

Project finance and obtaining sufficient funding for the successful completion of your project

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1. Introduction

Any talk on project finance will invariably touch on the topics of funding instruments, cash flow and risks and I will endeavour to introduce these topics and illustrate applications with practical examples. I will also make reference to examples in the literature and have appended a list of references hereto.

2. Project Finance

The term project finance is often interpreted incorrectly as the generic financing of a project. However, project financing is a specialised funding structure that relies on the future cash flow of a project as primary source of repayment, and holds the project's assets, rights and interests as collateral security. It is also referred to as non- or limited recourse finance, i.e. lenders have no- or limited recourse to the sponsors or shareholders of the project company for repayment of the loan.

a. Requirement to finance off-balance sheet.

From a private sector perspective, a company that wants to implement a new project without encumbering its balance sheet could consider establishing a special purpose project company that implements the project and raises the funding. In doing so the corporate balance sheet is protected against the risks associated with a large project. The project company is legally independent from its shareholders. This provides a safeguard for the project in the event of failing shareholders dragging an otherwise healthy project into distress or *vice versa*.

From a public sector perspective, we know that government does not have unlimited financial resources. The project finance structure affords the public sector entity the ability to tackle its infrastructure backlog in partnership with the private sector with limited requirements from its own resources.

Attributes of project companies or special purpose vehicles (SPVs):

- Separate legal incorporation
- Costs more and takes longer to structure
- Equity is usually privately held and concentrated in a few shareholders
- High gearing, e.g. >50% debt
- Debt usually held by banks as opposed to institutions
- Contract extensive
- High transaction costs: 3-5% of amount invested but could be 10% for smaller or unique projects

These structural features of a separate project company limit managerial discretion to the project level. Project company management has a focus on the project with regard to expenditure, investment and effort. In contrast corporate management's attention is less focused.

Cell C

Business focus in the project company

The sponsor of the third cellular license in South Africa, Saudi Oger, is a multi company, multi-divisional organisation with subsidiaries and affiliates in the Kingdom of Saudi Arabia and elsewhere. It had its origins in the construction sector. Cell C (Pty) Ltd is wholly owned by 3C Telecommunications (Pty) Ltd, which in turn is 60% owned by Oger Telecom South Africa, a division of Saudi Oger, and 40% by CellSaf, a black empowerment organisation. The shareholders of CellSaf collectively represent diverse sections of South African society, such as black owned investment and technology groups, women entrepreneurial groups, social empowerment groups, rural development trust, SME's, education and training groups, and regional entities.

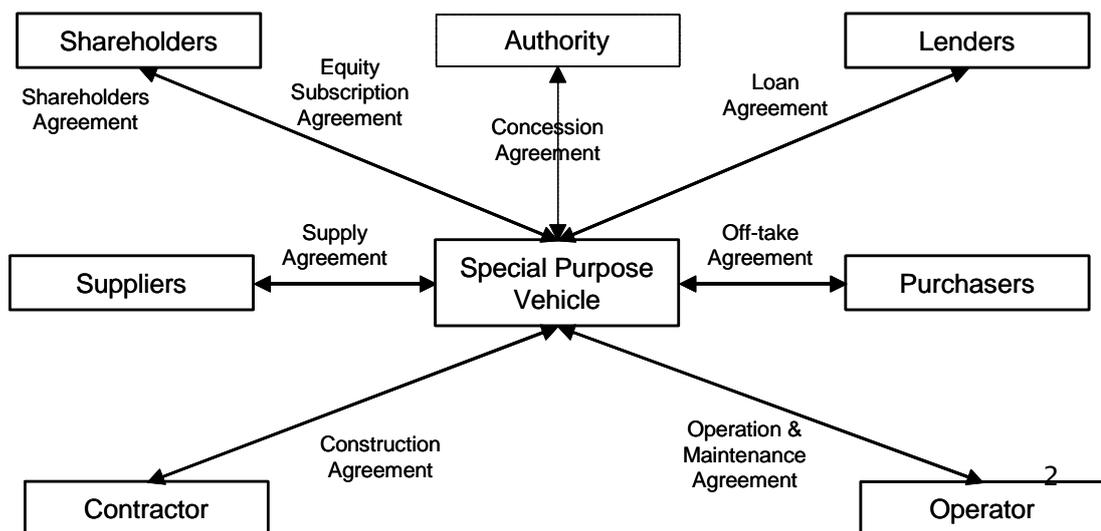
To ensure focused business operation at an arms length from its complex ownership structure, it is the responsibility of Cell C (Pty) Ltd to operate the mobile network in South Africa. Cell C is also the borrower of a project finance package that includes a loan from the DBSA.

