total debt outstanding as a proportion of the value of the taxable base* has significance as the ultimate capacity to pay off the local authority. In other situations it is less relevant.

In cases where there is a nationally imposed or provincially imposed tax rate ceiling, local authority revenue-raising flexibility can be measured in part by whether the locality is at its ceiling or below.

Debt per Capita

Debt per capita provides a rough measure of the extent of local indebtedness. It can readily be compared across jurisdictions and even across countries to make broad judgments about debt exposure.

Debt per Capita Comparisons

In 1995 Argentine provinces had an average outstanding debt of US\$430 per capita, as compared to an average outstanding debt of \$400 for U.S. states. Provincial per capita debt ranged from \$50 in the province of San Luis to \$2,200 in La Rioja.

These figures make a presumptive case for over-indebtedness of Argentine provinces, as well as for targeting certain provinces for strengthening of fiscal discipline.

Local Financial Condition

As important as debt ratios is the general financial condition of a municipality and its trend. Financial condition can be measured by:

—*Operating surplus.* When this surplus is substantially positive and trending upward, local financial condition tends to be strong, as is the capacity to finance debt (see budget box, page 12).

—*Total surplus.* When this surplus is positive and has a history of being positive, financial condition tends to be strong, as is the capacity to absorb unexpected fiscal downturns and finance debt (see budget box, page 12).

Debt Structure

The overall structure of a municipality's debt has proved to be an important factor in default experience. A favorable debt structure has moderate and predictable annual debt service, as opposed to sudden surges in debt servicing which will require refinancing. The latter put a municipality at risk to economic and political conditions at the time of refinancing. Other indicators of risk in debt structure are:

- *Large foreign currency debt.* Foreign currency debt exposes a municipality to exchange-rate risk and also to the possibility that, because of national government controls over the foreign exchange market, the municipality cannot obtain foreign currency when needed to finance debt servicing.
- *Balloon maturities or large amounts of debt with prolonged initial grace periods.* Both of these structures tend to postpone and obscure principal payments, creating the risk that a municipality cannot meet the sudden increase in debt servicing that occurs when principal payments come due.
- *Large amounts of short-term debt.* Short-term debt should be used to smoothe out monthly cash flows and should be repaid in full during the fiscal year. When used to pay for investment or to cover recurring budget shortfalls, large amounts of short-term debt are a danger signal. The debt must be continually refinanced. If external credit market conditions deteriorate, the municipality may have to default.
- *New debt as a high proportion of municipal "income."* Dependence on borrowing to provide budgetary cash flow is dangerous. The danger is exacerbated in cash-basis accounting systems that treat borrowing proceeds as "income." Exposure to this risk can be measured by the ratio of *annual net borrowing to total annual revenue.*

Putting It All Together: Borrower’s Perspective

Well-managed municipalities that participate in a private credit market often plan their borrowing and investment so as to stay within favorable parameters for the financial ratios that lenders and credit-rating agencies pay most attention to. (See box) In effect, rather than start with investment “needs” and calculate how much borrowing will be necessary to finance these needs, municipalities start at the other end—how much borrowing can they undertake and still retain access to the credit market on favorable terms?

A formal policy of this kind may not be justified in countries where the interest rates municipalities pay on borrowing are less sensitive to credit risk. Nonetheless, all municipalities can benefit from projecting into the future the key financial ratios implied by their multi-year capital improvements plans and borrowing requirements. This exercise will identify the overall financial burden of capital financing, as well as particular weak spots, such as large debt servicing obligations in a particular year. It usually is possible to either restructure the municipality’s debt or to modify the timing of investments so as to address the weak spots.

Putting It All Together: National Regulation and Oversight

National governments, as well as lenders and borrowers, have a strong interest in seeing that the local credit market works efficiently without generating excessive credit risk. Municipal defaults can lead to pressure on central authorities to produce financial rescue packages, and can even jeopardize the Government’s own credit rating. If infrastructure investment responsibility is to be devolved to the local level, local authorities must be sufficiently creditworthy to attract private-sector credit on their own.

Financial Reporting, Disclosure, and Audit. Underpinning all credit analysis is the availability of pertinent, reliable financial data. At present, though all developing countries require some kind of local financial reporting to national authorities, this reporting most commonly serves to demonstrate legal compliance. The financial reports that local governments prepare for the Ministry of Finance or provincial authorities rarely present financial information in the form that credit market participants require to assess credit risk. One-time exceptional revenues are run together with recurring revenues, and are reported according to a blend of cash accounting and accrual accounting principles. Capital budgets are not distinguished from operating budgets. New borrowing may be reported as “revenue” in balancing the budget.

