

Bundling

A Growing Trend As Stakeholders Look To Unlock The Potential Of The Infrastructure Asset Class

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Introduction

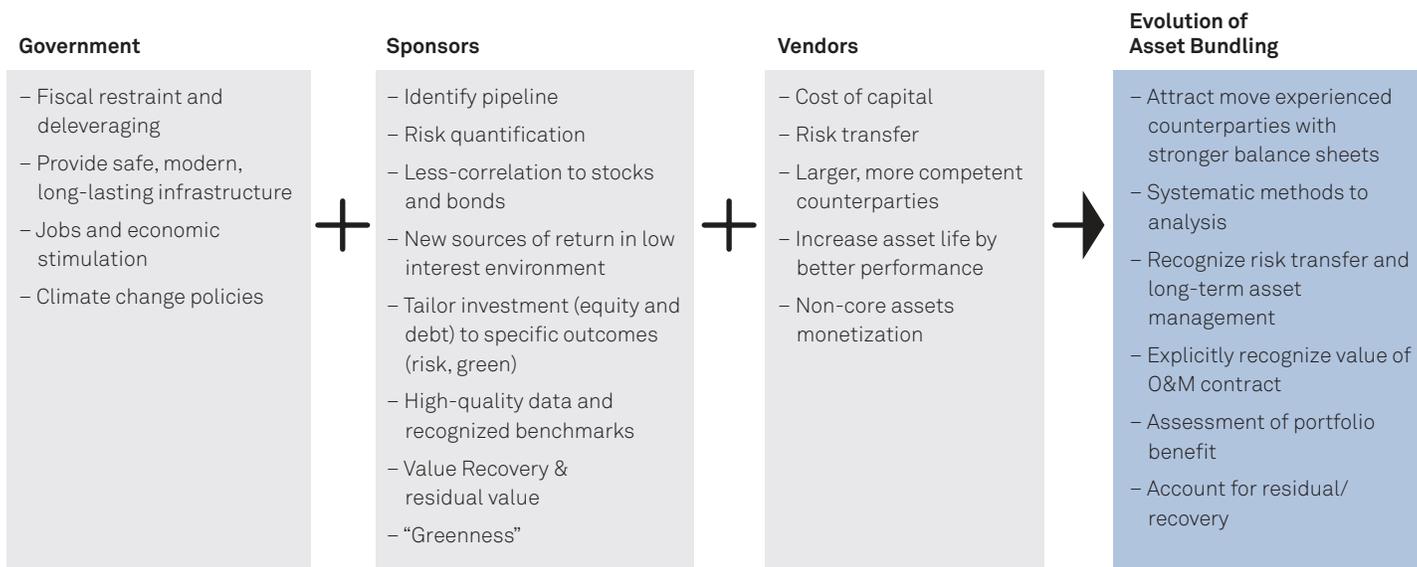
In the ongoing debate over the need for global infrastructure investment, the focus generally falls on the financing gap and the hundreds of billions of dollars that need to be deployed to fill it. But while huge—often unfathomable—numbers make for great headlines, this big-picture discourse often falls short of discussing practical, real-world approaches to the problem.

In this light, S&P Global Ratings outlines some of the bundling credit aspects observed in our ratings of a selection of “bundled” infrastructure asset financings across different asset classes. In doing so, we also highlight the analytical approach used in ratings in this sector. Examples we discuss in this report include the public-private partnership (PPP or P3) Plenary Walsh Keystone Partners LLC (aka Penn Bridges) project to replace 558 deficient bridges in Pennsylvania, and Vela Energy Finance S.A.’s project financing 42 solar-energy parks in Spain.

Such bundling of infrastructure assets is gaining momentum, driven by the needs of the diverse group of stakeholders involved in the supply, funding, construction, and maintenance of infrastructure (see chart 1). This includes governments and their constituents, institutional (equity and debt) investors, and vendors such as contractors, and equipment suppliers. Each of these stakeholders has different needs and, hence, motivations. This has led to widespread use of bundling in the private sector, as well as growing interest in bundled P3 opportunities.

There is a wide range of bundling approaches being used today, and the market continues to create new types of structures—particularly as new asset classes emerge and governments, and/or multilateral agencies look for solutions to fund smaller assets or support new markets. Chart 2 illustrates some of the types of bundling approaches we’ve observed and evaluated in our ratings, along with examples of different asset types that have been bundled.