The company's network roll-out plan consists of 2,350 live base stations by 2005. More than half of these are already live, carrying 50% of the company's traffic, with the remainder being catered for within Cell C's 15-year domestic roaming agreement. Cell C is exceeding its projections and has 2 million subscribers. As the latecomer to Vodacom and MTN it achieved an estimated 32% of the industry's net pre-paid growth and 38% of its net post-paid growth. It estimates that 55% of its overall growth in 2003 came from entirely new entrants to the market, whereas 45% comes from churn from its competitors.

b. Parties in a Project Financing

The diagram below illustrates the relationship between the main parties in a project financing and the agreements that govern their relationships.

If a public authority aims to have the private sector provide a public service and finance the capital investment it can enter into a Public-Private Partnership (PPP) with the private sector. Quite often, in a large PPP, e.g. toll roads, the project company builds, owns and operates the infrastructure and uses a project finance structure to finance the capital investment. The private party may be compensated from the public authority's budget or through charges or fees collected from users of the facility or a combination of the above.



Main Parties in a Project Financing

N4 Toll Road

Private toll roads in South Africa are becoming familiar PPPs.

The 503km N4 toll road between Witbank and Maputo is one of the first private toll roads in recent history. The joint Implementing Authority, comprising the South African National Roads Agency Limited and Direção Nacional de Estradas e Pontes (DNEP) of Mozambique represent the public sector interests in the project.

Trans African Concessions (Pty) Ltd (TRAC) is the Concessionaire of the R3bn project to build, finance, operate, maintain and expand the toll road. The Sponsor of the project is the SBB Consortium of contractors, Stocks & Stocks, Bouygues and Basil Read who holds 40% of the equity in TRAC. The balance of 60% of the equity is held by non-sponsor parties, e.g. South African Infrastructure Fund, RMB Asset Managers, CDC, South African Mutual Life Assurance, Metropolitan Life Ltd, Sanlam Asset Managers and SDCM (Mozambique).

As part of the project financing, loans were advanced to TRAC by ABSA, FNB, Mine Employees & Officials Pension Fund, Nedcor, SCMB and the DBSA. Financial Close was reached during 1997. This signified the start of the 30-year concession period.

c. Characteristics of Project Finance

The establishment of a special project company and the predictability of the future cash flows are the most prominent characteristics of a project financing. But there are a number of other characteristics as well:

- Cession to the Lenders of the Borrower's rights to project assets, (including shares, physical assets, material contracts, funds on account).
- Involvement of "deep-pocket partners" with vested interest in the success of the project, e.g. government, sponsors, contractors, insurers, suppliers, off-takers, etc.
- Step-in rights, with tighter covenants to trigger renegotiations before significant credit deterioration.
- Sponsors are often counterparties, e.g. off-takers, giving them a vested interest in the success of the project.
- Restrictions on facility drawdowns, use of proceeds, and mandatory prepayments in favour of the lenders.
- Contract structure apportions risk amongst the parties.
- Contractual obligations, penalties, and remedies influence the activities of the sponsors in favour of the lenders.
- Offshore and debt service accounts to mitigate cash flow volatility.
- Prohibition of additional indebtedness.
- Commercial value of project can survive the demise of a sponsor, supplier, contractor, etc.
- Syndication of loans appeal to a broad retail market, limits aggressive loans, and all lenders benefit from recovery process.

d. Project Finance vs. Corporate Finance

The alternative to creating a special project company which raises the funding for the execution of the project is for the corporate to implement and finance the project on its balance sheet. Some of the differences between these two types of funding entail the following:

- Corporate finance is suitable for smaller projects whereas project finance is best suited for large projects, usually in excess of R250 million although smaller projects can be financed with the concomitant higher transaction costs.
- Corporate Finance is appropriate where the company is strong and relatively large in comparison to the project.
- Corporate finance transactions can be arranged much faster than project finance. These can be concluded in months whereas project finance transactions can take years to conclude (time taken to conclude requisite agreements, applications for any required licences and/or permits etc)
- Project debt is usually more expensive than corporate debt.
- Corporate lending usually has shorter tenures than project lending.
- Discipline of project finance is stronger than corporate finance.
- Corporate Finance uses more classes of debt. Historically project finance consisted of bank loans but this is changing and a growing proportion of project debt now consists of bonds.
- Project loans have lower probabilities of default (PD) and higher recovery rates than corporate loans. Loss given default (LGD) of the combined project finance portfolios of 4 lead banks (ABN AMRO, Citibank, Deutsche Bank & Société Générale) was 25%, but subsequent to restructuring 100% of loan value was maintained. Historical probability of default rates of project finance loans are comparable to BBB+ rated corporate unsecured long term loans and BB+ in the short term.
- Corporate-financed investments exposes a sponsoring firm to losses up to the project's total cost, whereas project-financed investment exposes the firm to losses as large as its equity investment.
- Project finance protects the corporate balance sheet.
- For banks, expectation is that project finance requires less regulatory capital.
- A project company provides the opportunity to create a new asset specific governance structure to manage the conflicts between ownership and control and between owners and related parties, e.g. suppliers, etc. In a corporate financing the assets and cash flows would be governed by existing corporate structures.
- Single asset nature makes a project's performance transparent. In contrast corporate borrowers often have diverse stream of revenues, complicated subsidiary structures and accounting treatments, and cash flow streams that are difficult to analyse.

Mobile Systems International (MSI)

A Corporate Financing

MSI is an international telecommunications company registered in the Netherlands with geographically diversified mobile operations in Africa. It is known in the market by its Celtel brand name. In stead of

investing in each of its 12 operations in Africa, the DBSA provided a corporate loan of US\$30 million to MSI directly. The strength of the MSI balance sheet and its reputable shareholding, including, the IFC, DEG, FMO, CDC Capital Partners and others made a corporate financing attractive. By advancing the loan to MSI at the corporate level as opposed to the project level, the high risks of the individual countries and projects were mitigated against.

e. Sectors

Project financings have been successfully implemented in projects in the following sectors globally:

- Infrastructure, including water & waste water, roads, railways, ports, airports, etc.
- Power
- Telecommunications
- Oil & Gas
- Mining
- Industrial
- Public services, e.g. schools, hospitals, government accommodation, public lighting, etc.
- Tourism

The Marromeu Sugar Project

Agri Industrial Sector

Marromeu is situated in the Sofala province of Mozambique. It was one of the first projects initiated under the multi-sector integrated development programme for the Zambezi River Valley. An existing sugar mill was rehabilitated, associated infrastructure was built and 10 270 hectares of sugar cane were replanted. Total project cost was \$118,6 million. A group of Mauritian companies (75%) and the Government of Mozambique (25%) are the shareholders in the project company, Companhia de Sena. The total equity contribution amounted to \$37 million. The shareholders also provided \$10,7 million in shareholder's loans. The lenders include the DBSA, IDC, SCMB, Mauritius Commercial Bank and a consortium of Mozambican banks. They provided senior loans, mezzanine debt and quasi equity of \$65 million. The debt to equity ratio was 65 to 45 per cent.

The DBSA provided a senior loan (\$10 million) as well as a quasi equity/subordinated debt instrument (\$2 million). Pricing (risk margin) took into account the major project risks. The DBSA was also willing to take on political risk and price for it.

