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CREDIT RATING AND PROJECT FINANCE DEFAULT
– An Important Risk Management Instrument

SUSAN THOMPSON

INTRODUCTION

A correlation exists between the credit rating of a project and the likelihood of project finance default. Project ratings provided by rating agencies are intended to express the level of certainty with which project lenders can expect to receive timely repayment of principal and payment of interest, in accordance with the project terms. The debt rating of a project by a rating's agency involves collating relevant heads of risk, and analyzing each head of risk's magnitude and likelihood of occurrence. An analysis is then performed on the effect of these risks on the project's ability to operate and pay its debt obligations. The analytical framework utilised by a rating agency generally addresses project-level risks, sovereign risk; business and legal institutional development, *force majeure* risk and credit enhancements. This paper will discuss these heads of risk.

This method of credit evaluation has strengths, including that it is a comprehensive and flexible framework capable of supporting both traditional and sophisticated project finance transactions. Academic commentary has indicated that utilising project ratings as a method of credit evaluation is not without weaknesses. Potential weaknesses discussed in the report include inconsistent definitions and difficulties encountered when a rating agency updates a definition.

This paper will also examine the empirical evidence supporting the proposition that correlation exists between the credit rating of a project and the likelihood of project finance default.

CREDIT RATING AS A MEASURE OF RISK

The term 'project finance' is generally considered to refer to long-term, limited recourse debt, structured to meet the individual requirements of capital-intensive projects that are generally infrastructure or resource based in nature. The focus of project finance is to strengthen future cash flows of the project with reduced reliance on the security of the asset being financed, or the credit worthiness of the borrower.

EVOLUTION OF PROJECT FINANCE

The past two decades have witnessed the needs of project sponsors and lenders of project finance becoming more sophisticated. Related to this, the analysis of risk in project finance transactions has become more complicated. Project finance structures have also varied significantly. Previously, there was a strong reliance on contract-based revenues, as well as fixed price and date, *turnkey* construction contracts that mitigated the risk to project lenders with respect to construction and completion risk. In assessing the risk of a project, there is now heavy reliance placed on commodity prices and market risk. The industry categories that utilise project finance have also significantly widened.

ANALYZING PROJECT FINANCE RISK

It is important to note that whilst project finance has undergone dynamic change, rating agencies have also dynamically adapted. Standard & Poors' (S&P) framework of analysis of project finance risk extends beyond the traditional approach and encompasses a more dynamic analytic framework. S&P has issued more than 500 ratings on project finance transactions over the past 20 years. As of 20 February 2012, S&P rates more than $115 billion of project finance debt.[1] S&P's analysis is based upon the assumption that the contracts between the project finance parties serve two key functions. The first function of the contracts is to create a special purpose vehicle that will be under the direction of its sponsors, and will collate unique factors of production to produce a single product or service. The second function is to provide project lenders with security of payment and interest via a single operating entity. S&P's framework analysis then addresses how competitive the project will be in its industry segment and seeks to identify the risks that may undermine the project's competiveness, and therefore the assurance of repayment to project lenders.

MEANING OF CREDIT RATINGS

Project ratings provided by rating agencies essentially address default probability. Rephrased, this may be expressed as the level of certainty with which project

lenders can expect to receive timely repayment of principal and payment of interest in accordance with the project terms. For project ratings, there is no divergence in the debt issue rating or the issuer credit rating for three primary reasons. Firstly, debt is generally issued at the inception with the purpose of maintaining a consent risk profile. Secondly, project debt generally amortizes in accordance with a schedule based upon the life of the project. Thirdly, projects are not designed to build equity, rather cash flows are utilized to pay operating expenses, then pay down debts and finally pay dividends to investors.

RISKS CONSIDERED WHEN DETERMINING A CREDIT RATING

The debt rating of a project involves collating relevant heads of risk and analyzing each head of risk's magnitude and likelihood of occurrence. An analysis is then performed on the effect of these risks on the project's ability to operate and pay its debt obligations. To determine a credit rating of a project, S&P's analytic framework addresses five key components. These components are:

- Project-level risks,
- Sovereign risk,
- Business and legal institutional development,
- Force majeure risk, and
- Credit enhancements.

Project level risks are further defined into six categories, being:

- Contractual foundation,
- Technology, construction and operations,
- Competitive market exposure,
- Legal structure,
- Counterparty exposure, and
- Financial strength.

The objective of the analysis of these specific risks is to ascertain the capacity of a project to sustain its commercial operations throughout the term of its debt. This capacity is linked to its ability to serve its debt obligations to project lenders. As you would expect, a significant component of the risk analysis underlying the credit rating is focused on project level risks.

