

Does funding huge capital outlay projects through Project Finance enhance shareholders' value?

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by

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ABSTRACT

Despite project finance advancing as a crucial tool in funding huge capital outlay projects that facilitate development little research has been conducted in assessing whether it is the most optimum way of funding big project especially when one looks at the value addition in respect of the shareholders. Consequently, this research attempts to examine whether Project Finance when compared to conventional funding done under Corporate Finance does contribute to shareholders value in funding huge capital outlay projects.

The research was conducted in two phases. The first phase analysed the Mozal Project which was jointly funded by the IDC and other parties under project finance. In this phase the research assess how the IDC as a funder established measures to protect and enhance value for its shareholders in funding the project. The phase goes further by assessing the value created by the investment from an IDC shareholder point of view. The results are then compared to that of other high capital magnitude projects funded under on balance sheet finance. The second phase comprised of 5 interviews and 25 questionnaires with local Project Finance industry professionals with the aim of establishing the common view on which between on balance sheet and off balance sheet finance has a positive impact on shareholders' value.

The first phase led to a general guide on funding projects via project finance does add to shareholder value or not whilst the second phase gave a factual conclusion on whether funding shareholder value through project finance creates value. Specific recommendations for further research work was also indicated where it was felt that there are certain areas that can help in advancing the research subject.

"Until one is committed, there is hesitancy, the chance to draw back, always ineffectiveness. Concerning all acts of initiative (and creation) there is one elementary truth, the ignorance of which kills countless ideas and splendid plans: that the moment one definitely commits oneself, then Providence moves too. All sorts of things occur to help one that would never otherwise have occurred. A whole stream of events issues from the decision, raising in one's favour all manner of unforeseen incidents and meetings and material assistance, which no man could have dreamed would have come his way. I have learned a deep respect for one of Goethe's couplets:

Whatever you can do, or dream you can, begin it.

Boldness has genius, power, and magic in it. "

-- W.H. Murray, The Scottish Himalayan Expedition

"Twenty years from now you will be more disappointed by the things you didn't do than by the ones you did do. So throw off the bowlines. Sail away from the safe harbour. Catch the trade winds in your sails. Explore. Dream. Discover." -- Mark Twain

DEDICATION

To my father, an inspirational, astute, never say die character, a true gentleman. Your encouragement was crucial in this work. Sadly, you departed in July before the completion of this work.

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IDIOTICON OF TERMS

Agency Cost	Conflict of interest between two parties mainly in a master servant relationship
APV	Adjusted Present Value
CAGR	Cumulative Average Growth Rate
CAPM	Capital Asset Pricing Model
CF	Corporate Finance- unlimited recourse on balance sheet financing for projects
CGIC	Corporate Guarantee Insurance Company
DEG	An international finance company offering long term development finance and advice in emerging economies
DBSA	Development Bank of Southern Africa
DCF	Discounted Cash flow
DDM	Dividend Discount Model
DNA	Deuoxiriboneuclec acid- the genetic make-up of something borrowed from science
DWC	Dead weight costs
EBTIDA	Earnings Before Interest Tax and Depreciation
EIB	European Investment Bank
Eskom	the South African government owned electricity generating company
FCF	Free Cash Flow
FIS	Free in Stockyard
IFC	International Finance Corporation
IDC	Industrial Development Corporation of South Africa
IPO	Initial Public Offering- listing of a counter on the stock exchange to trade for first time
IRR	Internal Rate of Return
Ke	Cost of equity
Kd	Cost of debt
LBO	Leverage Buy-Out
LME	London Metal Exchange
MOZMACO	Alluminium Management Company of Mozal Proprietary Limited
MIGA	Multilateral Investment Guarantee Agency
M&M	Modigliari and Milner

Mozal Project	The Mozambique Aluminium smelting project, a joint venture between IDC et-al, funded through project finance in Mozambique
NAV	Net Asset Value
NEF	National Employment Fund
NPV	Net Present Value
PER	Price Earnings Ratio
PF	Project Finance- Non recourse or limited recourse project financing method
PROPARCO	a Development Financial Institution partly owned by Agence Française de Development (AFD) and private shareholders from the developed countries and developing nations. It promotes private investment in developing countries to reach the Millennium Development Goals (MDGs)
PURPA	Public Utility Regulatory Policy
r	return
Rf	risk free rate
Shareholder value	the value accruing to owners of equity in an investment
SPV	Special Purpose Vehicle
SPC	Special Purpose Company
TTA	Technology Transfer Agreement
US\$	United States Dollar
US	United States
WACC	Weighted Average Cost of Capital
β	Beta- the responsiveness of a stock price to market movement

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1 INTRODUCTION

1.1 Research Area and Context of study

This research assesses which funding modality between Project Finance (PF) and Corporate Finance (CF) optimises shareholder value when funding large capital outlay projects. The research further compares and contrasts the benefits that accrue to shareholders under both modalities. Risk and return play a crucial role in arriving at an acceptable conclusion in this problem. Risk return trade-off provides the lynchpin of shareholder value in finance hence it is critical to assess how these two interrelated variables are affected when huge capital outlay projects are funded off balance sheet as opposed to on balance sheet.

