PECDC

Credit Data Pooling by Banks for Banks

24 June 2014

PECDC External Summary Report Project Finance LGD Study 2014

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ABOUT PECDC

A cross border initiative to help measure credit risk, PECDC is a non-profit association owned by 42 banks who share credit data anonymously.

PECDC houses the world's largest LGD/EAD database, with over 100,000 default observations totalling over €100 billion in most non-retail Basel 2 Asset Classes from member banks across Europe, Africa, North America, Asia and Australia.

PECDC also has the world's largest PD database of defaults and PD estimates for large corporates, banks, SMEs and specialised lending.

Created 'by banks, for banks'

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SUMMARY

This paper reports a shortened version of the main findings of the study of recovery performance of project finance bank loans reported by PECDC member banks. The loan loss data has been collected by PECDC from 20 of its member banks across Australia, North America, Africa and Europe.

The participants have access to the complete dataset and a more detailed study, which enables them to analyze the loan loss drivers of project finance and benchmark to a much larger database for this low default portfolio.

The PECDC PF dataset in June 2014 consisted of a total of 300 projects which defaulted under the Basel II definition of default, collected over the period 1997-2014.

In summary, we found that Project Finance loan performance is not homogeneous and many drivers affect the recovery of the project, including:

- The data indicates a broad consistency of average LGD between **regions** and supports the view that project finance is a global asset class.
- Project Finance LGD appears to correlate with **Project Type** with Mining and Renewable Energy having higher LGD on average when compared to Infrastructure, Telecoms and Non-Renewable energy projects.
- Project Finance LGD appears to correlate with whether the **project technology** is proven or unproven. Proven technology is a key factor in the ability of a project to recover from default and the low number of defaults suggests that Banks seldom provide standard project finance to unproven technology projects. There is a marked increase in average LGD for unproven technology projects that have defaulted in the construction phase.
- Project Finance LGD appears to correlate with whether or not the project has defaulted in the **construction versus operations phase.** The construction phase projects reported have a higher than average LGD. Average LGD has been lower for operation phase projects.
- Project Finance on average shows a lower LGD when compared to unsecured **Large Corporate loans**. Moody's and S&P research also supports this. This is not a surprising result to many Project Finance practitioners, who seek to structure transactions to ensure a good outcome in the case of default.

INTRODUCTION

PECDC – established in 2004 –manages the collection of historical LGD, EAD & default observations.

The Project Finance working group was established in 2011 to assist member banks to understand the loan loss drivers that affect LGD. This dialogue and participation from member banks has resulted in improvements to the overall data quality and changes to the data input structure, as new data fields have resulted in a more focused data collection and expanded infrastructure to include covenants and more detailed information on project characteristics. The working group consists of 20 global banks actively participating in Project Finance.

COMPOSITION OF THE DATABASE

The key source of repayment from a defaulted project is the expected future cash flows. The common credit characteristic of all project finance loans is the reliance on a specific asset to generate cash flow as the sole source of principal and interest payments. Thus project finance LGD is made more complex given the structures in place. The data examined in the study is of defaulted projects that have subsequently resolved.

A project is in **default** if:

- material payment is past due more than 90 days,
- the bank takes a charge-off or makes a specific provision
- the bank sells the project at a material credit-related loss
- the bank consents to a distressed restructuring likely to result in a loss.
- the obligor has sought or has been placed in bankruptcy protection.

A defaulted project is **resolved** if:

- the project has entered return-to-performing status post default or post restructuring
- the bank sells/transfers the defaulted exposure
- there is completion of liquidation/bankruptcy process and repayments distributed to all creditors
- the bank receives final repayment in part or in full from sale of project or loan sale

The analysis is structured on the relationship of the following key elements with LGD:

- Geographical location of project
- Year of Default
- Project type, technology & state of completion
- Comparison to Large Corporate

The project finance data is collected at both Borrower (project) level and at Facility (loan) level. This report looks at the overall project level LGD at Borrower level. The dataset used in this paper consists of resolved defaults only, comprising 281 defaulted projects, which defaulted under the Basel II definition of default during the period from 1997-2009. The dataset is similar in size to those studies completed by both Moodys (154 defaults) and S&P (356 defaults).[1]

[1] *"S&P Annual Project Finance Default and Recovery Study 2011"* released January 2013 and "*Moodys' Default and Recovery Rates for Project Finance Bank Loans, 1983–2010"* released January 2012.