Project risk is assessed with respect to the contractual foundation of the project. In particular, the contractual protections that are afforded by the project documents to the relevant participants with respect to market and operating conditions are assessed. Project risk is also assessed with respect to whether the obligations set out in the project documents address the project's operating risk characteristics and whether there is a level of cohesion between the documents.

The dependability of the technology, construction and operations of a project are critical factors when determining the rating of a project. The rationale being that if a project fails to complete or does not meet project specifications, then the projected cash flows for a project may not be met. Thus, the project lenders may experience adverse events due to these technical failures. The project risk in this regard will be assessed in a technical manner and will address both preconstruction and post construction of the project.

The competitive market exposure of a project will be assessed by the rating agency. This is essentially the project's competitive position within its peer group. Competitive market exposure is also the principal credit determinant.

PROJECT-LEVEL RISK

The legal structure of the project will also be analysed as a component of project risk. The objective is to assess whether the project will be engaging solely in the business and activities being rated. Structural features that are often assessed in this regard include, but are not limited to, the choice of law of the contract documents, and thus legal jurisdiction, documentation risk and inter-creditor arrangements. These features will be examined in the context of capacity to maintain the project's risk profile and manage cash flows.

Counterparty exposure will be determined by the ratings agency. Counterparty exposure assesses the contractual participation of entities other than the project participants. In the event that the strength and reliability of these participants are adversely impacted, then the project may also experience adverse events. Examples of relevant counterparties would include suppliers of raw materials, and purchasers or parties that utilize the products of the project.

The financial risks associated with a project will also be assessed by a rating agency. Relevant financial risks that may be assessed include, but are not limited to, refinance risk, foreign currency volatility, liquidity risk and interest rate volatility.

SOVEREIGN RISK

Sovereign risk is the risk associated with the foreign currency rating of the country where the project is located. A sovereign currency rating reflects the sovereign government's ability and dedication to its commitment to service debt obligations on time and in their entirety.

BUSINESS AND LEGAL INSTITUTIONAL DEVELOPMENT

Institutional risk is the risk associated with certain country specific factors in relation to the proper

functioning of business and legal institutions required to enable a project to perform as conceived. An example of institutional risk is with respect to legal systems in certain developing countries that may not provide effective rights and remedies for the creditors of a project, so that the creditors may realise their interests.

FORCE MAJEURE RISK

Force majeure risk is the risk of certain extreme events that are outside of the control of the parties. Force majeure events typically include "acts of God" events including floods and earthquakes, and also extend to events such as civil disturbances and strikes. Force majeure events are specifically monitored, as such an event can excuse a party from certain performance obligations.

CREDIT ENHANCEMENTS

Credit enhancement may be offered by third parties with the objective of mitigating specified risk, rather than comprehensive risk, of the project. Specific risks that traditionally have been addressed by credit enhancement include credit risk, currency risk and sovereign risk. Generally speaking, the ability to obtain a ratings enhancement due to insurance policies and/or guarantees is limited. A ratings enhancement will only be provided by ratings agency in the event that the third party and the relevant policy and/or guarantee meets the specific criteria of the agency. An example of how credit enhancement may be practically utilised is illustrated in the support of the transition to a low-carbon economy. A small secondary debt market as well as the absence of liquid, investment grade asset-backed securities, have been cited as barriers for large scale low-carbon investments. The majority of project backed bonds with no credit enhancement would generally be BBB rated. In the event that private or public credit enhancement is available, the project bonds may achieve an indicative credit rating of A. If the project bonds are able to procure backing by government or multilateral guarantees, then AAA ratings may be achieved. [2]

STRENGTHS & WEAKNESSES OF CREDIT RATING

COMPREHENSIVE FRAMEWORK

The discussion with respect to the framework utilised by rating agencies in the previous section highlighted the comprehensive nature of the risk analysis framework; this is an obvious strength of this method of credit rating. The comprehensive framework allows all relevant heads of risk to be addressed and analysed. This is achieved despite the varying industries, project structures and needs of the participants. There is also in-depth commentary with specific industry focuses, with respect to each relevant heads of risk. In addition, the framework is subject to continuous review and

adaptation when deemed relevant. This is demonstrated through commentary that discusses specific project failures and lessons learned in relation thereto.