To arrive at a suitable conclusion an assessment of a historical huge capital outlay project is done to assess the shareholder value created for one of the shareholders. Although the project was funded under PF, the assessment of the project enables the analysis of change in shareholders' value from a return basis. The results from the analysis will then assist to answer the hypothetical question.

The results will benefit Corporate managers in assessing the optimal funding modalities for any proposed huge capital outlay project and when considering expansion options.

The aim of this research is to establish whether funding huge capital outlay projects using entirely PF in contrast to on balance sheet finance, enhances shareholders' value. Shareholder value enhancement is a function of an entity's profitability, positive free certainty cash flow, positive net present value, acceptable payback period and suitable discount rate. All these aspects accrue to the shareholders or sponsors of a project. Traditionally, high capital outlay projects could either be funded on balance sheet and would appear on an entity's balance sheet. An entity would raise money either through debt or equity in order to fund a new huge capital outlay project that it expects to enhance value for its shareholders. If indeed the huge capital project turns out to be a success then the shareholders in the corporate entity would benefit through increased free cash flow which will accrue to them as dividend payment as well as capital appreciation through growth in the overall value of their company. If on the other hand, the project fails, the shareholders are likely to suffer huge financial losses in the form of loss of dividend earnings, worse still the unlimited recourse that debt holders have over the corporate entity entitles them to attach not only the assets linked to the project but

other assets beyond that huge capital outlay project, resulting in the Corporate entity failing to meet its debt repayment obligations. As free cash flow (dividends) becomes negative then shareholder value is eroded. Furthermore, as assets are attached as a result of failure to meet repayment obligations, the firm's value both from a net asset point and from a discounted cash flow point suffers thereby eroding shareholders' value.

If on the other hand, the same huge capital outlay project is separately incorporated under a different corpora coporata through project financing, the limited recourse principle ensures that the risk of failure will insulate the degree of loss suffered by the sponsors of the project whilst simultaneously ensuring that they reap the benefits from any upside that may accrue from the project. The discount rate used to discount free cash flow (FCF) is therefore likely to be different for investors under a project funded on balance sheet.

To answer the research question, two phases of the project shall be conducted. In the first phase an assessment of a huge project (The US\$1,365b Mozal project) that was funded via off balance sheet is conducted from an Industrial Development Corporation ("IDC") point of view. IDC was one of the sponsors hence the project benefits from a shareholders' perspective will be analysed and used to assist in answering the research question.

The second phase involves questionnaires and interviews with both project finance and corporate finance practitioners to gauge their opinion on the subject.

The research also highlights the importance of PF in the successful implementation of huge capital outlay projects through raising finance. The embracement of the recommendations of the research will highlight the pertinent issues in project financing which can be used to stimulate project financing in Africa to bridge the financial resources gap that the continent has perennially experienced.

1.2Context of study

The term PF is often misinterpreted as some form of project generic financing. However, it 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. PF can be defined as a financing structure, most appropriate to infrastructure projects, in which project assets and project cash flows are the main collaterals.

The idea of financing a project having the cash flows generated by the project itself as collateral is not recent. In 1299 a Florentine bank financed a silver mine project owned by the British crown in Devon having as collateral only the mine production. Other examples are European commerce with Asia in the XVIIth century, which was financed through a stake in the value of transported goods.

In the 1930's, loans for oil drilling in Texas used to be paid with oil production. In the US Electricity Industry a big step was taken by the Congress in 1978 with the approval of the Public Utility Regulatory Policies Act (PURPA), through which utilities were to sign long term contracts with independent power producers that used renewable sources, such as wind and solar power production and energy-efficient thermal processes such as cogeneration units. These projects used to be Special Purpose Companies (SPC) that took non-recourse loans (*Gati, p12-p15*). It is therefore clear that PF has been in use for some time, however, little research has been conducted to assess its benefits from a shareholders' perspective especially as it is continuously used in this day and era.