Lenders had recourse to the sponsors prior to the completion of the project (under the Sponsors Support and Subordination Agreement). The lenders were able to call on the sponsors to provide additional equity or shareholder loans to cover cost overruns and cash flow shortfalls when necessary. The sponsor's/borrower's technical completion undertaking specified that sufficient sugar cane had to be produced and delivered to enable the project to meet its projections as indicated in the base case model.

f. Success factors

The success of a project financing can never be guaranteed, but certain factors improve its probability of success.

If the *technology* to be employed is not proven then venture capital or some other funding mechanism may be more appropriate. Project finance, due to its reliance on certain cash flows requires that the technology employed is conventional. Unproven technology increases completion - and operating risk.

The quality of the *sponsor* improves the probability of success. It is not so much the size of the sponsor than the experience to complete and operate a project that is of the essence.

If the projected *available free cash* to service debt is substantial, then the chances of success are improved. This is usually measured in terms of a high Debt Service Cover Ratio (DSCR), i.e.

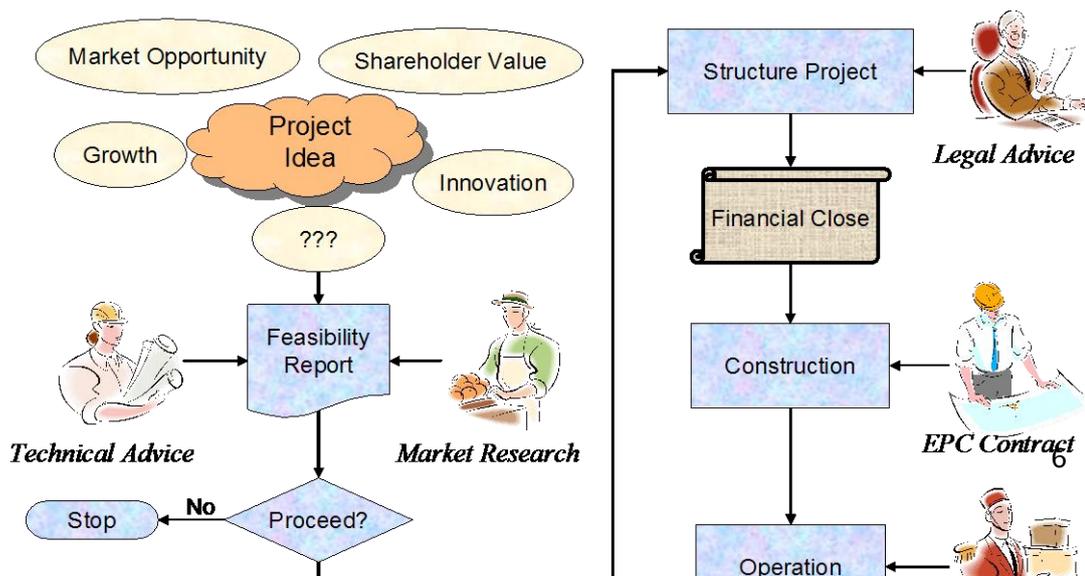
$$\text{DSCR} = \frac{\text{Cash Available for Debt Service}}{\text{Principal} + \text{Interest}}$$

Although *commercial risk cover* reduces the loss in the event of default, it does not reduce the probability of commercial risk events occurring. The presence of such insurance in a project financing would suggest that the parties had a high expectation of the occurrence of such risk events which is borne out by the correlation between commercial risk cover and default.

3. Secure Funding

a. Process to secure funding

A rigorous project preparation process needs to be undertaken to prove the merits of the project to potential funders. Financial close is the milestone in the project cycle that is reached when funds are secured. To get to that position the feasibility of the project needs to be proven and the project contractual structure must be substantially in place. A characteristic of the process is the involvement of a number of advisors on behalf of the sponsors and the lenders to provide advice on technical, market, financial, legal and other issues. The diagram below is a simplified illustration of the project cycle.



