

Credit Enhancement: The Missing Link in Infrastructure Finance

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Introduction

Infrastructure projects are viewed as long-term assets in search of long-term financing, while pension and life insurance funds have long-term liabilities and are in search of long-term assets. Conceptually, this should represent a match made in heaven as the long economic life and essential public service role of infrastructure assets creates annuity value for long-term investors that is difficult to be matched by any corporate or structured finance sector instrument

While an infrastructure project's cash flow performance will vary over its life cycle, and with economic, financial, regulatory or competitive cycles (that is, its default risk will fluctuate over time), there is little risk of winding down many infrastructure projects such as a national airport, or a state highway, or a municipal water system. If such projects have a strong enough economic argument for repaying its debt over the life of their concession or off-take agreement, then they should represent good candidates for long-term debt. Nevertheless, long-term debt remains "just out of reach" for all but a few fortunate projects that manage to attract the US private placement market; and even there, a secondary market for these debt instruments has yet to evolve. The current constraints of commercial bank lending, the marginal success of migrating infrastructure project debt to the capital markets, and the limited ability of government balance sheets to guarantee infrastructure debt obligations engender the following questions:

1. What is the best way to secure a project's cash flows in order to capitalize on a project's long-term economic value?
2. What financial market solutions can enhance the sustainability and predictability of project cash flows so as to promote long-term finance for infrastructure?

This essay looks at financial market tools that address the current limitations of infrastructure finance. The first step is for project cash flows to be properly secured in a "trust estate" with "covenant provisions" that are designed to keep the project alive. Such covenants have an established track record in the US municipal market through municipal system revenue bonds and infrastructure project bonds, and have resulted in the promotion of long-term finance for infrastructure, secured solely by project or utility system revenues without recourse to a municipal or other sub-national government entity.

The second step is to develop various forms of external credit enhancement that provide support to a project's cash flows during the cycles described above, augmenting its ultimate ability to retire debt by enhancing its current ability to meet debt service requirements. This mitigation of default risk, where the project has ample ability to ultimately retire its debt, can lift the credit quality of a project, making it more acceptable with respect to the investment criteria of institutional funds. Finally, credit enhancement that looks beyond individual projects, to a portfolio of operating infrastructure projects,

can address two long-standing investor concerns for project debt – the inadequate credit quality of individual projects, and the absence of a secondary market.

Infrastructure finance can and should look through economic, regulatory, financial and competitive cycles. It should ascertain a project's capacity to repay debt over its economic life, and anticipate a mix of debt and equity needed in order to promote that capacity. For an investor or lender, the value of an infrastructure project lies in the robustness of its long-term cash flows, both for full-and-timely payment of debt, as well as for the ultimate payment of debt. Alternative schemes that are predicated upon advancing financial returns through debt re-gearing exercises, or that rely solely upon explicit government guarantees, or even worse, on a simplistic faith in the value of a termination payment as a form of implicit government guarantee, are unsustainable by comparison.

Secured Cash Flows: Prelude to Sustainable Infrastructure Finance

The concept of debt security changes from corporate finance to infrastructure finance. In corporate finance, debt is usually issued on an unsecured cash flow basis, payable on parity with other debt or financial obligations of the corporation, without priority or preference (it is "unsecured"). In case challenges occur with the corporation's business plan or competitive position, the debt may also carry a mortgage lien on properties owned by that corporation. In the event of a default that leads to bankruptcy, selling these physical assets, even at a distressed price, enhances debt recovery for the lender or investor.

Infrastructure finance, by contrast, relies on securing project cash flows, since the actual project assets continue to either be owned or heavily regulated by the host government. Recall, for example, that a concession is contractually a "conditional grant" to project cash flows, in exchange for the provision of certain project improvements and service provision to the public (such as lane miles of road with a predetermined ride-ability standard to the driving public, or square footage of a hospital building designed and maintained so that the government can provide specified health care services). An off-take agreement between a privately owned project and a public utility is also contractually conditional upon the availability and delivery of an agreed upon service output (such as million cubic feet of natural gas, or kwh of electricity). A corporate style mortgage lien is meaningless if the asset is government owned, and it has dubious meaning even for a privately owned project if the asset is strategic to a government regulated network.

While various forms of project finance have evolved to facilitate the financing of projects around this conditional grant of cash flows, the original, and still the best model for this understanding comes from US municipal revenue bond market. This model makes no pretense concerning the government's full control over the assets, since most revenue bonds are issued by public authorities or special purpose enterprises, and provide an internal structure or "fabric" for securing cash flows that maximizes a project's or enterprise's ability to stay alive and retire its debts over its economic life. This does not

mean that defaults do not happen (or cannot happen), but rather that the project cash flows are protected or proactively structured in such a way as to reduce the probability of default over a project's economic life.