The PECDC database requires the input of detailed project information plus details of the timing, amount and nature of every cash flow after default, costs as well as receipts. In this way, members can calculate LGD using their own methods. The LGD levels used here are simple calculations on the raw data and do not reflect any data cleaning, portfolio alignment filtering or addition of any statistical certainty add-ons and therefore are not an indicator of Basel II LGD levels.

NOTE ON TERMS USED

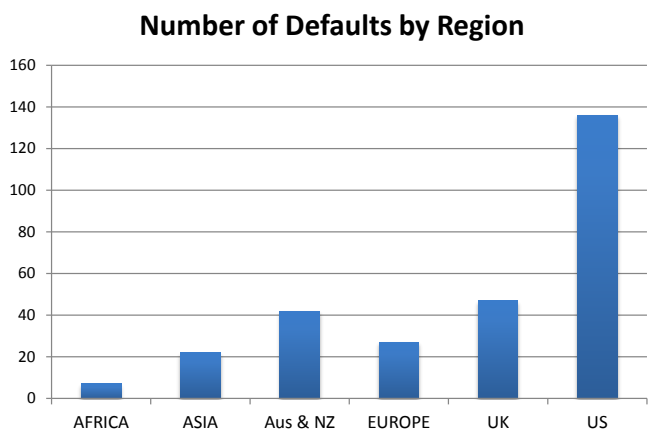
LGD refers to the Loss Given Default rate, which is calculated as 1- recovery rate. The recovery rate is calculated by PECDC as the net of all cash flows (using the discounted cash flows where the discount rate is equal to the risk free rate as at the date of default.) divided by the outstanding amount at the date of default.

Project Finance is defined as per the **definition of project finance** from the Basel Committee on Banking Supervision, International Convergence of Capital Measurement and Capital Standards ("Basel II"), November 2005.

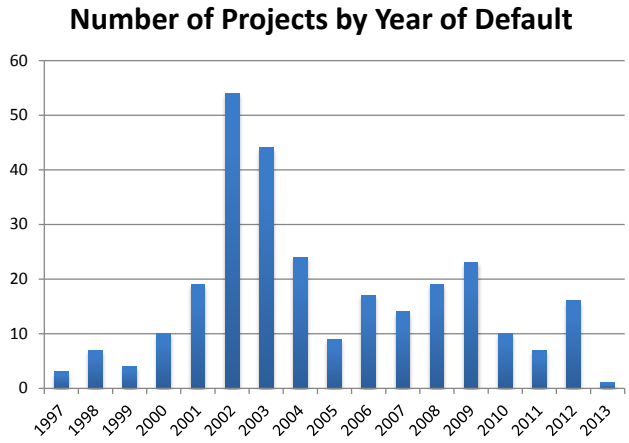
"Project finance may take the form of financing of the construction of a new capital installation, or refinancing of an existing installation, with or without improvements. In such transactions, the lender is usually paid solely or almost exclusively out of the money generated by the contracts for the facility's output, such as the electricity sold by a power plant. The borrower is usually an SPE (Special Purpose Entity) that is not permitted to perform any function other than developing, owning, and operating the installation. The consequence is that repayment depends primarily on the project's cash flow and on the collateral value of the project's assets."

GEOGRAPHICAL LOCATION OF PROJECT

Over 40% of the defaulted projects are located in North America, reflecting the 2002-2004 power market crisis, which was driven by regulatory changes in the US power market. As observed by the industry, the data indicates a broad consistency of average LGD between regions and supports the view that project finance is a global asset class.