At Corporate level, projects are funded through either equity or debt and these instruments can be accessed through new issues on the capital markets. In the case of debt, a corporate entity's assets are used to secure the debt by the bondholders who are entitled to sell off the collateral to reduce their exposure in case of default. This recourse aspect by its nature provides the first and vital distinguishing feature between Corporate and Project financing. Whereas in CF, debt holders have unlimited access to all the corporate entity's assets, in PF their recourse is limited to project cash flows and project assets. It is important to highlight that the choice of funding a new project between either using internal resources, new equity or debt as under CF or separate recourse PF affects shareholders' value in the underlying company through either the magnitude of Free cash flow (FCF) accruing to the underlying company or through the magnitude of the discount rate at which the FCF is discounted. When a huge capital outlay project is funded on balance sheet, the discount rate is likely to increase due to the risk posed by the project. Although the fact that the FCF accruing to the shareholders is not shared with anyone tends to offset the risk posed by the discount rate, overall benefits to the shareholders still need to be assessed. On the other hand, if a new project is funded through PF, then the discount rate for the underlying company is likely to be lower thus enhancing shareholders' value even though the FCF accruing to the shareholders might be smaller compared to under CF as it is shared with other participants in the Special

Purpose Vehicle (“SPV”) consortium. The SPV is the company that is set up to solely house the project with its heterogeneous ownership structure. The question that this research tries to answer is under which funding mode is shareholder value enhanced between CF and PF.

Various contracts between parties involved in the project need to be made in order to secure the project’s viability. An SPV, the legal entity independent from the sponsor is established separately from the sponsor with other stakeholders in the project playing different roles as dictated by the contract.

To attract financiers to the project, financiers need to be satisfied with their collateral hence cash flows should be projected with a greater degree of certainty. This is one of the main reasons why PF is frequently used in huge capital projects – such as electrical energy, telecom, toll roads, etc. Proponents of PF argue that its main advantage lies in risk mitigation achieved mostly through risk sharing amongst different parties involved in the project. The goal in PF is to reduce project cash flows variability. If cash flow variability is reduced the risk is also reduced and the greater the shareholder value created. Whether a new project is funded on or off balance sheet, it is clear that shareholder value is clearly affected. This research tries to determine in which instance shareholder value maximised.

1.3 Problem Statement

1.3.1 Main problem

Despite the historical use of PF, there has been limited research on the subject in totality. It is important to determine whether there are real benefits in using PF both from a shareholders view and a development point of view. Shareholder value is a critical catalyst for development finance. Development funding sources emanate from different shareholders. Investors who in essence are shareholders need to be well informed on whether they stand to benefit from their own firm’s actions. This information dissemination restores their confidence which spurs them to continually avail development funds. This research attempts to reduce information asymmetry for the investor thereby preventing adverse selection when funding huge capital outlay projects. Their decisions making process will then be guided by proven research on whether they are assured of returns on their investments. The research paper also aims to influence investor decisions on where to channel their resources.

High capital outlay projects are vital as they can catalyse development and reduce poverty thereby enabling the world to realise the Millennium Development Goals early. Through their huge impact on community development they accelerate development which is constrained by the limited availability of financial resources. For resources to be availed in abundance, the investor community which, essentially comprises of financiers shareholders, needs to be convinced that its funds are being invested in projects that maximises their return at the lowest possible risk. Investment decisions on high capital outlay projects can only be seriously considered when there is enough research on the subject to guarantee an informed decision. Africa is likely to benefit significantly with the increased flow of high capital outlay funding. Such flow can only be enhanced if investors are equipped with enough information for decision making. Due to information asymmetry, potential investors are not clear on whether they stand to benefit or lose through using the available mode of funding such high capital outlay projects. This research therefore attempts to bridge this perceived gap.

1.3.2 Sub-problems

The first sub-problem is to identify the benefits, challenges and risks faced in funding huge capital outlay projects under both modalities from a shareholder value perspective.

The second sub-problem is to measure the magnitude of identified benefits, challenges and risks existing under the two different funding modes.

The third sub-problem is to determine whether shareholder value is preserved, enhanced or lost by funding huge capital outlay projects under the two propositions.

1.4 Purpose and Significance of the Research

Available data sources indicate a steady growth in PF market which indicates an increase in the appetite for PF at global level. Project financing has expanded from US\$73,5b in 2003 to US\$132b in 2006 with a CAGR at 21%. Although the increase differs within geographical macro areas, Africa accounts for 18% of total financing in the 4 year period (Source: Thomson One Banker). The steady increase in PF market gives opportunities for companies looking to access capital markets. Despite this increase in PF resources, companies still struggle to raise financial resources to fund huge capital projects due to fear that the huge debts associated with such capital expenditure will put the corporate entity at risk thereby eroding shareholder value. Financial repression and shallow capital markets are often cited as

the chief reasons behind the slowdown in the development of Africa. The growth of PF market ushers in a critical source of capital that can assist in funding development in Africa thereby realising economic growth. Africa has the potential to expedite its growth through harnessing the available PF resources to execute its huge pipeline of development and infrastructural projects. These projects range from mineral resources, water projects, infrastructural projects, housing and power generating projects. Such projects if properly funded have the potential to increase Africa's GDP, reduce poverty and create employment. Despite the abundant and ever-growing PF resources, resourceful firms through their shareholders seem reluctant to venture into PF deals. This research is therefore set to unpack the benefits, challenges and risk in shareholder value terms embraced in the choice of funding a huge capital outlay project.