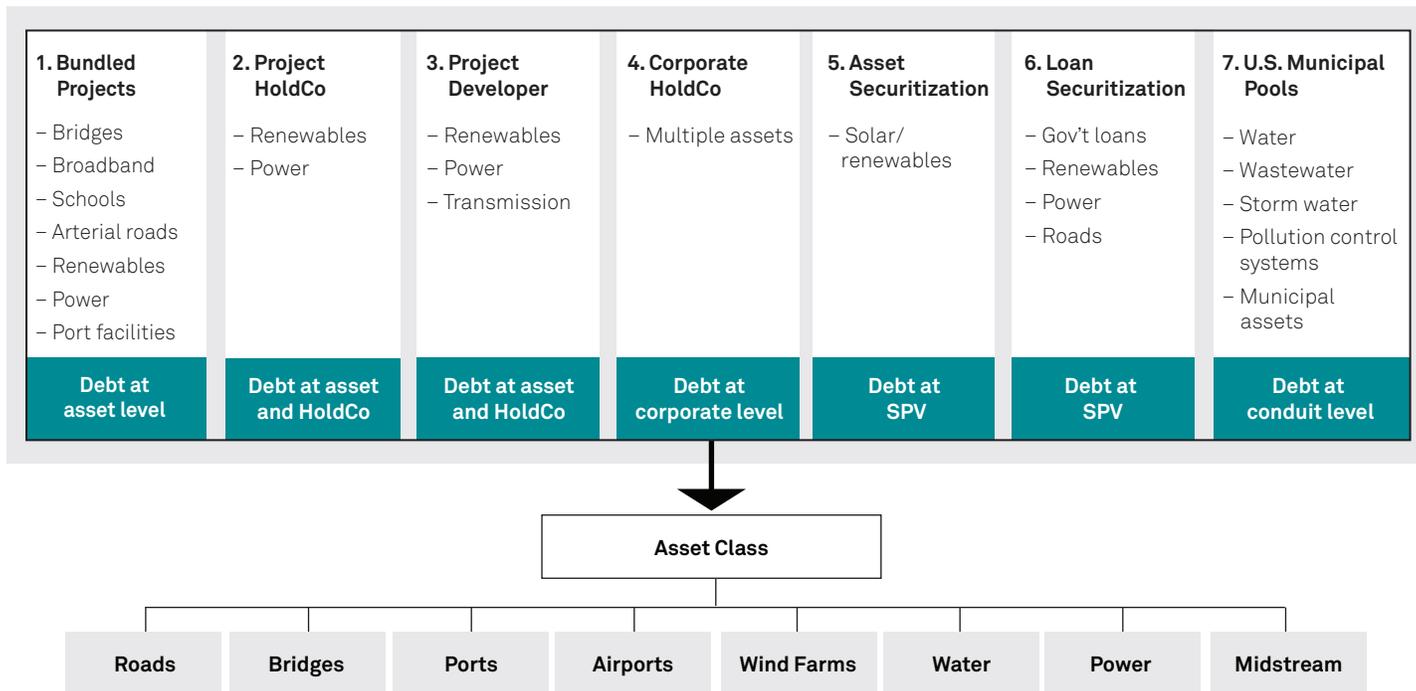
Chart 1 – Stakeholders’ Considerations Drive Bundling Evolution



O&M – Operations and maintenance. Source: S&P Global Ratings.

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Chart 2 – Examples Of “Bundled” Infrastructure Approaches



SPV – Special purpose vehicle. Source: S&P Global Ratings.

The concept of asset bundling is not new. Corporate vehicles that aggregate assets are well established. There have been instances where governments have packaged assets into a single financing to meet scale requirements or to improve credit strengths by attracting larger, more experienced contractors. And while bundling can complicate the credit analysis of a transaction, we’ve observed that it can also, when executed, lead to the opening of new sources of capital for infrastructure. An example of this approach is the Penn Bridges project (Plenary Walsh Keystone Partners LLC), in which the state’s Department of Transportation (PennDOT) bundled 558 bridges.

In a presentation to the Public Private Transportation Partnership Board on Sept. 27, 2013, Director Office of Policy & Public Private Partnerships Bryan A. Kendro said the decision for this P3 approach was to:

- Replace structurally deficient bridges more quickly;
- Standardize design and construction;
- Provide better value to taxpayers;
- Provide economy-of-scale savings and lower life-cycle costs; and
- Free up dollars for other projects.