FLEXIBLE FRAMEWORK

As noted earlier in this report, project finance has evolved as the needs of project sponsors and lenders of project finance have become more sophisticated. This evolution of project finance has also seen transaction bases vary significantly. Industries that project finance now spans to include, but are not limited to, oil and gas, entertainment, meatpacking and military housing. The varying nature of these industries and the sophisticated requirements of sponsors and lenders has introduced a level of difficulty for investors and participants when endeavoring to identify, compare and contrast project risk systemically. Whilst project finance has undergone dynamic change, the framework of analysis of project finance that ratings industries utilise, has also been dynamically adapted. The framework has sufficient width to encompass the various industries and countries in which the project is based. In addition, the framework has sufficient breadth to cater for sophisticated transactions. The flexibility of the framework is a definite strength. This allows a single ratings scheme for all project finance transactions as opposed to having individual rating schemes for different heads of project finance transactions, such as industry specific.

INCONSISTENT DEFINITIONS

A distinct weakness with the use of this method of credit evaluation is the apparent inconsistencies in the definitions utilised by rating agencies. The utility of a rating is decreased if its meanings vary by geography or type of instrument. Previously, rating agencies promoted that there was consistent definitions of their ratings. Moody's in 1994 made the following statement:

"no matter what types of instruments the rating apply to, no matter where the issuer resides, and no matter what currency or market in which the security is issued, Moody's ratings are intended to have the same relative meanings in terms of expected credit loss." (McGuire, 1994)

Potentially due to the increased sophistication of project finance transactions and financial instruments generally, the concept of standard definitions has evolved. For example, if we take the S&P AA rating in relation to seven year default probability, this will be 0.315 per cent for ABS, 0.420 per cent for corporate bonds and 0.701 per cent for CDOs. (Standard and Poor's, 2006)

Inconsistencies with definitions increase the level of difficulty for investors when they are comparing credit risk of securities of different types. Investors are not the only parties that are affected by inconsistency in ratings definitions. The ability to make effective regulations may be impacted due to inconsistencies in rating definitions. Academic commentary has highlighted potential issues with utilising inconsistent ratings definitions in the regulatory environment. The United States Securities Exchange Commission (SEC) has provided that securities with higher credit ratings require lower capital requirements for provisioning. This approach is similar in other regulatory jurisdictions. Inconsistencies in the credit rating process impact upon regulators' ability to assess whether capital requirements have been met.

DIFFERING APPROACHES TO RATING TRANSITIONS

Another distinct weakness is the differing approaches which rating agencies take with respect to rating transitions. In an analysis of 34 Private Finance Initiative (PFI) projects rated by Standard & Poor's and 40 PFI projects rated by Moody's, it was determined that Moody's rated one notch higher. In particular, Moody's rated 31 per cent of PFI credits A, whilst S&P rated only 6 per cent the same rating. Moody's generally adjusted a PFI Project's rating upward on the completion of construction. This reflects their perception, which is a perception mirrored by many banks, that project risks are decreased on completion of construction. S&P does not share a similar view with respect to post-construction. Accordingly, if a PFI project was initially rated BBB, there is a high statistical probability that S&P would retain that rating on completion of construction.[3] Both Moody's and S&P have

strong arguments for their approach to rating transitions. However, both approaches cannot be correct and the eventual rating will have a significant impact on the project.

DEFINITIONS CHANGE OVER TIME

It is standard practice for rating agencies to alter their rating definitions over time. The underlying rationale for a rating agency to amend their definition due to market evolution is understandable. If a security has been rated with a rating definition and the rating agency subsequently issues a variation to that definition, market participants encounter a level of difficulty if they seek to compare a security which has been rated with the original definition and a security which they have rated with the updated definition.

CORRELATION

The most respected credit rating agencies such as Moody's and S&P have significant long-term experience in credit rating. These rating agencies have industry participants and investor acceptance. Long-term credit ratings are divided into categories spanning from AAA which equates to the strongest credit quality to D equating to the lowest credit quality. Empirical evidence from international sources indicates that historically a project with an S&P rating of AAA or AA grade has a negligible risk of default. The AAA and AA grade is defined by S&P as the obligor's capacity to meet its financial commitment on the obligation as extremely strong and very strong, respectively. For projects with an S&P rating of BBB, this risk increases to 3.4 per cent. S&P's definition of BBB grade is an obligation that exhibits adequate protection parameters. This is subject to the caveat that adverse economic conditions or changing circumstances are more likely to lead to a weakened capacity for a project to meet its financial commitment. In projects with ratings less than investment grade, the risk of default increases further to 9.7 per cent. A rating of less than investment grade is generally considered to be a rating of BB and less. These grades are defined in terms of increasing vulnerability to non-repayment, to legal actions that may impede payment, to payment being in arrears and finally payment not being prospective.