Project Cycle

Whereas the sponsors need an indication of the profitability of the project and the potential returns they will be earning on their investment, the lenders will be particularly keen to maximize certainty about the cash flows of the project. Information that will assist to obtain such certainty includes:

- Satisfactory feasibility study and financial plan,
- Confirmation of the market for the product or service being produced by the project,
- Availability and cost of input materials and energy sources,
- Comprehensive financial model with sensitivity and scenario testing,
- Availability of supporting infrastructure, logistics and communication links,
- Comfort with regard to the experience of project participants, e.g. management, contractors and operators,
- Adequate institutional arrangements are in place to implement the project,
- Controlled impacts of the project on the social and natural environment,
- Satisfactory legal due diligence and contractual arrangements,
- Predictable legal and regulatory environment,
- Identification of all project risks and mitigatory measures and risk transfers to be put in place.

b. Role of the Project Manager towards the success of the process

The successful Project Manager will close a WELL STRUCTURED deal
ON TIME and at a GOOD PRICE

In essence the Project Manager creates music from a variety of notes!

Phuti Malabie

i. Period of execution

The PM needs to ensure that the execution of the transaction does not have unnecessary delays. To this extent the PM plays a vital role in managing the different resources in the execution of the project:

- E.g. lawyers are not always incentivised to close a deal as they are typically paid on an hourly basis and therefore it's important that the PM does not allow legal advisers to lead the transaction.
- Technical advisers need to be given clearly defined scopes for studies (e.g. environmental). Scopes that are not clearly defined can result in studies that are too broad & that do not give investors the pertinent info required for permit applications etc.
- Lenders and investors need to be given sufficient and accurate project information in order for them to go through their approval processes promptly and successfully.

The PM needs to pre-empt some of the project requirements e.g. start the application process for regulatory requirements as early as possible. Additionally the PM should start preparing the Scope of Work for the Independent advisers as early as possible etc

ii. Flow of information

The PM needs to ensure that there is control of flow of information between parties, particularly between technical advisers and potential financiers. Incorrect information in the wrong hands can affect the project.

iii. Project Perceptions

The PM plays an important role in maintaining a positive perception of the project amongst stakeholders. Particularly where “buy-in” is required.

iv. Transaction costs

The PM has to ensure that the project does not incur unnecessary transaction costs. For example, lenders often share independent advisers instead of each having their own in order to ensure that the project is not unnecessarily burdened with costs.

v. Negotiation

The PM needs to have adequate understanding of all the different variables of the project in order to help the project company successfully negotiate its contracts with all the different parties involved.

c. Types of funding

The funding of a project company consists of 2 main categories, i.e. equity funding and debt funding.

- Equity - the funds contributed by the sponsors and other shareholders. It represents the risk capital of the project and gives the shareholders of the project company ownership rights including the right to returns subject to the performance of the project and after the debt funders have been paid.
- Senior debt – Debt (loans) that rank ahead of any other finance in the event of repayment, security or action, i.e. for the lower risk that it takes it earns a lower rate of interest.
- Mezzanine Funding – This instrument is placed between equity and pure debt in that it has characteristics of both, e.g. quasi equity such as a preference share with a fixed annual dividend but with conditional ownership rights only. Or, subordinated debt, which in exchange for taking more risk, earns higher interest and often participates in the upside of the project, alternatively with the option to convert some of the debt into equity at a future date (equity kickers).

Bonds are normally interest only loans in the sense that they pay interest (coupon) during the term of the loan and principal at the end of the loan period (at maturity). CPI-linked bonds were used in toll road financings in South Africa. The capital and/or interest payments on these bonds are linked to an inflation index, e.g. CPI.

Maputo Port

Variety of Financial Instruments

The Maputo Port project is believed to be the first full privatisation of a port and a port authority role in Africa or any emerging market. It is one of the projects of the Maputo Development Corridor.

The equity holders of the Maputo Port Development Company are the sponsors The Mersey Docks and Harbour Company (UK port operator), Skanska (Swedish construction Company) and Liscont Operadores de Contentores S.A. (Portuguese container terminal operator) and the non-sponsor shareholder Caminhos de Ferro Mocambique (CFM) the national rail and port operator.

The capital investment programme is app. US\$75 million with 53% debt. The balance consists of equity funding and internal cash generation.

Mozambique market and political risk necessitated the involvement of development finance institutions in the project.