Capital Investment Planning Using Financial Ratios

Fairfax County, Virginia is one of the largest counties in the United States. In the early 1990s, it adopted a formal capital financing policy, which prescribed that outstanding debt would not exceed 1.75 percent of the market value of taxable property [*total debt to property value ratio*] and that debt service would never exceed 10.0 percent of total (general fund) revenue [*debt service to total revenue ratio*].

The reasoning behind this decision was that a formal debt policy of this kind would help retain Fairfax County’s prized AAA credit rating, allowing it to borrow funds at the lowest possible cost. The policy has been implemented fully since its adoption, causing the county to postpone some previously planned investments. The county has maintained its AAA bond rating.

Simple, uniform financial reporting should be a top priority for national regulators. International reporting standards can provide a starting point for national reform. A national commission, with representatives from local and central government, credit market institutions and auditors, can establish national accounting standards that are consistent with international practice while addressing specific national information needs. A single set of municipal financial reporting documents should serve the needs of both the credit market and Government oversight. For municipalities above some threshold size, independent auditing of financial reports should be required.

At present, few countries require that municipal financial reports be independently audited or made available to the public. Some countries even prohibit public access to local financial accounts. Public disclosure of municipal budgets and financial reports is essential to efficient credit analysis, as well as to local fiscal accountability. Over the intermediate term, steps to provide the market with reliable, timely information on which to base credit judgments will do as much as any other policy initiative to consolidate development of the local credit market.

Debt Limits. In controlling local debt levels, national governments use many of the same ratios and other standards described in this Toolkit. It is inherently far more difficult, however, to anticipate how different risk factors will weigh against one another in the future and to devise a rule intended to apply to all local borrowing than it is to assess the risks involved in a single, specific debt issue. National rules that limit local borrowing try to guard against high-risk municipal borrowing situations, but they do so at the expense of flexibility.

Table 2 summarizes the key provisions in several countries' recently established municipal debt limits. These provisions reflect the "state of the art" in limiting credit risk as understood by countries themselves and their international advisors.

Table 2
Municipal Debt Limitations
Selected Countries

Country	Debt Service Ratio Limit	Debt “Revenue” Limit	Other Restrictions
Lithuania (proposed)	15 percent of total revenue, excluding earmarked grants	Borrowing cannot exceed 30 percent of total “revenue” in approved budget.	<ul style="list-style-type: none"> i. Short-term loans must be repaid within fiscal year ii. No State guarantees iii. Ministry of Finance can impose lower borrowing ceiling for individual municipalities based on budget performance iv. Long-term credit can be used only for investment
Poland	15 percent of total revenue (debt service includes potential liability under guarantee commitments)	None	<ul style="list-style-type: none"> i. Short-term loans must be repaid within fiscal year ii. No State guarantee, unless explicitly stated iii. Long-term credit only for investment
Brazil	Debt service cannot exceed 15 percent of total revenue <u>or</u> operating surplus for previous year, whichever is less	Borrowing cannot exceed 27 percent of total “revenue” in approved budget	<ul style="list-style-type: none"> i. State governments cannot borrow from their own State bank ii. No new bond issues until 2000 except for refinancing iii. Long-term credit only for investment iv. Restrictions on foreign-currency debt
India	None	None	<ul style="list-style-type: none"> i. No borrowing in foreign currency ii. Long-term credit only for investment iii. Need case-by-case approval of State government for municipal loans or bonds
Colombia	Debt service limit is 30 percent of <u>recurring</u> revenue as long as debt service is also less than 40 percent of operating surplus. When debt service exceeds 40 percent of operating surplus, municipalities are subject to a variety of fiscal controls .	None	<ul style="list-style-type: none"> I. Temporary imposition of 1.5 risk weighting on municipal loans for capital adequacy calculation ii. Collateral requirement can be up to 150 percent of loan value iii. A limit is placed on the <u>stock</u> of outstanding debt relative to recurring revenue.

