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Corporate Lending and the Assessment of Credit Risk

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Abstract

Through this paper the author emphasises the need for a coherent and multidisciplinary methodology in the assessment of credit risk in corporate lending. It is argued that credit risk should be assessed in the only context that is possible which is through cash flow projections generated by sound and methodologically correct financial models which also accommodate the calculation of the margins of uncertainty in the projections by allowing Monte Carlo simulation software to calculate the impact of probabilistic assumptions. Moreover, within a framework where the project risk and financing structure phases are sketched out, it is possible to both identify and evaluate the impact of various project risks and devise appropriate financing solutions in the loan agreement. The end result of such approach to corporate lending would be to reduce credit risk and to contain the effects of default on the lending institution.

Keywords: Repayment capability, project evaluation, financial forecasting and simulation, corporate lending, credit risk.
JEL Classification Codes: D61, G17, G21, G32, G33, H43

1. Introduction

In a free economy, the prime function of lending by banks is to channel financial resources to the most productive and viable economic uses. To carry out this function successfully credit officers should be capable to assess whether the proposed business plan is likely to be able to repay the loan from operational cash flows. Moreover, bankers will always seek to make any loan as secure as possible. And rightly so, because the funds they lend out are mostly from savers who demand a safe or "risk free" return on their deposits. The price the savers pay for this "risk free" return is to be content with receiving a relatively small (but sure) interest rate on their moneys. If savers wanted to take up equity risk and gamble on making higher returns they would have opted to invest in the stock market, rather than depositing their money in a bank (albeit at the risk of losing part or even the whole of their investment capital). Hence, the **expected loss** from the operations of a bank should not exceed the bank owners' capital which is the premise on which **capital adequacy** requirements and the Central Bank's regulatory framework are based on. To put it very simply, banks should not gamble with their depositor clients' moneys. When this happens, then markets crash and world economies, as we have witnessed recently, go into depression spurring a huge reduction and redistribution of wealth.

Because banks need to adhere to the requirement of always being in a position to return the money received from deposits (plus interest) to the rightful owners, they can only lend money out in a strict and prudent manner. This in effect means that the risk of losing money through a lending operation should be confined only to the limits that can be covered by the capital put up by the bank's

owners. Hence, if a bank can reduce the **probability of default** (through lending only to those who have a capability to repay) and the extent of **loss in the event of default** (through taking adequate security cover), then they would be able to make more loans and consequently increase the return on the owners' capital. That is the essence of credit risk and its importance in bank lending.

Traditionally, banks have sought to assess credit risk when considering projects for corporate lending where risk was defined as just the possibility of the lending bank not being in a position to recover the loan. The accepted practice has been therefore that given a sound "**security position**" the lender feels comfortable to grant a loan. **Repayment capability** is a further consideration, but it remains a secondary constraint given that the client can demonstrate that the bank has good available recourse for recovering the loan. This code of conduct has made the banks collateral (or asset backed) lenders rather than business enterprise lenders. The emphasis is firmly on the applicant's balance sheet rather than on the projected income (or cash flow). It is more a question of "show me what you have rather than what you can do". Moreover, credit risk is being assessed by looking at the past (or history) of the applicant rather than the merits and risks of the proposed **business plan** in the future.