The senior debt is provided by FMO, SCMB and DBSA and amounts to US\$ 28 million. SCMB has political risk cover from the Swedish International Development Agency for its loan.

FMO also provides a US\$5million tranche of subordinated debt.

Mezzanine Debt is provided by 3 Nordic Export Credit Agencies (ECA) and consists of a Note Instrument, characterised as an equity participating mezzanine loan instrument which does not impact negatively on the D:E ratio.

d. Sources of funding

There must be synergy between the objective of the funding source and the attributes of the financial instrument, e.g. an institution requiring high returns in exchange for risk will invest in equity and an institution requiring certainty of repayment at low risk will invest in debt.

- Equity – Investors in equity look to the returns of the project and are prepared to accept the risk if the upside potential is attractive. Exit strategies are important considerations for these investors.
 - Sponsors
 - Passive investors
 - Equity funds
 - Institutional investors
 - Development Finance Institutions

- Debt – The bulk of a project’s financing consists of debt. Debt holders are interested in the cash flow of the project to ensure that debt service - payment of principal and interest - takes place.
 - Banks
 - Multilateral agencies
 - Development Finance Institutions
 - Capital markets for bonds
 - Export Credit Agencies (ECA) can be a source of funding for a project where the applicable country’s products and services are inputs to the project. It often comes with political risk insurance.

e. Capital Structure

Conceptually one expects high risk projects to attract more equity and less debt and low risk projects to be highly geared. A well structured project financing may be financed by close to 100% debt, although this is rare. Even if the financial model would indicate that the project can afford to repay 100% debt, lenders usually require some cash equity by the sponsors to prove commitment.

There is no hard and fast rule to determine D:E ratio, but it can be assumed that the country, the sector and the project itself all have a bearing on the ratio. One quantitative method of determining the D:E ratio is to determine the changes in IRR of a project as a result of a sensitivity analysis of project activities. A small change in IRR for a change in the risk associated with a project activity would indicate that that activity could be financed by debt. Conversely should the IRR have a large variation with a change of the risk of a particular project activity, that activity should be financed by equity.

The debt service coverage available will guide the structuring. Assume the following alternative debt funding proportions in the table below.

Alternative 1 has a 67:33 D/E ratio. In Alternative 2 equity is increased to 47% and debt is further divided into 40% senior and 13% subordinated debt. In the first alternative the DSCR is 1.25, which depending on the sector of the project may be regarded as marginal. By changing the financing plan the DSCR of the senior tranche improves to an attractive 2.00 and even the subordinated tranche has a better DSCR than the proposal in Alternative 1. The subordinated debt ranks below the senior debt but is more expensive for that reason. The tax status and accounting treatment of the different instruments may also impact on the structure. So do other variables of the debt, e.g. loan term, debt repayment profile, grace periods, credit enhancement mechanisms, etc.

	Alternative 1	%	Alternative 2	%
	R '000		R '000	
Equity	5,000	33%	7,000	47%
Senior loan	10,000	67%	6,000	40%
Sub loan	0	0%	2,000	13%
Total Financing	15,000	100%	15,000	100%
Senior loan debt service	1,600		1,000	
Sub loan debt service	0		450	
Total debt service	1,600		1,450	
Cash available for debt service	2,000		2,000	
DSCR Senior Loan	1.25		2.00	
DSCR Sub Loan	n.a.		1.38	

f. Role of Arrangers

The employment by the sponsors of equity and debt arrangers to assist in raising the funding for the project is almost a prerequisite for a large project. The arranger is the entity that agrees and negotiates the project finance structure, usually a bank entitled to syndicate the loan. The arranger is often the senior tier of the syndication. Most Project Finance Divisions of Investment or Commercial Banks will be able to perform that function, in lieu of arranging and/or success fees.

4. Risks

To the extent that an event impacts on the cash flow of a project and consequently reduces the ability of the project to repay its debt, the event is a risk absorbed by the financiers.

However each project financing has its own unique structure, and it is not uncommon to have each of the parties in a project financing accept certain risks and safeguarding the lenders through mitigation structures in the contractual arrangements. The table below identifies the project risks and offers a selection of mitigating structures that lenders could insist on to minimise the impact of the risk on them.