Table 3
Using Financial Data to Assess Credit Risk and Improve Creditworthiness

Steps to Improve Systemic Creditworthiness

1. Standardize municipal financial reporting to include information important to credit markets
2. Require public disclosure of all municipal financial reports and budgets
3. Require independent auditing of municipal financial reports, for municipalities above size limit
4. Monitor local debt service and financial ratios at national or provincial level
5. Establish debt ceiling rules for local governments that incorporate key credit risk measures

Measures of Local Credit Risk

1. *Ratio of debt service to recurring revenues*
Ratio of debt service to operating surplus
 A ratio at the high end of the national distribution is a “red flag” of potential credit risk.
2. *Ratio of debt service to total revenue*
 Rule of thumb: ratio greater than 15 percent deserves closer analysis
3. *Ratio of debt outstanding to local tax base*
 Useful when municipalities depend primarily on one source of local revenue and have rate flexibility
4. *Ratio of debt per capita*
 Compare with universe distribution of ratio for all municipalities
5. *Local revenue flexibility*
 Is a municipality at the state-imposed or provincially-imposed ceiling for local tax rates?
6. *Local budget strength*
 —Operating surplus trend. Strong if positive and increasing. Compare to national universe.
 —Total surplus. Strong if positive for several consecutive years.
7. *Debt structure*
 Indicators of credit risk
 - . high foreign currency debt
 - . large fluctuations in annual debt service, below maturities
 - . large amounts of short-term debt that must be rolled over
 - . high reliance on borrowing for annual “revenue”

V. PLEDGED SECURITY

Historically, the primary pledge supporting municipal debt has been the General Obligation (GO) pledge. The GO pledge commits the borrowing municipality to take any and all steps necessary to ensure full and timely payment of debt service. In the United States, the ultimate security behind the GO pledge has been the ability to raise local property tax rates to whatever level is necessary to meet debt payment obligations.

The GO pledge has lost some of its potency. Many local jurisdictions in the United States no longer have the legal right to raise property tax rates without limitation. State-imposed ceilings may limit local taxing discretion, or the law may require that voters approve by referendum any local tax hike. As the public finance community discovered when Orange County, California defaulted on its debt, voters may refuse to authorize tax increases even when by standard financial measures they can afford the tax payments.

With greater frequency, municipalities in developing countries have defaulted on debt. Sometimes, a local government will find that it lacks the legal power to increase taxes, because all local tax rates are at the nationally imposed ceiling. It cannot cut expenditures by reducing municipal employment or wages, because there are national laws protecting public-sector jobs and setting uniform wage levels. The GO pledge then has little legal power. In other scenarios, a municipality may choose not to pay debt service, perhaps because the debt was incurred by a previous administration belonging to a different political party. In this case, the willingness to pay is lacking, and a lender may have no satisfactory legal recourse.

In view of the imperfect security provided by the GO pledge, international borrowing is often reinforced by an additional, specific pledge of revenue, property collateral, or third-party guarantee.

Government Guarantees

A sovereign guarantee does the best job of reducing municipal credit risk—but at a cost. When local loans are guaranteed by the State, neither the borrower nor the lender has much incentive to examine the underlying risks of the loan or the economics of the investment projects it will finance. In the event of default, neither party will suffer injury. Government guarantees of this kind undermine development of a true municipal credit market, where the parties themselves have to assess credit risks and the municipality has to decide whether the benefits of investment justify borrowing at the market cost of capital.

Revenue Pledges

More consistent with local credit market development are revenue pledges that reduce lender risk by providing the lender access to specific revenue streams to satisfy debt service obligations. The pledged revenue may consist of a dedicated portion of local tax collections, a specific source of recurring inter-governmental transfers, or the fee income generated by a specific municipal economic

activity. The box illustrates some of the many different kinds of revenue pledges used in the developing world to strengthen the underlying GO pledge.

The mechanisms employed to collect and segregate revenues will help determine their effectiveness in reducing credit risk. A formal trust fund, overseen by an independent trustee, will add weight to the revenue pledge. The pledge and security mechanism must have formal legislative authorization; the revenue stream must provide ample coverage for debt service. The security arrangement that earmarks the revenue stream for debt payment must be authorized for the life of the debt it supports. In some countries, maintaining a dedicated revenue fund at an independent commercial bank, rather than at a State bank, will be viewed as a positive step to insulate the fund from capture during periods of public-sector budgetary stress.

Intercepts

Intercept arrangements are a special case of revenue pledging. They authorize the lender to collect debt service payment directly from a higher-level government in the event that local debt servicing obligations are not met. An “intercept” typically is attached to a specific intergovernmental revenue source. For example, in Brazil several states have arrangements with their Municipal Development Funds which allow debt-service payments to be deducted at source from a municipality’s revenue sharing entitlements, once the municipality falls into arrears in debt servicing.