We’ve observed that scale is an important factor in achieving cost-efficient financing of construction and/or operations because infrastructure is so capital-intensive by nature. One infrastructure asset type that we think might attract bundling structures in the future is the U.S. water industry, which is still largely decentralized with more than 50,000 authorities and with the average infrastructure, which is more than 50 years old. We’ve also observed that interest in bundling water assets is being expressed in other countries.

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Individual renewable energy projects also tend to be fairly small, and we have seen bundling is a strategy that governments and sponsors turn to so as to achieve more efficient or alternative forms of financing, including bundling. For example, an industry group in the U.S. (Solar Access to Public Capital, “SAPC”) was convened by National Renewable Energy Laboratory with the goal of accelerating the solar photovoltaic (PV) industry’s access to public capital through securitized instruments and other investment vehicles. There have been a number of rooftop solar securitization financings we’ve rated in the U.S. that we’ve observed have generated interest in similar approaches by sponsors in other parts of the world.

Stakeholder Considerations And Credit Analysis

S&P Global Ratings has issued ratings on a wide range of bundled infrastructure asset types. Irrespective of the type of bundling structure chosen by governments and/or sponsors (e.g., project financing or rooftop securitization), we’ve observed that bundling transactions appear to share common characteristics (see table 1). We also note that there are certain credit aspects we think are common to bundled transactions (see table 2).

Comparing tables 1 and 2, there are, unsurprisingly, shared factors between the stakeholders’ considerations, our experience with the operability of credit analysis of bundled transactions (the more complex the transaction, the longer and more difficult the analytical exercise is, and/or the more assets there are, the longer time the review takes). For example, use of known proven technology in our experience generally supports both quicker analysis and is a credit benefit under our methodologies. The use of experienced contractors with stronger balance sheets in the context of a design and build contract used in P3 is usually a credit positive for S&P Global Ratings. Similarly, this approach has the potential to support stakeholder goals of faster construction delivery and cost savings as was observed in the Penn Bridges example mentioned above.

Table 1 - Common Characteristics/Features Of Bundled Transactions

Bundling approach	Scale of financing	Contractor experience	Debt tranching	Depreciation/ Tax schedule benefits	Economic portfolio benefit	Monetization of investments	New funding sources
Bundled project financings	✓	✓	✓		✓	✓	
Project finance holding company	✓	✓	✓		✓	✓	✓
Corporate project developer	✓	✓	✓	✓	✓	✓	✓
Corporate companies	✓	✓	✓	✓	✓	✓	✓
Infrastructure asset-backed securities	✓		✓	✓	✓	✓	✓
Project finance collateralized debt obligation portfolios	✓		✓		✓	✓	✓
Public finance long-term municipal pool structure	✓		✓		✓	✓	

Source: S&P Global Ratings.

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Table 2 - Some Common Key Credit Aspects Of Bundled Transactions

Bundling approach	Proven technology	Risk transfer/ Significant data	Ability to scale analysis	Standard contracts	Counterparties with stronger credit	Simple operations	Supportive regulatory regime	Supportive payment regime	Credit portfolio benefit
Bundled project financings	✓	✓	✓	✓	✓	✓	✓	✓	✓
Project finance holding company	✓	✓	✓	✓	✓	✓	✓	✓	✓
Corporate project developer	✓	✓	✓	✓	✓	✓	✓	✓	✓
Corporate companies					✓		✓	✓	✓
Infrastructure asset-backed securities	✓	✓	✓	✓	✓	✓	✓	✓	✓
Project finance collateralized debt obligation portfolios	✓		✓	✓	✓	✓	✓	✓	✓
Public finance long-term municipal pool structure					✓		✓	✓	✓

Source: S&P Global Ratings.

On the other hand, a very diverse bundle of complex heterogeneous technologies could have a portfolio benefit of diversity but the task of analyzing the transaction becomes time-consuming, challenging, and with greater uncertainty as it relates to any potential credit benefit.

In conclusion, we are seeing a rise in bundling structures with increasing interest in infrastructure assets. Furthermore, as different participants get involved and their needs change, we expect to see an evolution in approaches to bundling structures.

Different Approaches to Bundling

Bundled infrastructure transactions come in a number of flavors, and, as discussed above, we fully expect more structures to be developed as stakeholder needs evolve.