This is an important contrast with corporate finance, which looks to recoveries in a post default situation, either through a business restructuring or liquidation. It also contrasts to structured finance, which looks for the quickest "exit strategy" at the first sign of trouble, through its debt acceleration clauses, that virtually guarantee a debt default if debt service coverage falls below a certain threshold level, and can result in an asset liquidation in order to enhance recoveries. While the latter debt structure makes perfect sense for real estate transactions, it is not a good model for infrastructure. The municipal revenue bond model recognizes that both full-and-timely payment and ultimate payment are embedded in the project's cash flows, and nowhere else.

Anatomy of a Revenue Bond

Revenue bonds are issued under a master trust indenture, which governs the authority to issue debt, and generate project revenue to repay current and future debt issuance. The indenture includes provisions, known as "covenants," which are designed to secure the project's cash flows, and enhance their ability to meet debt service payments. Below are some of the key covenants:

1. A revenue bond is a secured financing, granting a lien (or security) on project revenues as well as other accounts that are held in a "trust estate" on behalf of investors, to be managed by a trustee over the life of the debt. In the US municipal bond market, the public authority or enterprise often operates a system of projects, which provides cross-collateralization of financial obligations under the trust. The financial obligations are secured solely by revenues of the system and rarely provide recourse to a parent government. This is an important distinction because outside of the US, the common conception is that a government owned enterprise is implicitly backed by its parent government.
2. A revenue bond describes the purposes for which debt can be issued and may include certain financial tests for future debt issuance. This additional bonds test can take a forward and backward look toward project revenues – specifying minimum historical and projected debt service coverage levels as a test for additional debt issuance.
3. A revenue bond entrusts authority to charge and collect rates for services provided, and provides for when and how such rates can be adjusted. It also specifies the frequency of "cash sweeps" from the project to the trust estate.
4. After creation of the trust estate, a revenue bond specifies a "rate covenant" that requires rates and charges to be set so as to achieve a minimum expected debt service level. Whereas 1X debt service coverage denotes "sum

sufficiency,” and is the minimum coverage needed in order to avert a payment default, the rate covenant prescribes an additional cash flow cushion above sum sufficiency for “whatever may happen.” In theory, this added cushion should vary according to the expected cash flow volatility of each project. Therefore a project with little cash flow volatility should require a lower rate covenant than a project with higher cash flow volatility. In practice, rate covenants, quickly fall into conventional patterns. In the US municipal revenue bond market, 1.2X to 1.5X rate covenants have become standard.

5. The security for a revenue bond creates a “priority and preference of payments” or “cash flow waterfall,” that provides first for the payment of operating and maintenance costs, followed by funding of capital expenditures, debt service costs, as well as contributions to various reserves. After senior debt service is paid, subordinated debt is paid, followed at the end of the waterfall by residual cash flow distributions. For publicly owned entities, these distributions can take the form of transfers to a government parent or to project reserves, or for “any public purpose.” For privately owned or concession based entities, distributions would be for equity. Cash flow waterfalls vary but all follow this basic pattern.

All of the prescribed activities (operations and maintenance, capital expenditure and debt service, as well as required reserves) have dedicated accounts within the indenture. The trustee is instructed by the indenture how and when to distribute trustee managed receipts into these various accounts. Security and preference over project cash flows are two financial concepts that distinguish revenue bonds, and for that matter, secured forms of infrastructure finance, from unsecured corporate financing. The third distinction is the general absence of a mortgage lien, although some forms of municipal revenue bonds (private activity bonds, for instance) can contain a mortgage lien on property.

6. Reserve fund covenants are another important feature of revenue bonds. They are usually funded upfront, and provide a form of internal credit enhancement to project cash flows. The most important of these is the debt service reserve fund, which is typically funded as a percentage of outstanding principal (usually 10%), or at average or maximum annual debt service. Note that in the US municipal revenue bond market, where defaults are quite low, that the debt service reserve fund is usually equal to one year of debt service payments. This contrasts sharply with most PPP markets, where the debt service reserve varies from three to six months of debt service. This contrast is important since long-term debt is available within the US municipal market for many types of revenue bonds.

7. The debt service reserve fund is a dedicated and restricted fund. That is, it can only be used by the trustee to fulfill a debt service payment obligation in the event of a cash flow deficiency in the debt service account. The debt service reserve is proactive in its response, preventing a payment event of default, although calling upon this reserve can constitute a technical event of default (meaning that the debt service payment was made, but that it could not be made fully from available

project revenues). Most revenue bond trust indentures also contain language that requires residual cash flow to replenish the debt service reserve account for any drawdown over a period of months.