1.5 Research Questions and Scope

The research is set to establish which of the two funding methods between project and corporate finance is desirable for firms seeking expansion projects and investments opportunities in huge outlay projects. The conclusion shall be drawn through analysing the trade-off between the discount rate and FCF under both funding modes through interviews and a case study assessment

1.6 Research Assumptions

The following assumptions have been made regarding the study

- The total number of respondents will be sufficient to gain adequate data that would be representative of the broader population;
- Information accessed on projects is a true representation of the actual project structure.

2 LITERATURE REVIEW

There are different ways of funding high capital outlay projects. The chief funding modes are to either use on balance sheet finance through CF or alternatively fund such project off balance sheet using PF. The benefits of using each of the two alternative methods from a shareholder value perspective and how such benefit if any is not entirely clear. This chapter therefore reviews the available views of the researchers on the perceived value addition spawned by the different funding modes. The shareholder value creation benefits of choice of funding can be extracted through an assessment of the three main motivations behind using PF. The three motivations behind value creation in PF are often summarised from the following important, related and inseparable finance concepts;

- **Agency cost motivation-** reduce costly agency (incentive) conflicts inside project companies and among capital providers;
- **Debt overhang motivation-** reduce leverage-induced underinvestment in sponsoring companies, a phenomenon known as “debt overhang”;
- **Risk Management motivation-** reduce underinvestment in positive net present value (NPV) projects due to distress costs and/or managerial risk aversion (Esty, 2007).

An assessment of literature on the agency theory and the two interrelated concepts of debt overhang and risk management would assist in providing solutions to the subject of whether choice of funding a huge capital outlay project has a material impact on shareholders’ value. Before assessing this literature, it is also key to highlight the different features of the two funding modes.

2.1 Definitions of PF and CF

In order to be able to determine the benefits derived from the choice of funding, it is paramount to first distinguish between the two funding modes as highlighted through the different definitions. PF is a method of raising long term debt financing for major projects through financial engineering based on lending against the cash flow generated by the project alone (Yescombe 2002).

PF is the structured financing of a specific economic entity the SPV created by sponsors using equity or mezzanine debt and for which the lender considers cash flow as being the primary

source of loan reimbursement, whereas assets represent only collateral (Gatti 2008). PF refers to financing of an independent economical unit, in which lenders are satisfied mostly with cash flows generated by this unit as the source of funds to pay the loan and the economic unit is given as collateral for the debt (Nevitt&Fabozzi 2000). PF implies the creation of a legally independent company for the specific asset (project), which is financed through non-recourse debt (Esty 2003). Project financing may be defined as the raising of funds on a limited recourse or non-recourse basis to finance an economically separable capital investment project in which the providers of the funds look primarily to the cash flow from the project as the source of the funds to service their loans and provide the return of and a return on their equity invested in the project. The terms of the debt and equity securities are tailored to the cash flow characteristics of the project. For their security, the project debt securities depend mainly on the profitability of the project and on the collateral value of the project's asset (Finnerty, 2007).

From the above definitions, the following critical features of PF can be accredited. These features being;

Non-Recourse financing- meaning the limited liability nature of the project, hence if there is a residual debt that remains following a project completion or failure it will not be redeemed by resources beyond those ring-fenced in the project thereby insulating the sponsors against project default risk.

Separate Legal Entity- the project exists and is incorporated as a separate legal entity whose umbilical code is severed from the sponsors' other assets. As such any risk that affects the project is also detached from the sponsors. However, the sponsors are entitled to the free cash flow that accrues after servicing debt holders.

Huge long term capital projects-although not restrictive, PF often involves enormous funding which will have a material impact on a firm's balance sheet if it is funded using internal resources on balance sheet.

2.2 Typical characteristics of PF include the following;

- It is provided for a ring fenced project through a special purpose legal entity whose only business is the project;
- It is usually raised for a new project rather than an established business;

- There is a high debt to equity ratio;
- Limited guarantees and limited recourse;
- Lenders rely on the future cash flow projected to be generated by the project for interest and debt repayment rather than the value of its assets;
- The main security for lenders is the project company's contracts, licences or ownership of rights to natural resources;
- The project has a finite life based on the length of the contract, licences or reserves of natural resources (Yescombe 2002).

On the other hand, on balance sheet, CF means the sponsors use all the assets and cash flows from existing firm to guarantee the additional credit provided by lenders in a new high capital outlay project. If the project is not successful, all the remaining assets and cash flows can serve as a source of repayment for all the creditors (old and new) of the combined entity (existing firm plus new project) (Gati, 2008).