Among those structures we've seen (or expect to see more of) are:

- Bundled project financings;
- Transactions involving project finance holding companies;
- Corporate project developers;
- Corporate structures;
- Securitizations of infrastructure assets;
- Project finance collateralized debt obligations (CDOs); and
- Public finance long-term municipal pools.

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Below we provide a high-level description of some of the different methodologies we use to form our view of credit for bundled structures using infrastructure assets along with some practical examples that help illustrate some of the transaction-specific factors that supported our credit analysis in a selection of rated transactions. We also review a summary of certain bundling credit aspects that we identified in our rating analysis of these selected transactions. For full explanations of our methodology and our credit reports on the selected examples, please refer to the linked articles below.

1. Bundled Project Financing Structure

Description

S&P Global Ratings has rated project financing transactions for about 25 years. Often, we've based these ratings on the performance of a single asset, but with new asset types such as renewable distributed generation, or the inclusion of smaller assets in transportation, we've seen the bundling of multiple assets. In such transactions, private capital is used, with debt payments based solely on the cash flow generated by the project.

Our analysis starts with evaluating either construction and/or the performance of the asset(s) supporting the issuance of debt by a special purpose vehicle (SPV). These can often be complex transactions, which tend to be bespoke in terms of the manner in which risks are managed or mitigated by various counterparties for both the construction and operations phases. Hence, the time allocated for the analysis to understand these structures is comparatively more significant than for the analysis of a typical corporate investment.

Bundling credit aspects

A challenge of bundling multiple assets together is that there can be an increase in the risk that a single-asset financing might embody. For example, permitting challenges can be compounded unless there are mitigants to this risk.

Credit strengths we've observed from bundling can include risk transfer to larger, more experienced counterparties that might, in the case of construction projects, facilitate lower build costs and a greater likelihood of on-time delivery. During the operational phase, our project finance methodology might reflect positively on bundling through a positive scoring of operations performance redundancy and also resource risk; factors we use to determine the stand-alone business credit risk of a project.

Bundling a group of assets together in a project can add to the complexity of our analysis; however, we've observed that complexity is mitigated to some extent where structures support a more systematic approach to analysis. Such a systematic approach can be facilitated by assets that are modular in nature (or analysis) such as bridges, renewables, water mains, arterial roads, municipal carparks, broadband, and cargo facilities.

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Vela Energy Project Finance Example

Description

The *Vela Energy transaction* involved the refinancing of bank loans used for construction of a bundle of 42 solar photovoltaic (PV) parks in Spain with permanent bond financing. By bundling 42 solar parks, the sponsors achieved sufficient scale to access capital markets for long-term financing.

Using our project finance methodology as a reference framework (see criteria list below), table 3 illustrates some of the factors that we found aided operability of our bundling analysis and the associated credit strengths and weaknesses that we identified. Note that this illustration doesn't cover all of this credit's strengths and weaknesses discussed in our full analysis "*New Issue: Vela Energy Finance S.A.*", published Oct. 5, 2016. Rather for comparability with the other illustrated examples, some of the credit bundling aspects are highlighted.

Table 3: Vela Energy

Operations Phase

Asset risk	Credit strengths	Credit weaknesses and risk mitigants
O&M management	Relatively simple routine maintenance requirements managed by an experienced operator, Vela Energy	We considered the O&M agreement's cost provisions for the full-service maintenance were on the low end. Hence, our base case assumes more expensive O&M costs, which reflects our view that, over time, PV plants will require greater maintenance, both in term of the frequency of the replacement of parts and also to support the asset life, which is longer than we usually expect. Our base case also takes into account the project's ability to replace the current O&M operator, if necessary, at higher fees.
Technological performance	Predominately use of proven technology	Among the 42 solar parks, there were several plants with modules that had defects (e.g., yellowing, browning, hot spots, and snail tracks) that could hinder performance. We accounted for potential performance deterioration by adjusting our assumptions to reflect increased operations and maintenance costs and higher degradation factors. In addition, this risk was also partly mitigated by certain transactional features such as a dividend lockup mechanism if the equivalent working hours of any solar park doesn't remain at least 15% above the minimum generation threshold, unless remedying measures are implemented.
Resource risk	The bundled project benefited from a resource forecast portfolio effect.	The irradiation data available onsite were limited to 16 sites, so we have assessed the project as having moderate solar resource risk. Per our criteria, our assessment of "moderate" typically applies when there's some uncertainty that resource and raw material will be available at all times in the quantity and quality expected.
Market risk	We assess the regulatory framework as supportive. We forecasted 80%-85% of total revenues are not exposed to electricity price fluctuations because they benefit from a predetermined regulated return. As a result, we assess the transaction as having low exposure to market risk.	