Intercepts have proved highly effective in reducing municipal credit risk for lenders. The companion Toolkit on Municipal Development Funds demonstrates that Funds with intercept arrangements experience much lower non-performing loan rates than Funds that operate without intercepts. Intercept provisions, however, frequently fly in the face of decentralization initiatives intended to place more responsibility for budget choices on local governments. Intercept payments can become mere book transfers at the central level. This is especially true when, as often is the case, the same authority that makes loans to municipal governments is responsible for allocating grants and handling local governments’ financial accounts. In these cases, the central authority may merely credit itself with the loan payment due, subtract the amount from the revenue sharing or grant payment to the

Examples of Pledged Revenue Streams

Colombia. The Colombian Constitution of 1987 guarantees local governments an increasing share of the nationally collected Value Added Tax. The tax is automatically distributed by formula. Colombian municipalities have used the Constitutional promise of future revenue growth as the primary security pledge behind a surge in local borrowing. A municipality signs an agreement with a lending bank, according to which national revenue sharing payments go into a special account which the bank can access directly to satisfy debt service obligations.

Bogotá, Colombia. A separate law provides that 15 percent of the nationally collected, local property tax must be used to finance environmental investment. Bogota has used the revenue stream set aside by this law as the primary backing for a series of municipal bonds financing wastewater collection and treatment plant investment.

Province of Tierra del Fuego, Argentina. Like several Argentine provincial governments, Tierra del Fuego issues notes and bonds collateralized by gas and oil royalty payments payable in pesos on a monthly basis by holders of long-term concessions. Duff & Phelps rates the six-year US dollar notes at BB-, superior to the B general obligation rating of the province’s debt without collateral backing.

municipality, and send the municipality a check for the difference. Local authorities may not even be aware that this process has taken place.

Strategies to reduce municipal credit risk then must be traded off against strategies to increase local fiscal choice.

Property Collateral

In the countries of Eastern Europe and the former Soviet Union, where municipalities either have a tradition of property ownership or have been transferred property from central government, real property often is used as collateral to strengthen the GO pledge. Banks originally accepted a wide variety of municipal property as collateral. However, as they have gained experience with municipal lending, banks have become more selective. Only property that can reasonably be transferred to private ownership, and is reasonably liquid, is accepted as collateral. This includes well-situated vacant land, commercial buildings owned by the municipality, agricultural property, and other types of “private” property owned by a municipality. Property used for public services—like schools or the town hall—should not be accepted by banks as collateral. In some countries, laws expressly forbid hypothecating this type of property.

The value of real property as loan collateral depends in part upon the court procedures to be followed in the event of default. If it takes many years of court proceedings to foreclose upon real property collateral, its value as a security pledge is diminished.

Lenders in the Central and Eastern European region as well as elsewhere recently have moved toward more liquid forms of property collateral. Lenders may require that municipal borrowers maintain their ordinary business accounts with the lending bank and grant the lender the right to automatically debit any loan payments due. Or they may require that the municipality prepare pre-dated payment authorizations corresponding to each debt service payment. The lending bank can automatically cash these when the payment date arrives. Liquid collateral of this kind has proved extremely effective in reducing loan defaults. In fact, simple mechanisms of this type essentially eliminate credit risk except in the extreme case of local financial collapse.

Variety of Collateral Arrangements on Municipal Loans in the Czech Republic (in order of frequency of use)

1. Promissory Notes (advance-dated notes that bank can cash at time debt service is due)
 2. Municipal Real Property
 3. Dedicated Revenue Stream
 4. Financial Assets (shares of stock received by municipality during privatization)
-

Bond Insurance and Letters of Credit

Financial guarantee insurance is a common form of credit enhancement in developed countries. About half the municipal bonds issued in the United States, for example, now carry third-party guarantees of principal and interest payments from specialized insurers. In earlier periods, it was

common for bonds to be secured by bank letters of credit. Bond insurance has proved to be very effective in reducing credit risk and cost-efficient for most municipal issuers. Municipalities pay a fee to buy bond insurance. In the United States, backing by a well-established insurance company is sufficient to raise the credit rating of an issue from BBB to AAA. The interest savings more than compensate the issuer for insurance costs.

International aid agencies and multi-lateral banks have drawn upon this experience to propose setting up self-financing guarantee funds that would reduce municipal credit risk in developing countries. These proposals deserve to be approached with caution.