Typical CF features include the following;

- Guarantees for financing area provided by existing assets of the borrower that are independent from the new project;
- It reduces the financial elasticity of the borrower as it ties down its whole balance sheet;
- Accounting treatment of the new funding is on balance sheet;
- The new funding of the project is based on the strength of the balance sheet, company profitability and customer relations (Gati, 2008)

Despite the limited nature in research on the impact of choice of funding huge capital outlay projects on shareholders' value, an analysis of the available literature can assist in arriving at an informed conclusion.

The Agency Cost Motivation

The relationship between shareholders and management is referred to as an agency relationship and such relationship exists whenever someone (the principal) hires another (the agent) to represent her interests. In such a relationship, there is a possibility of conflict of

interest between the principal and the agent. Such conflict is referred to as the agency problem (Firer, Ross, Westerfield and Jordan, 2008). Chemmanur and John (1996) evaluated the rationale behind project financing merely by assessing the principle of corporate control which in essence is an agency problem. They went on to say that a firm's manager/owner derive benefits that they cannot contract away to other debt holders through control. In CF structure where a firm undertakes multiple projects, the consequent financial and organisational structure reduces the owners control ability. They cited the following as the benefits derived from corporate control;

- Discretion to invest free cash flow in their projects of choice;
- Ability to pay themselves lucrative salaries;
- Freedom to make other corporate decisions to benefit self-interest at the expense of lenders and shareholders

Their model of the interrelationships among corporate ownership, organisational and financial structures leads to interesting implications concerning the following;

- Conditions optimal to incorporate PF as a separate legal entity;
- Optimal amount of debt financing for a successful project;
- How to structure the debt contract (straight debt or limited recourse)
- Debt allocation across a portfolio of projects;
- Conditions under which limited recourse project financing is the optimal financing technique for a project.

Chemmanur and John's main results of their research were as follows;

If management can maintain control of all the projects under its consideration when they are wholly equity financed it will not issue any debt as they will lose their control. Furthermore, if management has comparable abilities relative to potential rivals in managing all the projects then it will finance the projects through CF in a single entity. However, if management abilities differ significantly across the projects, then it will be better to carry out the projects separately through PF and outsource expertise.

Secondly, if management cannot retain control of all the projects if they are wholly equity financed, due to limited internal cash resource, then it will finance the projects through issuing a combination of both equity and debt thus further diluting shareholders' value. If

furthermore management's abilities are comparable across the projects and the structure of control benefits is also similar, then the projects will be owned by a single entity through CF with a debt to equity mix within the entity. If on the other hand, management control benefits are heterogeneous across projects while ability to manage the projects remains similar limited recourse project financing will be optimal. Management will operate all the projects but use limited recourse project financing to limit its liability (Finnerty, 2007, p16-17).

What is clear from Chemmanur and John's assessment is that managers would rather fund capital projects on-balance sheet in order to retain their corporate control. What the researchers did not allude to is whether the managers would still strive to maintain control by funding the project on-balance sheet even if the project involves huge capital outlay and is too heavy for the corporate entity. What is clear though is that their decisions enhance agency costs at the expense of shareholders' value as the managers try to retain control by funding a new project on-balance sheet that could have been funded efficiently using off-balance sheet means to protect their own interest. This reduces shareholder value as funding the huge capital project on-balance sheet is merely done to safeguard management's interest without necessarily considering owners' interest. It is clear from this analysis that the risk of agency costs is likely to be higher under CF compared to when a project is funded off balance sheet. Finnerty (1996) and Kensinger and Martin (1988) note that sponsors structure project companies to limit managerial discretion over free cash flow. Esty (2003) further explains this theory by suggesting that first, the sponsors use contracts to constrain managerial discretion. Contracts both prescribe and proscribe certain actions by involved parties. He notes that the fundamental component of contracts in PF is the "cash flow waterfall," which prioritizes claims on cash flows and allocates cash flows accordingly. Through this cash flow waterfall, he suggests, that parties agree in advance to virtually all capital expenditures, maintenance expenditures, debt service, reserve accounts, and shareholder distributions. Although contracts work well as a first line of defence, they are, inevitably, incomplete even when the documents extend for thousands of pages. Unforeseen outcomes, unspecified situations, costly enforcement, and asymmetric information all leave the sponsors vulnerable to agency conflicts. As underlying uncertainty increases, whether at the project, sponsor, industry, or country level, the probability that a long-term contract will remain intact decreases. As a result, sponsors use other aspects of project structure to "complete" the contracts ex post.