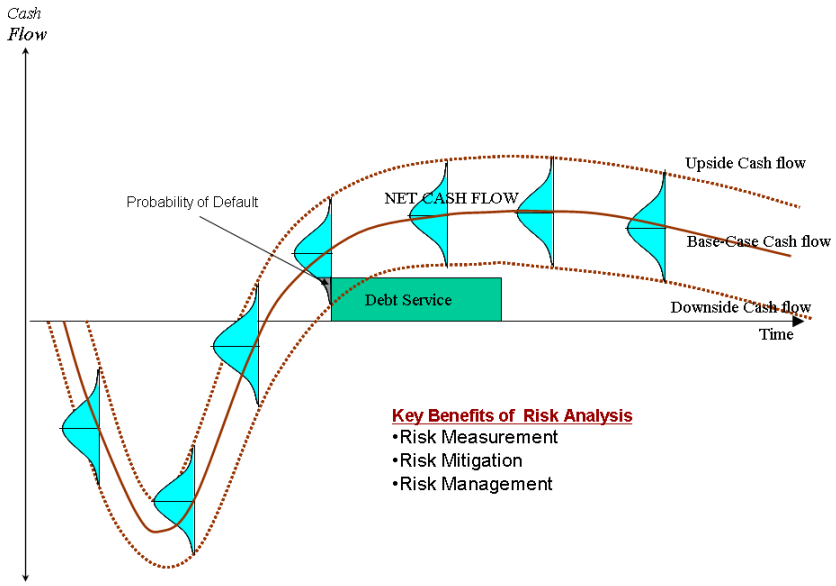
2. Credit Risk Assessment

Why is it then that banks have relegated repayment capability to a role of secondary importance in credit risk assessment? The simple answer is that it is not easy to assess repayment capability and the risk profile of a project or business. The only way that repayment can be properly assessed is through meaningful cash flow projections. Credit officers should be trained in the methodology and tools of **investment appraisal**[1] **and risk analysis** and in addition understand the key success factors and aspects of **competitiveness** in a business enterprise. The fundamental question is what would it take for a business venture to be successful in the markets it competes in? This is not a matter of just putting down some numbers on a spreadsheet and calculating what money would remain available for servicing the loans.

A credit officer without the proper training, not just in finance[2], but also in marketing and management concepts would be at a loss at even asking the right questions let alone judging whether the assumptions made on market projections, prices and market shares are reasonable or not[3]. Moreover, any projection is usually assigned a 100% probability of occurrence. That is by itself an incredible assumption. When contemplating what may occur in the future for anything, not just for businesses forecasts, it is downright stupid to assume that any possible outcome would have but a very minute chance of happening as projected. Even when we are equipped to understand what we are dealing with, at best, we can only assign **judgemental probabilities** to each possible outcome for each variable in a financial model. But even so, it would be a daunting task to make sense of all scenarios that may arise from the combination of all possible outcomes between so many risk variables. Fortunately, by using **Monte Carlo simulation** software, it is nowadays easy to assess the impact of uncertainty and identify as well as evaluate project risks[4]. Projecting the cash flow within **the margins of uncertainty** shows how and when it is likely that **loan default** may arise (as illustrated in Figure 1). This in turn helps the credit officer arrive at an appropriate **financing structure** for the loan so that it reduces the credit risk and the impact on the Bank in the event of default.

[1] Harberger, Arnold C., and Jenkins, Glenn P. 2000
[2] Fischer, Charles C. 1997
[3] Savvides Savvakis C. 2000 and Savvides Savvakis C. 1990
[4] Savvides Savvakis C. 1994

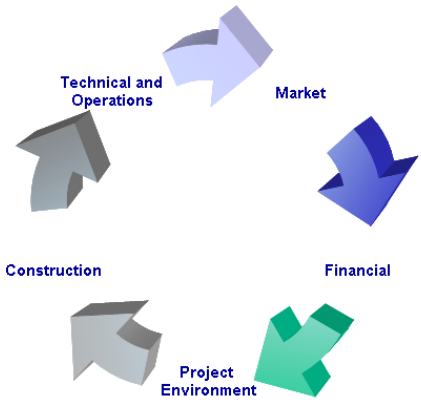
Figure 1: The Impact of Uncertainty on the Projected Cash Flow



3. Project Risks and Financing Structure

Any business that is seeking finance for a project is subject to a number of risks. The sources of project risk could be many and varied depending on the project itself and its circumstances such as, the market it will compete in, the type of technology it will use, the financial and economic situation and the legal regime of the countries it will operate in and so on. Project risks can be classified in five categories as indicated in Figure 2.