Other reserves can include the major maintenance reserve and an operating reserve. These are dedicated but often unrestricted accounts, which signify that funds are set aside for their dedicated purpose (an operating reserve for meeting operating cash flow deficiencies, or a major maintenance reserve for meeting future capital expenditure requirements), but that in a cash flow emergency, they can also be used by the trustee in order to pay debt service. The major maintenance reserve may be fully funded upfront, or may require monthly cash flow contributions so that by a certain year, the reserve contains enough cash in order to meet a scheduled facility repair or replacement requirement (as determined by an independent engineer's recommendations). These reserves will also specify replenishment periods after a draw down.

The Cash-Trap Mechanism

Revenue bonds usually do not specify a “cash-trap mechanism,” other than for the replenishment of reserves after a drawdown. This is because the rate covenant is proactive, mandating that rates be set to produce a certain cash flow coverage of debt service above sum sufficiency (1X) – a “cash build-up” rather than a “cash-trap” mechanism.”

Public private partnership project (PPP) financings, on the other hand, almost universally have a cash-trap mechanism, which serves as a reactive, rather than a proactive, covenant, since it prohibits equity distributions if actual debt service coverage falls below some minimum threshold above sum sufficiency. This can often range from 1.1X to 1.6X debt service coverage. The trapped cash is escrowed and is used to either begin retiring senior debt or to fill a restricted sinking fund for eventual debt retirement. Residual cash will continue to be trapped for debt amortization until project cash flows are able to demonstrate a minimum debt service coverage over a specified period of time (such as for a consecutive number of financial reporting periods). Equity distributions can resume once these tests have been satisfied. Residual cash in a revenue bond structure (after all of the covenants have been satisfied) can be used for any lawful government purpose.

External Credit Enhancement of Underlying Project Cash Flows

The role of external credit enhancement is to bolster project cash flows in support of senior debt service. For projects where the asset is owned or regulated by a government, credit enhancement should mitigate default risk rather than enhance recovery value. This can take the form of a standby line of credit which is available to meet cash flow shortfalls in senior debt service payments, thereby mitigating project default risk. Repayment of the line of credit is usually subordinated to the project's senior debt. This requires that the senior project debt have a shortfall interest rate provision that is activated when the line of credit is drawdown to offset a cash flow shortfall in the

payment of current debt service. A shortfall or drawdown interest rate would need to be higher than the senior debt interest rate in order to compensate the credit enhancement provider for covering deficiency payment risk. It also requires that the credit enhancement provider becomes party to an inter-creditor agreement with other project lenders or investors.

The mitigation of default risk allows for the senior debt of a project to achieve a higher rating category than is possible from the credit fundamentals of the project on a standalone basis. This is especially useful for projects that already have robust or adequate coverage of senior debt service, but where the perception of certain tail risks results in a rating outcome that is below the investment threshold for certain institutional investors (for example, the project debt is rated 'BB,' but a fund's investment guidelines require a minimum rating of 'BBB'). External credit enhancement is also useful for projects with marginal current coverage of senior debt service, but with an expected economic capacity to ultimately repay debt over the life of the project. The line of credit can cover intermittent (but not structural) difficulties in a project's ability to meet its debt service requirements. External credit enhancement is of no value for a project with insufficient ability to ultimately retire senior debt, since its provision would only stall but not prevent an ultimate debt service payment default.

The main characteristics of external credit enhancement are as follows:

1. An issuer (where the project SPV or its legal conduit is issuer) remains the sole obligor for project debt, but its operations are supported by another party with a stronger credit profile than the issuer.
2. External credit enhancement can derive from statutory authority if provided by a government, or contractual authority if provided by a corporation, bank or multi-lateral institution.
3. External credit enhancement must have limited conditions precedent to a drawdown. That is, it must be available to offset debt service shortfalls. This requires sufficient and well considered criteria for project eligibility, for representations and warranties of the contractual counterparties, and inter-creditor provisions that essentially bring the credit enhancement provider into the project waterfall alongside other lenders or investors.
4. External credit enhancement reacts to some kind of trustee initiated trigger, but in order to mitigate default risk, it should be proactive (whereby the trigger is activated by the insufficiency of funds within a debt service account some days in advance of a scheduled payment date). If the trigger is reactive (whereby the trigger is activated post-default), then payment provisions from the credit enhancement provider should provide for a very quick response within the allowable cure period for the senior project debt. Otherwise, the credit enhancement will have limited value as mitigation for default risk. Mitigating default risk and preventing a termination event is the best way to recover capital.