In developed countries, municipal bond insurance is based on the presumption that the pool of insured issues will have extremely low rates of default. Typically, only bonds that are investment-grade (BBB or higher) on their own qualify for insurance pools. In the words of Standard & Poors “[I]t is presumed that insurers only take on liabilities judged to have minimal loss potential, except under extreme economic conditions.” Insurance in effect protects the investor from the occurrence of a random event of very low probability, but which can have a large financial impact on the investor if it materializes.

Bond or loan insurance in a developing-country market operates much differently. The underlying loan pool is much riskier. Typically, none of the underlying loans or bonds would be rated as high as BBB by international standards. This implies that loss rates in the insurance pool will be far higher, and insurance fees would have to be much higher for the insurer to break even. In addition, the managers of the insurance pool take on much greater responsibilities. Because independent-rating agencies do not rate municipal debt issues, or, where they do, the underlying risk implied by the rating is high, the operators of the bond pool must perform a careful analysis of credit risk on their own, before providing insurance. They also must perform continuing active surveillance of their insured issues, and stand ready to arrange work-out solutions for issuers on the verge of default. These are skill-intensive and labor-intensive activities, which add to the costs of insurance. The insurer is also at risk for any systemic changes, such as modification of revenue sharing formulas, that could reduce the ability to pay of all municipal borrowers.

Despite numerous proposals world-wide, no developing country has yet established a self-financing municipal loan or municipal bond guaranty fund. Multi-lateral banks pursuing this possibility need to think through the operation of such a fund, the costs of operating it, and the fees that would have to be charged to borrowers to make it self-sustaining. In a voluntary insurance system, the largest and financially most secure municipalities probably would choose not to participate, since insurance costs would outweigh interest rate savings. An insurance fund that requires substantial State subsidies to function has the same drawbacks as a direct State guarantee, by reducing the incentives for a municipality and lender to perform their own credit analysis and to do as much as possible to reduce underlying credit risk. A poorly structured guarantee fund can actually increase underlying default risk.

Municipal Project Finance

Project finance is a limited-recourse type of credit financing. In strict project financing, the debt issued to finance an investment project is supported only by the revenue stream the project generates and by the project's assets. Pure project financing is found most often in the private sector—often in conjunction with the privatization of local public services like water supply or solid waste removal and disposal. However, borrowing by local governments or local public enterprises also can be supported solely by project revenues, or primarily by project revenues reinforced by additional tax pledges.

In project financing, both lender and borrower share a stake in the economic success of the project that is financed. The lender's repayment depends on this success. Consequently, it is in both parties' interest to perform a careful economic analysis of the project and the revenue streams it will produce before a credit agreement is reached. The factors to be examined are the same ones that go into calculating an expected Financial Rate of Return (FRR) for a project. In fact, one of the main advantages of project financing is that the FRR, and the risks surrounding it, become the principal element in calculating the creditworthiness of a loan. In the other kinds of municipal borrowing reviewed here, a loan's creditworthiness is quite independent of a project's economic or financial viability.

The risks of local public sector project financing are twofold. One set of risks surrounds the inherent economic and financial viability of the project as planned. A second set of risks is political. These include *regulatory risk*—the risk that regulatory authorities will not allow the water tariff, mass transit tariff, or other fee increases that are necessary to make a project self-financing; *competition risk*—the risk that competing projects will be approved or subsidized by government, undercutting demand for project use; and *expropriation risk*—the risk that government will take over a project's assets or cancel the owners' operating concession.

Both sets of risks can be mitigated by covenants incorporated into bond issues or loans (see box). However, political pressures can easily override covenant terms. For this reason, project

Covenant Terms and Other Arrangements for Project Financing in the Local Public Sector

1. The public authority operating the project is legally separated from the municipal government, as a stand-alone water authority, toll road authority, etc. This step insulates the authority's budget and revenues from claims by the municipal government.
 2. Bond or loan covenants require that tariffs automatically be adjusted periodically to maintain a prescribed minimum relation between net revenues and debt service (e.g., a minimum debt service coverage ratio of 1.3:1).
 3. Bond or loan covenants include a "non-compete" clause. In the case of a toll road, for example, a loan covenant could prohibit the government from building a parallel "free" highway for 20 years.
 4. Covenants can include maintenance and performance standards. In the case of water systems, for example, the water authority may be required to carry out a well-defined maintenance schedule and to keep unaccounted-for water below certain maximum levels. If the public authority fails to meet these standards, the lender can take well-defined steps to change management or can call the loan.
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financing within the local public sector has advanced far more slowly than project financing for privatized facilities.