YEAR OF DEFAULT

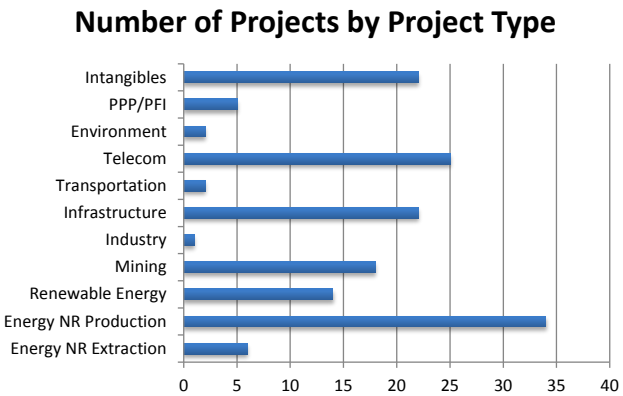


The number of defaulted cases in the data set varies according to the year of default and appears to coincide with global economic performance. Peaks in 2002/2003 reflect the downturn at that time and an emerging peak in 2009 data reflects this cyclical downturn. The data reflects only resolved loans which can take some time to mature and hence the 2009 data is not yet complete.

The average discounted project LGD peaked in both 2001/2002 and 2008, which coincide with low GDP growth. Additional data and time will permit further conclusions to be drawn from any impact the recent crisis has had on project finance.

PROJECT CHARACTERISTICS

When analyzed by **project type**, LGD patterns begin to emerge. LGD appears to vary by project type with renewable energy projects (wind farms etc.) and mining showing higher losses on average in comparison to Infrastructure, telecoms and industry. Infrastructure, Telecoms and Non-Renewables appear to have lower LGD than other project types.



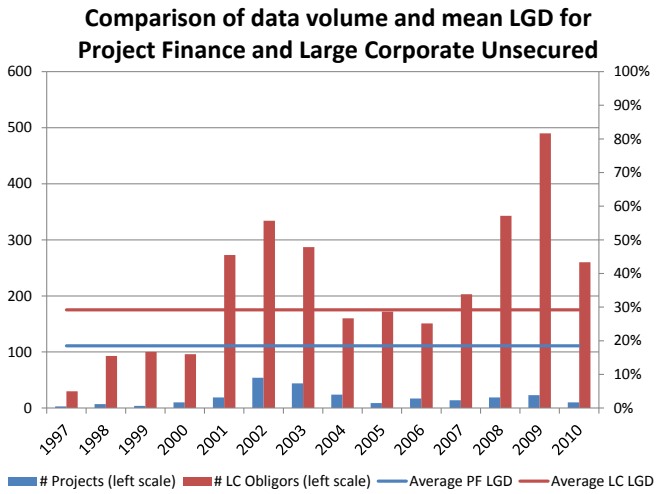
Higher LGD is associated with projects that have defaulted in the construction phase, have unproven technology or projects that have been abandoned. The highest LGD defaulted projects in this dataset are from:

1. Unproven technology, construction phase mining projects
2. Operation phase renewable projects

Recoveries are much lower for those projects with new or unproven **technology**. These projects have all defaulted in the construction and have been sold as distressed sales and may have resulted in project abandonment. Projects in which technology is proven usually have much more stable cash flows and defaults are often resolved or restructured with minimal loss.

The **state of completion** of the project appears to affect LGD. Construction phase and Ramp-Up phase projects result in a higher average LGD compared to Operations phase. Project Finance LGD for projects that defaulted in the operations phase is lower on average than construction phase projects, however this also varies by project type with higher LGD evident for renewable energy projects.

LARGE CORPORATE LOANS: A COMPARSION



It is interesting to compare the unsecured Large Corporate LGD level (also from the PECDC database) for the same period. Noting the varying obligor and defaults amounts, the data appears to support the hypothesis that project finance displays lower LGD rates than unsecured large corporate obligors.

FUTURE DEVELOPMENTS

The purpose of this working group is to equip member banks with the tools and guidance to use the project finance data to complete their own analysis. This paper has identified potential key drivers of LGD for project finance whilst also benchmarking this data with unsecured Large Corporate data. This will enable banks to benchmark their own portfolios against the PECDC Project Fincance database. It is also evident that increased collection of data and additional defaults greatly assist further research on these drivers. PECDC will continue to review the existing data further defining such drivers as project technology, construction vs. operations etc.

Further studies could include benchmarking of this data against secured loans, which would also assist in understanding how collateral and projects are valued at default and how the nature of default impacts on the data. .

ATTRIBUTION

This document is based on a voluntary inter-bank working group composed of PECDC member banks chaired by Nina Brumma of KFW.

Working group support and analytics were performed by Orla Duffy (Orla.Duffy@duffyanalytics.com)