Figure 2: Sources of Project Risk

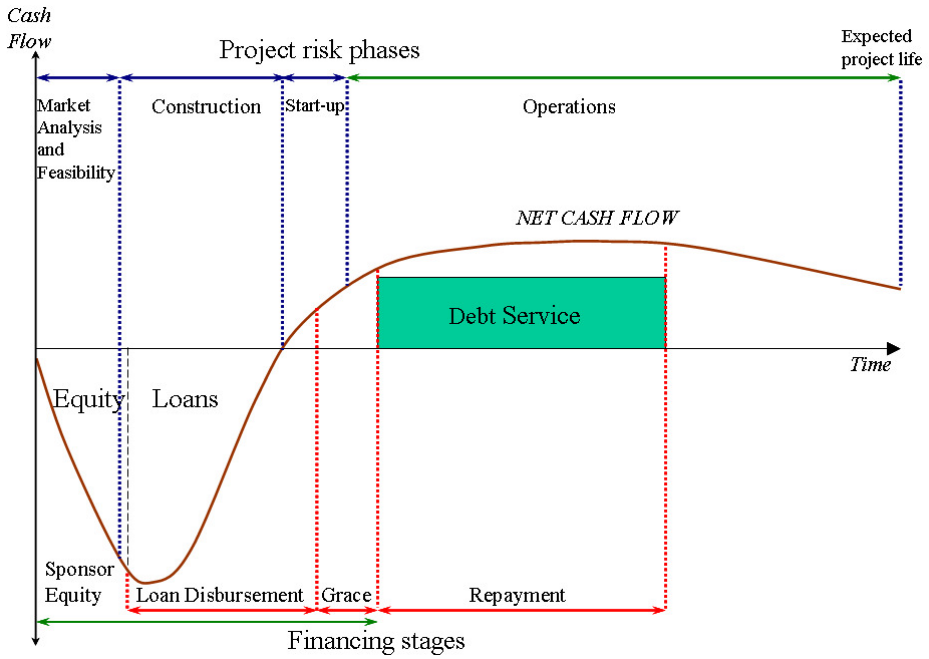


1. **Construction**
   - Cost over-run and delay risk.
   - Experienced and reliable contractor.
   - Availability and cost of building materials.
2. **Technical and Operations**
   - Manageable technology.
   - Availability and cost of supplies, raw materials and energy.
   - Experienced and reliable operator and management personnel.
3. **Market**
   - Existence of a market at the projected quantities and prices.
   - Distribution and transportation of product to market.
   - Adequate communications/promotion channels.
4. **Financial**
   - Currency, foreign exchange risk and inflation.
   - Adequacy of equity contribution.
   - Worth of project assets as a collateral.
5. **Project Environment**
   - Country risk and expropriation risk.
   - Political environment, licences and permits.
   - Force majeure and adequate insurance coverage.

A proper and thoughtful appraisal of a proposed business plan seen through the prism of a sound financial model that accommodates for risk analysis will reveal and gauge a number of project risks which can be charted along the projected life of the project and most importantly indicating how they may affect disbursements and loan service during the repayment period (see Figure 3)[5].

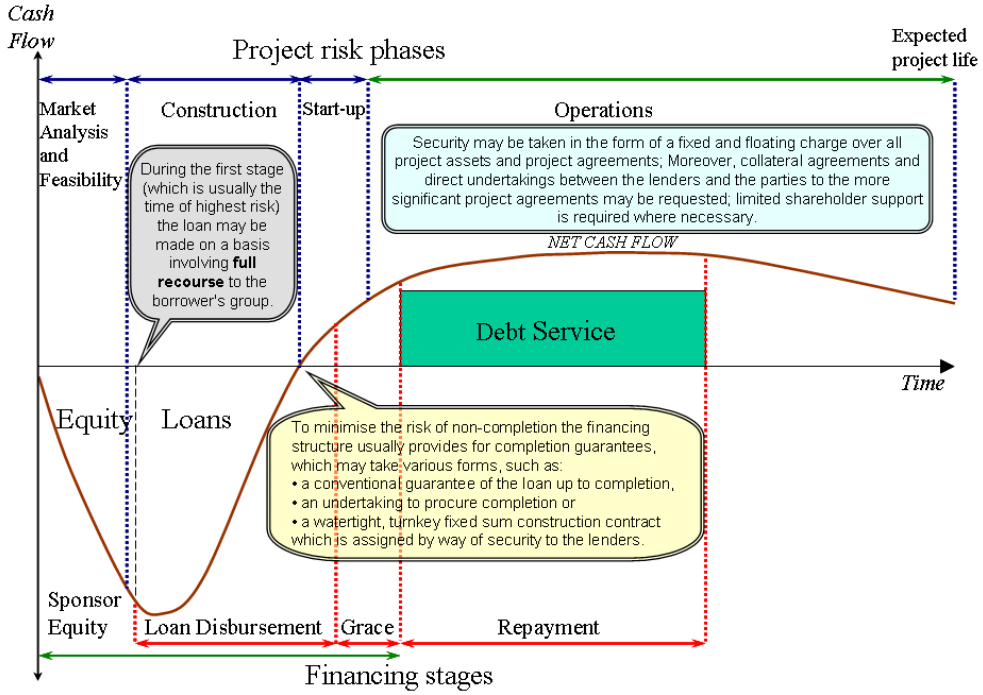
[5] For complete case-studies that include financial, economic and risk analysis see: Andreas Andreou, Glenn Jenkins, Savvakis C. Savvides and 1990 and Andreas Andreou, Glenn Jenkins, Savvakis C. Savvides. 1991.