O&M – Operations and maintenance. PV – Photovoltaic. Source: S&P Global Ratings.

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For example, in the evaluation of a bundled bridge project, we observed that a systematic approach to our analysis was possible given a number of factors that included:

- The selection of the type of bridges allow for the independent engineer to bucket them into three types of similar risk profiles. The bridges used proven technology, with no unusual technical challenges with respect to the design and construction of bridge structures.
- Given there were multiple bridges, this meant multiple geotechnical risks to be considered. However, site specific information was supplied at each of the bridge locations including subsurface information available for each bridge abutment and pier location. There was also compensation under the concession for relief events such as for mines, archaeological remains, and unforeseen utilities. Given the relatively high level of information, the geotechnical risk was considered low by independent engineer.

Vela Energy a renewable project provides another illustration (see sidebar on page 7).

2. Project Finance Holding Company Structure

Description

Project finance holding companies structures are based on the performance of single or multiple assets owned by subsidiaries (operating companies or “OpCos”). We’ve observed that debt has been placed at both the OpCo level and holding company (HoldCo) level, or just at the HoldCo level. Based on our assessment of the credit risk for different debt instruments we can see a range of ratings supported by the same underlying assets.

Based on our observations we’ve seen project finance holding company structures used for a variety of purposes, ranging from acquisition vehicles (i.e., taking equity ownership of an OpCo), portfolio optimization, dividend recapitalizations, developer/investor partnerships, and other reasons.

Similar to project finance structures, our analysis starts with evaluating either construction and/or the performance of the OpCos asset(s) supporting the issuance of debt at the HoldCo. Or, the OpCo assets might be unencumbered.

The diversity of the underlying assets can be a credit positive under our methodology. Such benefits include a positive treatment of operational performance that lowers our business risk assessment, and a more favorable treatment of resource risk.

Bundling credit aspects

Based on discussions with market participants, we’ve understood that some deals founder in the market when the complexity of the transaction and the related analysis has been a deterrent for investors. Based on our experience of rating bundled transactions, the standardization of contracts has made them more efficient to assess for rating purposes. In our opinion, greater standardization can support the bundling of smaller infrastructure projects, where significant costs associated with the time to undertake the analysis can make such projects unattractive to investors.

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Eastern Power (formerly TPF II) Project Holding Co.

Description

Eastern Power owns about 4.8 gigawatts of gas-fired generation power in the U.S. The debt of \$1.6 billion at the HoldCo is supported by an operational portfolio of seven assets in two separate power markets that offer capacity payments.

Bundling credit aspects

Factors included:

- Sound operational performance that resulted in very high availability factors among the assets, and;
- Asset diversity with seven plants and two different capacity markets.

3. Corporate Project Developers Structure

Description

We generally evaluate project developer structures under our project developers methodology (a subset of the broader corporate methodology). To be eligible to be rated under this methodology, the bundle of assets must meet certain threshold tests, such as there being at least three distinct operating entities with a low level of expected parental support. These assets can be projects or corporate structures, including utilities.

Typically, a developer conducts its business mainly through operating subsidiaries. The operating subsidiaries are generally financed with nonrecourse debt, either on a corporate finance or project finance basis. Developers have little or no operations of their own, and rely on distributions—such as dividend and fee income received from their diversified portfolio—to service its debt and other expenses. Hence, our analysis starts with evaluating the quality of distributions (QD) from the assets. Our QD assessment represents the stability of distribution streams to the developer and is analogous to the competitive position of a corporate entity. We assess a specific asset QD for those assets that constitute at least 5% of the developer's expected revenue. Recognizing that a developer may have bundled a lot of assets, the methodology only requires an in-depth analysis of unrated assets that comprise 20% of the aggregate distributions the developer receives, or which is highly material for another reason (e.g., it is fast-growing). We assess the other assets that need a QD under a more generic portfolio-based assessment. The developer's overall diversity can affect the overall QD assessment. Significant asset diversity can help insulate a developer's cash flows during a period of stress.