Sponsors use concentrated ownership, unique boards of directors, separate legal incorporation, and high leverage to limit managerial discretion. Concentrated debt and equity ownership provide critical monitoring of managerial actions. By using bank debt instead of public bonds, sponsors gain the benefits of creditor monitoring as described by Diamond (1984) and Esty (2001b), and demonstrated by James (1987). Similarly, concentrated equity ownership gives sponsors the incentive to monitor managerial actions while board membership gives the shareholders the ability to hire and fire senior managers, and to approve important operating decisions (Esty, 2003 p12). From this assessment proposed by Esty, it is clear that inefficiencies associated with agency costs which have a negative material impact on shareholders' value are better dealt with under PF as the important tools to deal with such elements are clearly laid down in the SPV contracts as compared to the normal CF structure. Under CF, a decision is normally made to apportion free cash flow between distribution to investors and reinvestment. In PF however, investors have total control over free cash flow which will normally be distributed amongst the investors. Jensen (1986) postulated the concept of agency cost of free cash flow which emphasises on the conflict of interest between shareholders and managers in reinvestment vis a vis dividend distribution in a CF set up. PF eliminates this agency cost by ensuring that a contract for the distribution of cash flow is initiated from the onset whilst the distribution of such is subject to managers' discretion under a CF structure. Such discretion might be solely for the benefits of the managers at the detriment of the shareholders which ultimately reduces shareholders' value.

Jensen and Meckling (1976) postulate that the conflict of interest between shareholders and bond holders result in agency costs problem. To protect their turf, the bond holders will come up with stringent covenants in the contracts which they heavily monitor through active monitoring of the company's performance. The ultimate result is to limit managers' control of free cash flow as it is required to retire debt early to reduce the bond holders' risk. As a result, it limits growth opportunities as corporate expansion is limited as cash goes to pay debt at the expense of new projects meant to enhance shareholders' value. Through PF this conflict can be circumvented as the project is funded autonomously.

Scipper and Smith (1996) assessed the relationship between firm value and ownership structure and concluded that reducing agency costs through designing ownership structure that aligns shareholders' and managers' interests through share participation schemes enhances firm value. These structures are easy to establish under a PF structure as opposed to

a corporate entity structure as managers' rewards can easily be tied down to the specific project performance. This enhances shareholder value as managers' interests are aligned to the shareholders value maximisation interests.

Esty goes further by suggesting that certain characteristics make assets prone to costly agency conflicts. In his assessment he differentiates between assets that generate high operating margins and those that generate low margins. Assets that generate high operating margins and significant amounts of cash flow can lead to sub-optimal effort and excessive perquisite consumption (Jensen and Meckling, 1976). More importantly, assets that generate free cash flow in excess of what is needed to fund all positive NPV projects—can lead to inefficient investment and value destruction on a much larger scale (Jensen, 1986; Harford, 1999; and Blanchard, Lopez-de-Silanes, and Shleifer, 1994). Esty cites the \$3.4 billion Chad Cameroon Pipeline with Earnings Before Interest Tax and Depreciation (EBITDA) margins of 80-85% and up to \$1 billion of cash flow per year for 30 years or more as an example. Such projects he says have low positive growth options as its assets have a finite life over which they rapidly deplete. Consequently, it is optimal for them to shrink and return free cash flow to the capital providers rather than growth through reinvestment. Esty identifies the juxtaposition incentives of the managers who manage the investments and the capital providers as a source of costly agency conflicts which destroys shareholders' value when such projects are funded under CF structures. Under CF structures, such cash flows might not be distributed to the shareholders and may be continually reinvested by the managers.

Esty further identifies asset specificity as another source of costly agency conflicts when funding huge capital outlay projects regardless of the choice of funding. He suggests that because project companies are new and independent firms, project sponsors have the opportunity to create asset-specific governance systems to address these agency conflicts in ways that cannot be replicated under CF. If the same assets were financed using CF, then the company's existing structure would govern the asset and its cash flows. In most cases, the existing governance system was not designed to address asset-specific agency conflicts. By tailoring the governance structure to fit the specific application, sponsors can minimize the costs associated with agency conflicts. In doing so, they increase the asset's expected cash flows and the likelihood sponsors will earn an appropriate return on their invested capital, which is exactly what Shleifer and Vishny (1997) say governance systems should do.

Ultimately the increase in cash flow and the resultant decrease in costly inefficiencies can only be beneficial to the shareholders through value enhancement.

2.3 Debt overhang motivation

Esty argues that funding projects through PF adds value through both a reduction in agency costs and the reduction in the opportunity cost of underinvestment due to leverage and incremental distress costs in sponsoring firms. In driving his point, Esty first assumes both an investment decision involving a capital asset and a financing decision. Looking first at the investment decision, Esty cites McConnell and Muscarella (1985) assertion that firms experience positive and significant returns when they announce increases in capital expenditures. This he contrasts with Jensen and Ruback (1983) assertion on acquisition that postulates that merger announcements generate non-positive returns for acquirers. Whereas investment decisions, particularly the decision to acquire, could reflect empire capital, typically from banks, it, however, makes it significantly more difficult to finance negative NPV projects. Esty further says that convincing bankers, who have limited upside potential, yet bear significant downside exposure, to provide the majority of the capital limits the investment process. This he cements through Bharadwaj and Shivdasani (2003) theory which states that the returns to firms announcing cash tender offers increases proportionally with the amount financed by bank debt. Consequently, Esty strong word questions M&M's capital structure irrelevant theory.