Figure 3: Project risk phases and financing structure



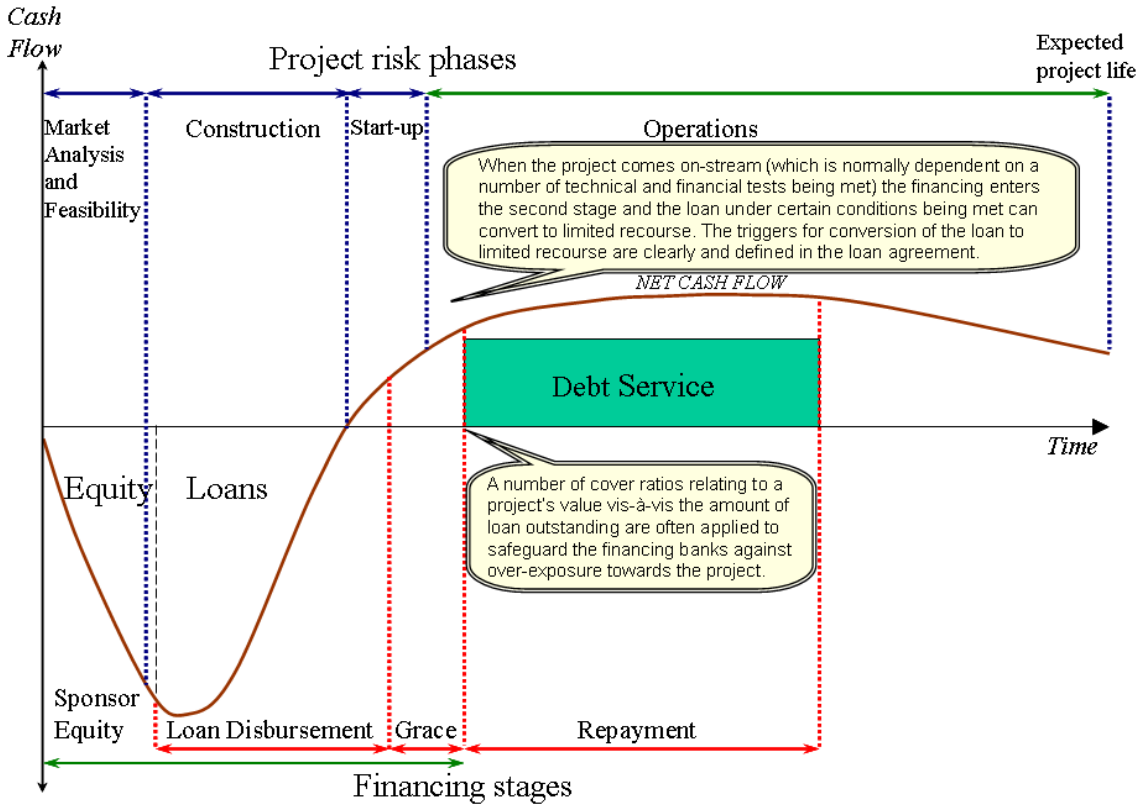
A credit officer can utilise this **project risk and financing structure framework** to identify the risk areas and take appropriate pre-emptive action in the loan contract with the client. There are two distinct stages for which, given that the project risks have been identified and evaluated in the appraisal of the application, the bank can provide for appropriate undertakings and commitments so as to mitigate and manage credit risk. In the **pre-operational stage**, full recourse is usually reserved for the lender and in addition a number of guarantees and undertakings are required to minimise the risks from non-completion and cost over-runs (as illustrated in Figure 4).

Figure 4: Project risk phases and financing structure – Pre-Operational Stage



In the operational or post construction stage the bank can moderate the full recourse conditions given that the project meets certain conditions which mitigate the risk of non-collection. The full collateral requirements can be further relaxed as the loan is gradually reduced and given that the debt service coverage ratios improve above a pre-agreed level (see Figure 5).

Figure 5: Project risk phases and financing structure – Operational Stage



4. Conclusion

In conclusion, the assessment of credit risk is at the core of corporate lending. It is not a function that can just be delegated to people without the proper training and experience. The long term success of a bank crucially depends on the quality of work done by its credit officers. Good appraisal and evaluation of the risks during credit risk assessment is likely to have a lasting effect on the quality of the loan portfolio and the ability of the bank to recover in case of default. The only way credit risk can be properly assessed is through cash flow projections which are based on sound financial models and a good understanding of marketing and the aspects of competitiveness in business. Moreover, risk analysis (using the Monte Carlo Simulation methodology) enables the prudent and diligent credit officer to evaluate and map out project risks and take appropriate action in the loan agreement which will ensure that the probability of default is reduced and the security position of the bank is stronger where it counts most.

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