We determine the business risk profile of the developer from a combination of the QD, country risk, and industry risk.

Bundling credit aspects

Factors include:

- Our methodology considers the developer's overall diversity and this can affect the overall QD assessment. Significant asset diversity can help insulate a developer's cash flows during a period of stress, which is a credit positive.

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NRG Yield Project Developer Example

Description

NRG Yield Inc. (NYLD) owns a diversified portfolio of contracted renewable and conventional generation, and thermal infrastructure assets in the U.S.

Bundling credit aspects

Factors included:

- NYLD's sale of substantially all of its output under long-term offtake agreements with investment-grade counterparties, with an average remaining contract duration of about 17 years. Stable cash flows are a credit benefit and the contractual nature facilitated analytical operability.
- While project developers do take construction risk, all of NYLD's assets are operational.
- NYLD also has reasonable scale and scope, with a portfolio of over 50 contracted and quasi-rate-regulated assets. The assets are in 21 states across multiple regulatory regions, enhancing diversification with respect to regional economic conditions. They also use diverse fuels and technologies. However, cash flows are somewhat less diversified, with the largest project contributing almost 15% of distributions/cash flows, and the top three and top five assets contributing about one-third and one-half of distributions/cash flows, respectively.

- The developer being distinct from conglomerates in that they mainly finance their investments on a nonrecourse basis at the subsidiary level.
- Our assessment, as per our criteria, of the developer industry as having a moderately high risk (category '4') based on an analysis of risks common to all developers (see S&P Global Ratings' criteria for assessing industry risk, "*Methodology: Industry Risk*," published Nov. 19, 2013). The categories range from category '1' (very low risk) to category '6' (very high risk) with credit risk increasing with category.

4. Corporate Company Structure

Description

We generally apply this methodology in the infrastructure sector for those corporate entities that don't meet the eligibility requirements to be rated under the project developer methodology or for holding companies that own corporate securitizations and structurally enhanced debt transactions. Examples of non-utility corporations include VINCI S.A., and Fortress Transportation and Infrastructure Investors LLC.

Our analysis is based on the assessment of a corporate issuer's business risk profile, and our approach is to combine our assessments of industry risk, country risk, and competitive position. The corporate criteria is complemented by industry-specific criteria called key credit factors (KCFs). The KCFs describe the industry risk assessments associated with each sector and may identify sector-specific criteria that supersede certain sections of these criteria. The KCFs may also define sector-specific criteria for one or more of the factors in the analysis. For example, the analysis of a regulated utility's competitive position is different from the methodology to evaluate the competitive position of an industrial company.

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5. Infrastructure Asset-Backed Securitization Structure

Description

We generally use this analytical approach for larger bundles of infrastructure assets that include residential rooftop solar, commercial and industrial distributed solar, energy-efficiency loans, property-assessed clean energy (PACE) programs, and stranded utility assets.

Our analysis generally factors in the liability structure, as well as our assessment of the underlying assets and regulatory risk such as net metering/rate restructuring. In areas such as rooftop solar securitization, we've used ratings to principles.

Bundling credit aspects related to rooftop solar securitizations

Factors that we've observed that support a more systematic approach to our analysis of the assets included:

- The use of PV solar panel technology that we generally consider proven.
- Given thousands of assets, technical review by the independent engineer of each PV system is cost-prohibitive. However, in situations where independent engineers have been able to assess the overall installed PV system quality by reviewing the risk in design, procurement, installation, and operations and confirming their opinions of these risks by sampling of documents, site visits, and testing, we can consider taking a systematic approach to our analysis.
- Challenges with resource-risk assessment due to limited data, which may be evaluated by the use of other data or stresses, and the risk-assessment benefit from portfolio benefits due to sufficient diversification of resource regimes.
- Standard threshold in leases/PPAs that could be factored into cash flow analysis.
- Counterparties with different credit strengths, evaluated using portfolio tools.

6. Project Finance Collateralized Debt Obligation Portfolio Structure

Description

The secondary debt markets for infrastructure projects are relatively small—and the absence of large volumes of liquid, investment-grade securities we believe has been a factor in why institutional investors' involvement has historically been limited. However, we understand that there's increasing interest from the market to look for different ways to raise debt and equity capital for infrastructure funding, using either asset-based securitization (as described above) or project finance collateralized debt obligation (infrastructure CDO) structures.