#	Risk	Mitigants
Within the control of the Company		
1	Participant Risk	Joint Venture Agreements, Contingent Financial Support, Cross collateralisation, default and charging clauses
2	Engineering Risk	Warranties, Insurance
3	Completion Risk: (cost overruns,	Sponsor Support Undertaking, Standby

#	Risk	Mitigants
	delays)	Facilities, Turnkey contract (Liquidated Damages, Performance Bonds, Retention Monies), Capex Reserve
4	Operating management	Management Agreements
5	Operating Technology	Guarantees, Technology Management, Insurance
6	Operating Cost	Pass-through structures (project input costs passed through to purchasers), Maintenance reserves
Outside Company's control		
7	Supply Risk	Supply Agreements (Put-or-pay), Collateral
8	Market Risk	Off-take Agreement (Take-and-pay)
9	Infrastructure Risk	Government commitment
10	Environmental Risk	Environmental management, Rehabilitation Guarantee
11	Political Risk (currency inconvertibility, war, expropriation)	Insurance, Offshore accounts, Local Participation
12	Force Majeure	Insurance
13	FX Risk	Matching, Hedging, Swaps
Within Financier's control		
14	Syndication Risk	Underwriting Agreement
15	Funding Risk	Interest Make-up Agreement, Swaps, Supplier credits, Leasing
16	Legal Risk	Legal Opinion

The company will in turn shift some of the risks to another party, e.g. completion risk will be passed on to the contractor and operational management risk to the operator. Most of the mitigation measures will also be ceded and pledged (assigned) to the lenders as part of the security package, e.g. concessions, off-take agreements, insurance proceeds, project accounts, etc. In addition the lenders will typically require mortgage bonds over fixed assets and notarial bonds over moveable assets. They will also insist on covenants relating to minimum DSCRs, dividend lock ups, etc. to be included in the loan agreements to minimise the risk.

Sasol Natural Gas Project

Essential Risks

The Sasol Natural Gas Project is a R8.6 billion project that aims to develop the gas fields and processing facility in Mozambique, and to construct and operate the gas pipeline from the processing plant to facilities in South Africa.

The project is an illustration of how different risks are allocated to different parties in the project.

Market Risk:

The bulk of the gas produced will be consumed by Sasol itself. A floor price in the Gas Sales Agreement mitigates against adverse movements in the price. A sensitivity analysis showed that the project was robust even at a long-term oil price as low as \$12. The Gas Regulatory Agreement between Sasol and the South African government gives Sasol exclusive rights to the South African gas market for ten years.

Foreign Exchange Risk:

The bulk of the debt is ZAR denominated, while the project will produce both rand and dollar revenues.

Political Risk:

The Investment Promotion and Protection Agreement protects South African investors in Mozambique and *vice versa*. Within the framework of this agreement the project enjoys protection against nationalisation, expropriation and adverse government actions. Legal structuring also mitigates against political risks. The Gas Regulatory Agreement mentioned above protects the project against South African Government action, and should the government of Mozambique nationalise or expropriate the project, it will be unable to market its product in South Africa. The Mozambican government co-owns a joint venture which was established to develop the upstream potential. Its substantial financial interest in the potential to earn royalties on the gas will encourage political commitment to ensure the success of the project. The DBSA's close relationship with the two governments and the presence of multilateral institutions, including the Multilateral Investment Guarantee Agency (MIGA), the International Bank of Reconstruction and Development (IBRD) and European Investment Bank (EIB) are further political risk mitigants.

The financing strategy for the Sasol project relied on a large part of the debt being raised by development finance institutions with the capacity to take on political risk, thus reducing the need for political risk insurance. The DBSA was chosen to be the lead arranger of all financing sourced from various institutions and was asked to underwrite a total of R1,5 billion, which resulted in a direct investment of R650 million plus underwriting of R850 million. By taking on political risk, as commercial banks cannot, the Bank facilitated private sector investment. The Bank also took a leading role in assessing the social and environmental risks, and promoted corporate responsibility in this regard.