It should be noted that historically, the failure rate of international credit-rated projects is low. S&P measured defaults for International credit-projects to be less than 1 per cent in 2004. This is a lower default rate than other rated securities. The low default rate of these projects may be self-actualizing. Projects are often constructed as special purpose vehicles (SPVs) with no credit history in their own right. In order to obtain funding, the projects are structured in a manner to obtain the strongest credit rating, as this will allow the project to obtain more competitive funding and increase the probability of success for a project. It should be noted that despite the credit rating of a project, the project may still encounter performance and operational issues. In Australia, the La Trobe Hospital and Deer Park Correctional Facility projects experienced difficulties. These difficulties resulted in the state repurchasing the assets at less than their replacement values. Alternatively, projects that have received a strong credit rating may be susceptible to events that weaken their financial profile. An example of such an occurrence is the events of September 11, 2001. After that date, a substantial increase in terrorist and liability insurance occurred. Some projects experienced insurance costs doubling from preliminary expectations.

The credit rating of a project and the likelihood of project finance default may also be influenced by the presence of credit enhancement in the form of credit risk insurance from a monoline agency. For a fee payable to the monoline agency, the SPV will receive an AAA rating. The benefit of to the SPV is that it lowers borrowing costs. In addition, it has the capacity to open the project up to investors which may not have previously been able to invest in the project due to its credit rating. For example, in Canada many investors have limits on the level of BBB rated debt they may have in their investment portfolios. With respect to credit enhancement, the underlying fundamentals have not changed. The project may still run into difficulties that may impede its ability to complete. However, as the project has a guarantee from the monoline agency, the risk of default to the investors has been mitigated.

Accordingly, empirical evidence supports the proposition that correlation exists between the credit rating of a project and the likelihood of project finance default. Moody's undertook a study of historic project finance bank loan defaults and recovery rates for the period of 1983-2008 (the Initial Study)[4]. The Initial Study encompassed a consortium of leading sector lenders and a large pool of data was utilised. The aggregated data accounted for approximately 45 per cent of the worldwide project finance transactions between the period 1 January 1983 and 31 December 2008. This data set was representative of project finance transactions by industry sector and year of origination. Moody's has proffered that the Initial Study indicates that the "10-year cumulative default rate for project finance bank loans is consistent with 10-year cumulative default rates for corporate issuers of low investment grade / high speculative grade quality."[5] The Initial Study was updated to extend the study period so that it now encompasses the period 1 January 1983 to 31 December 2010 (the Supplemented Study). The data set for the Supplemented Study now encompasses 51 per cent of all worldwide project finance transactions during the Supplemented Study period. Once again, Moody's findings are that the "10-year cumulative default rate for project finance bank loans is consistent with 10-year cumulative default rates for corporate issuers of low investment grade / high speculative grade quality."[6] The strong correlation

between ratings and default rates may be attributed in part to the extensive framework in which the heads of risk for the project are analyzed. In addition, the ratings agencies' constant efforts to review, and assess for relevance, their assessment criteria to ensure market currency, may also attribute to the strong correlation between the credit rating and rate of default.

There is concern that the empirical evidence with respect to default rates does not support the credit rating assigned to the project for certain categories of projects. An analysis of the United Kingdom's Treasury Private Finance Initiative (PFI) signed projects list indicates that the assigned credit rating does not reflect the actual rates of defaults incurred in these projects. The average maturity of Public Private Partnership (PPP) projects on the PFI list is eight years. With a project term of eight years, the estimated default rate is in the vicinity of 3.75 per cent. Accordingly, if these figures are applied, then approximately 25 projects would be expected to have defaulted. An analysis of the actual default rates indicated that the rate is 20 to 25 per cent of this rate with 6 to 8 actual defaults if a broad definition of default is applied. If the rate of actual project defaults is significantly less than that of the anticipated rate, then commentary queries whether the assigned credit rating to a project is accurate for certain categories of projects.

CONCLUSION

Whilst project finance has undergone dynamic change, it is important to note that rating agencies have also adapted. This can be seen in the ever evolving framework which rating agencies utilise to debt rate a project. There is validity in the approach, and there are several benefits of a ratings agency debt rating a project by collating relevant heads of risk, analysing each head of risk's magnitude and likelihood of occurrence, and then analysing the effect of these risks on the project's ability to operate and pay its debt obligations. The utilisation of a dynamic framework by rating agencies does however pose difficulties for investors. Ratings agencies do apply variable meanings for their ratings. In addition, a further level of complexity is experienced when a rating definition is updated and an investor seeks to compare projects that have been rated with divergence definitions. Examination of empirical evidence supports the proposition that a correlation exists between the credit rating of a project and the likelihood of project finance default.

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