Such structures have the potential to create liquidity by converting a pool of illiquid infrastructure loans or debt into tradable securities. Often the lender may only own a portion of the debt on an infrastructure asset, so refinancing at the asset level isn't always possible. The infrastructure CDO might offer lenders the potential ability to recycle their capital and redeploy into new financings. Securitization can result in tranches with different credit risks and tenors. This has the potential to attract a wide pool of investors, since high-quality short-maturity tranches can be attractive to short-term bond investors or money markets, medium- and longer-term tranche issuance with varying credit qualities can offer alternatives for certain investors relative to government bonds due to the increased yield.

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The debt and equity tranches issued by infrastructure CDOs are paid back from the cash flow generated by the pool of infrastructure loans or bonds. In addition, the infrastructure CDO debt may benefit from overcollateralization of the cash flows for that specific tranche, and the first-loss cushion provided by any equity tranche.

We've observed infrastructure debt that is bundled into infrastructure CDOs has typically been heterogeneous in size, sector, region, credit quality, or tenor. Our ratings analysis falls into two buckets: the asset analysis, and the analysis of the liability structure.

The focus of the asset analysis is to determine the underlying creditworthiness of the payments on the debt at the assets. Typically, these individual projects loans or bonds are already rated, potentially determine a credit estimate, or consider if mapping to the lender's internal credit scale is feasible.

Bundling credit aspects

These include:

- The portfolio benefits, if any, from a ratings perspective are based on the size, credit quality, and diversity of the underlying pool.
- The methodology includes two supplemental tests: (1) one that is related to the potential default of the largest industry in the portfolio; (2) the other is related to the default of a minimum number of the largest obligor exposures within the portfolio. If the transaction has a small pool with a significant concentration of underlying assets, then these supplemental tests will reflect our assessment of the increased event risk in these pools.

7. U.S. Public Finance Long-Term Municipal Pool Structure

Description

There are a number of public finance criteria that we use to rate infrastructure assets owned by governments. One of these is the methodology to assess U.S. public finance long-term municipal pools.

Long-term municipal pool programs (hereafter referenced as municipal pool programs) vary in structure, funding, and purpose. Examples of municipal pool programs range from government-supported state revolving funds and bond bank programs to more localized private sector-related economic development programs and pool programs that enjoy only a tangential relationship with a quasi-governmental organization. Most programs operate only in a single U.S. state.

Our criteria for municipal pool programs are based on an overall framework that considers both the enterprise risk and the financial risk scores of a program. The enterprise risk score results from our assessment of industry risk, market position, and geographic concentration. The financial risk score results from our assessment of loss coverage, operating performance, and financial policies and practices. The final rating results from the combination of the enterprise risk and financial risk scores. Our municipal pool criteria also reference criteria for bond insurers and CDOs for municipal and corporate issuers, reflecting the similarities in structure and purpose and desire to further illustrate comparability across sectors.

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Bundling credit aspects

These include:

- Our usual assessment of industry risk for municipal pool programs as low risk (in contrast to project developers), given these programs generally enjoy favorable government and regulatory environments. The assessment of industry risk for municipal pools ranges from category '1' (very low) to category '6' (extremely high). Similar to the project developer methodology credit risk increases with category all else being equal.
- The difficulty in achieving investment-grade ratings if the pool doesn't have excess collateralization versus its obligations.
- Large exposures to a small number of defaulting issuers could threaten a pool program's viability.
- Our criteria for rating long-term municipal pools (as when we rate project CDOs), which assesses whether the rated program is projected to withstand the defaults of a minimum number of the largest obligor exposures within the portfolio. This leads to adverse treatment if have small pools and or significant concentrations of assets.

Corinne Bendersky and Mike Tsahalis contributed to this report.

Related Criteria And Research

Criteria

- Methodology For Rating Project Developers, March 21, 2016
- Project Finance Framework Methodology, Sept. 16, 2014
- CDOs Of Project Finance Debt: Global Methodology And Assumptions, March 19, 2014
- Corporate Methodology, Nov. 19, 2013
- U.S. Public Finance Long-Term Municipal Pools: Methodology And Assumptions, March 19, 2012
- Principles Of Credit Ratings, Feb. 16, 2011

Research

- New Issue: Vela Energy Finance S.A., Oct. 5, 2016

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