Esty then extended to investigate the effect on PF on firm's value (shareholder's value) by further assuming that financing costs are actually an attempt at increasing firm value in contrast to M&M. The increase in firm's value through PF as opposed to traditional way of financing investments he says is achieved through a reduction in total financing costs. Esty suggested that two conclusions can be drawn. A pragmatist conclusion suggesting that the decision to use PF results in zero effect on firm value or a purist conclusion which identifies debt overhang as the main reason behind shareholder value destruction when a new project is funded on balance sheet as opposed to PF.

Modigliani and Miller (1958) capital irrelevance theory showed that corporate financing decisions have no impact on shareholders' value through their powerful dividend irrelevance proposition in which they highlighted factors that are critical to financing decisions. Key to

their analysis is the notion that financing and investment decisions are separable and independent activities. When this assumption holds, various financing decisions such as the firm's organizational, capital, board, and ownership structures do not affect investment decisions or subsequent cash flows.

However, Esty, 2003 strongly argues that the rise of PF has proven that financing structures do matter in determining shareholders' value. Total PF investment has grown from less than \$10 billion per year in the late 1980s to almost \$220 billion in 2001 (Esty, 2002a). Within the United States, firms financed \$68 billion of capital expenditures through project companies in 2001, approximately twice the amount raised in initial public offerings (IPOs) or invested by venture capital firms during the same period. While considerably smaller than the U.S. leasing, asset-backed security, and corporate debt markets—\$240 billion, \$354 billion, and \$434 billion, respectively, in 2001—PF according to Esty is, nevertheless, one of the most important financing vehicles for investments in the natural resources and infrastructure sectors such as power plants, toll roads, mines, pipelines, and telecommunications systems.

Esty acknowledges that the protracted nature of PF deals as well as the high costs of establishing a PF SPV are likely to be more cumbersome than financing such a huge capital outlay project under CF. Consequently, PF's justification should exhibit significant benefits to shareholders to offset the incremental transaction costs and time. Nevitt and Fabozzi (2000, p. 5), try to highlight such PF benefits by claiming that, "Project financing can sometimes be used to improve the return on the capital invested in a project by leveraging the investment to a greater extent than would be possible in a straight commercial financing of the project." Whilst acknowledging that there is an element of truth in that leverage increases expected equity returns, Esty further argues that such motivation for using PF does not recognize that higher leverage also increases equity risk and expected distress costs hence he goes further in searching other justifications for using PF.

2.4 Risk Management motivation

Yescombe, 2008 identifies PF as a form of risk management through two ways. Firstly he identifies the risk limitation ability of PF when compared to CF in that an investor in PF does not normally provide guarantees for the repayment of the debt. Secondly he mentions risk spreading amongst different sponsors in a high capital outlay project as some form of risk

management. Gati, 2008 emphasises how PF is efficient in a four pronged approach to high capital outlay projects risk management. He describes how PF is efficient in terms of risk management, risk analysis, risk transfer and allocation and residual risk management. John and John (1991) postulated that outstanding debt leads to the underinvestment incentive. Their analysis focussed on how project financing arrangements can reduce the risk inherent in the underinvestment incentive by identifying circumstances in which PF is the optimal financing structure for a project. Basing their model on prior work of Myers (1977) in which Myers argued that outstanding debt distorts a firm's capital investment choices. They therefore suggested that risky debt leads to managers foregoing positive Net Present Value (NPV) projects thereby benefiting debt holders to the detriment of shareholders. Firm's manager represent the entity's shareholders and will only take up a positive NPV project if it leads to positive NPV to both debt holders and shareholders. Thus a project may have positive NPV from an enterprise value but negative NPV for equity holders. By foregoing positive net present value, shareholders in essence accrue more costs as prospective lenders demand a higher rate of return for their loans if they find the firm engaging in such behaviour. This is also related to the same argument raised under the agent cost between the debt holders and shareholders which arises out of competing claims for the corporate assets between the two. The agency costs arise because collateral holdings in large corporations are widely dispersed and monitoring is costly and incomplete. Relating to the agency costs is also the costs related to information asymmetry as lenders do not have access to full information pertaining to specific projects. PF can help bridge this gap as lenders can make their lending decisions on a project by project basis. PF further aligns the interests of both debt holders and shareholders. John and John further assert that when compared to CF of projects, PF increases value through the following ways;

- Reducing the agency cost (countering the underinvestment incentive);
- Increasing the value of interest tax shield (Finnerty, 2007, p17).

From John and John's underinvestment incentives, it is clear that corporate financing projects can have negative impact on shareholder value an argument that is married to the agency problem.