5. Certainty of Cash Flows

Underlying a project financing is the aim to maximize the certainty of cash flows. The risk mitigation measures discussed above will contribute towards improving the certainty of the cash flows.

a. Revenues

Principally Revenue = Quantity x Price. In a market where both these items are subject to the vagaries of market demand, e.g. mobile phone subscriptions in a telecoms project or bed-nights sold in a hotel project, market research studies become essential in an attempt to forecast future revenues. Where the sale of the product or service is subject to an off-take agreement, e.g. electricity sold in a Power Purchase Agreement (PPA) between an Independent Power Producer (IPP) and a municipality, the

revenues are far more certain and probably only subject to off-taker credit risk.

b. Capex

The certainty of the cash flows associated with the construction of the project can be improved by the conclusion of a fixed price turnkey contract. During the project preparation period, professional input (Engineering and QS) will enhance the understanding of cost estimates for financial modeling purposes.

c. Opex

The involvement of the operator at an early stage in assisting to estimate operation and maintenance costs will improve the certainty of cash flows. By entering into pass through agreements whereby input costs are passed on to the purchaser, certainty of the operational costs will be further enhanced. Alternatively the raw material price can be indexed to the spot price of the finished product, e.g. the price of alumina can be indexed to the LME price for aluminium in the case of a smelter project.

d. Interest rates

Due to the fact that debt is the major portion of a project financing, interest becomes a significant expense and instruments that ensure certainty of interest rates, will, at least for banks, serve as mitigation. An interest rate swap is such an instrument.

In general terms a swap is a contractual agreement to exchange a stream of periodic cash flows between two counterparties. Interest rate risk can be hedged by entering into a swap with a counterparty. In the plain vanilla case cash flows calculated on a nominal value at a floating interest rate is exchanged for the cash flows of the same nominal value at a fixed interest rate.

e. Inflation rates

An estimate of the future inflation rates will provide an indication of the expected nominal and real returns of the project. Cash flow certainty can however only be achieved if cost increases are passed onto the purchaser through price increases in the product. By tying this up in a pass-through contract, the risk of price escalation will be mitigated.

f. Exchange rates

The availability of foreign exchange is subject to supply and demand of that currency. The exchange rates will be influenced by factors such as inflation rate- and interest rate differentials between the domestic and foreign currency and the purchasing power of the currency.

It is prudent to ensure that the currency of the financing and the currency of the revenue coincide. If this is not possible a currency swap can be entered

into which is similar to an interest rate swap except that there is also an exchange of principal involved.

g. Using stochastic methods to forecast

Notwithstanding the aim to maximize certainty of cash flows, especially for a banker, this seldomly happens. Bankers are inclined to develop best case, base case and worst case scenarios on which decisions regarding finance are based. This methodology does however not assign probabilities of occurrence of the particular scenario. There is a case to be made for utilising Monte Carlo simulation analysis to allow for uncertainties of critical input variables to determine the probability of occurrence of essential output variables.

h. Financial modeling

The most important decision making instrument in the financing of a project is its financial model. The model ties up the revenue model, capex, opex, capital structure and other inputs to provide projected multi-year financials, e.g. income statement, balance sheet and cash flow statement with appropriate ratios, DSCR, IRRs, etc. The model can also be programmed to do scenario testing, sensitivity analysis and stochastic analyses.

6. Conclusion

Project Finance aims to get the project off the balance sheet of the sponsor. By doing so the funding that is required will be repaid from the revenues of the project only. Any project financing therefore requires positive cash flow. Project financings are highly geared. In raising the capital a structure is required that is bankable. Complex contractual arrangements will tie down the rights and obligations of the different parties and allocate the risks between them.

A project promoter seeking finance for a new project should preferably seek the services of a financial advisor to assist with the feasibility study of the project and appoint arrangers to raise the funding.

The project manager has an important role to perform in the process of successfully raising the funds, not in the least to ensure that resources are used optimally to achieve financial close.

Project Finance is well suited as a funding structure for large projects.

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