Credit enhancement stabilizes project cash flows which broadens the investment opportunities for domestic and international debt markets. Stabilized project cash flows

also allow for progressively longer debt tenures, correcting a long-standing mismatch between the term of debt and the useful life of an infrastructure asset. Credit enhancement of senior project debt is a more efficient allocation of capital than is a government guarantee, since it promotes the development of domestic debt markets, as well as of local project feasibility consultancy skills. It also creates a healthy tension between the subordinated debt and equity. This produces quicker and more proactive initiatives from project operators to rectify shortcomings in project performance.

The Next Big Step

At the individual project level, there are a few but significant examples of credit enhancement already at work. The appendix below describes projects where the financing of senior debt benefitted from some form of external credit enhancement which was geared toward the mitigation of default risk rather than the enhancement of recovery value.

The next step is to transpose this effort to a portfolio of infrastructure projects. This will achieve scale and diversity of investment, in addition to the requisite credit quality thresholds, potentially igniting secondary market activity once the project portfolio achieves a certain scale. Since credit enhancement is a loan and not a gift, this capital can potentially be recycled to new projects as the facility draw-downs are replenished and as the original project debt is retired, so that infrastructure finance becomes sustainable and regenerative.

Infrastructure projects are long-term assets always in search of long-term financing that in most parts of world does not exist, and pension funds have long-term liabilities and are always in search of long-term annuity style assets that are hard to find. This dichotomy represents the perfect fit, and external credit enhancement is the missing link to make it happen.

Appendix: Examples of Credit Enhancement for Project Debt

Credit Enhancement Through Supplemental Income

Airport Motorway Trust project, Australia.

- The government issues an Infrastructure Bond at its cost of funds and lends the proceeds to the toll road project company, which invests the proceeds at the market rate.
- The difference between the cost of interest on the Infrastructure Bond and the interest income on the invested proceeds provides supplemental income to the project.
- In the early years of operation, when Airport Motorway's toll revenues barely provided over 1X debt service coverage, total coverage with supplemental interest income was 2X.

- This dedicated and supplemental revenue stream allowed project debt to have a much higher rating and lower cost of capital than if it were secured only by toll revenue
- The Infrastructure Bond carries a long-term maturity date, which gives the project cash flows ample time to ramp-up. The bond is retired from the invested proceeds.
- Thereafter, debt service is payable solely by project revenues.

Credit Enhancement Through Partner Alignment

Alameda Corridor Transportation Authority project, US

- This innovative rail connector project was financed, built and operated by a public sector joint powers authority
- The project provides a rail connection between the Ports of Long Beach and Los Angeles and the central rail yards of Los Angeles
- The authority is a special purpose entity with no independent revenue generating ability. Thus, its bonds represent a special obligation, secured by entrusted revenues – in this case by container charges payable by the private railroads that use the connector.
- If there is any shortfall in the amount available for debt service, the Port Authorities of Long Beach and Los Angeles have contractually agreed to provide shortfall advances.
- Senior debt is also credit enhanced by a layer of subordinated debt
- Total indebtedness for the project was reduced by a US Department of Transportation (USDOT) construction grant, making the debt more sustainable from container charges.
- These layers of credit enhancement allowed for a higher rating and a lower cost of capital for both the senior and subordinate debt.

Credit Enhancement Through Bundling of Project Cash Flows

Fideicomiso de Inversora Bursatil project, Mexico

- The financing consists of the bundling of debt from 4 separate toll road projects, which have separate project concession agreements, into one financing trust
- All four projects are organized under separate SPVs, and have established operating track records. One has seen declining traffic and revenue in recent years. The others continue to see growth in both traffic and revenue.
- In this transaction, the bundled assets have geographical diversity, although in other transactions, the bundled assets are specific to one state.
- Project cash flows first pay operating and capex costs under their separate concession agreements.
- Residual cash flows from each project are then swept into a master trust where they pay debt service.
- Other credit enhancements included funded capex and debt service reserve funds.
- This bundling of project cash flows lowers default risk by allowing the project revenues to cross-collateralize each other, leading to a higher debt rating and a lower cost of capital

Credit Enhancement Through Subordinated Debt

The Transportation Infrastructure Finance and Innovation Act (TIFIA) program, USDOT

- TIFIA provides subordinate debt, guarantees or lines of credit to eligible surface transportation projects
- Part of the eligibility criteria is that the use of subordinated debt lifts the credit quality of the senior project debt to investment grade. Without the credit enhancement, the likely rating for the senior lien project debt would be below investment grade.
- This program has already credit enhanced the senior debt of over 24 billion in surface transportation projects in the US.