Esty also analyses two underinvestment motivations for project sponsoring firms relating to the capital investments decision making. He acknowledges that underinvestment in positive NPV projects can occur for many reasons, although his assessment only distinguishes the

effects of leverage and incremental distress costs as the two most prominent factors causing underinvestment. Esty then shows how PF mitigates both effects. PF circumvents leverage-induced underinvestment by allocating project returns to new capital providers in a way that cannot be replicated using CF debt. This debt overhang motivation is similar to the motivation described by Stulz and Johnson (1985) for using secured debt, but it is even more effective as it entirely eliminates recourse to the sponsor's balance sheet and it eliminates the possibility that new capital will subsidize pre-existing claims with higher seniority or reduce the value of junior claims (Myers, 1977). Esty acknowledges that the origin of the debt overhang problem is also an agency conflict, but he further distinguishes the debt overhang motivation from the agency cost motivation because the conflict occurs at the sponsor rather than the project level. As the conflict occurs at the sponsor's level as opposed to the project level, it means that such conflict can then be diversified away through PF but remains inherent when the project is funded on-balance sheet which then tends to support the view that PF projects hedges away costs related to conflict.

Shah and Thakor (1987) explained why PF is most appropriate for very large, high risk projects by analysing two projects. Chen, Kensinger and Martin (1989) observed that PF is widely used for medium-size, low risk projects such as cogeneration facilities. They further documented that PF has become the dominant method in financing independent electric power generating facilities, including cogeneration projects developed for several Fortune 500 companies. However their theory seems incomplete. Their research did not give any conclusive opinion on the impact on shareholder value of funding huge capital outlay projects using either PF or CF.

Esty (2004) explains the rationale for project financing and provides a variety of statistics describing this form of financing and distinguishing it from conventional corporate financing. Mao (1982) explained that in order for a project to secure financing as a separate economic entity, the relationships among the participants must be spelled out in detailed contracts.

Worenklein (1981) addressed the project's requirement for "sources of credit support" in the form of contracts to purchase output from the project and to supply the necessary inputs at controlled costs. The project promoters typically do not guarantee repayment of the project's debt, so creditworthy parties must provide credit support through such contractual undertakings. From the analysis, it is clear that the project promoters in huge capital outlay PF

deals incur insulated risk as a result of limited liability. Shareholder value in finance is optimised when the returns of a project are higher per given level of risk. Any modality that reduces or limits risk for the shareholders at the same return magnitude, directly enhances shareholder value. From Woreklein assessment, it is clear that risk accruing to the shareholders of the sponsors is limited through limited recourse. The alternative would have been to fund the project under a single sponsor's balance sheet which would increase risk for the sponsor's shareholders thereby reducing their value. One might argue that under non-recourse funding, all the cash flow from the funded project will accrue to a single sponsor as is the case with most mining companies thereby increasing returns to the sponsors' shareholders at the expense of a magnified risk. However when such risk is limited through PF and shared amongst different shareholders in other participating sponsors the shareholders' value will be enhanced as risk is reduced.

Esty (2004) provides a set of more than two dozen case studies highlighting the use of PF to develop a rich variety of projects in different parts of the world (Finnerty,2007). One case in particular, the Mozal project is assessed in this research to help answer the research question.

Esty further recognizes that investing in risky assets can generate incremental distress costs for sponsoring firms. If such distress costs are large, they can exceed the asset's net present value (NPV), thereby turning a positive NPV project into a negative investment (the total NPV is negative). Esty therefore suggests that risk can be mitigated by isolating the asset in a standalone project company, which then reduces the possibility of risk contamination, the phenomenon whereby a failing asset drags an otherwise healthy sponsoring firm into distress. It also reduces the possibility that a risky asset will impose indirect distress costs on a sponsoring firm even short of actual default. For example, Lamont (1997) shows how a shock to oil prices affected investment decisions in non-oil subsidiaries. Esty similarly suggests that a large loss on a corporate-financed huge outlay asset could affect investment decisions in the sponsor's other divisions, or investment decisions by related firms involved in joint production with the sponsoring firm. He further suggests that even when project debt is fairly priced, the expectation of costly externalities of this kind can discourage investment. From this analysis by Esty, one can then propose that from a risk management perception, funding a huge capital project on balance sheet does raise the threat of calamity to shareholders' value. When such degree of calamity exists it can then lead to a negative multiplier effect on

shareholders' value triggered by the increase in the discount rate in that particular company due to equity providers demanding higher compensation for the perceived increase in risk.

2.5 Value Enhancement and choice of funding

Modigliani and Miller (MM) irrelevance theory proposes that a firm's capital structure has no material effect on its value hence it has no bearing on shareholders' value (MM 1958, later Stiglitz 1974). However, their qualification only holds in a world of zero information asymmetry, transaction costs and taxes and complete capital markets which is far from the current world. Unpacking M&M theory reveals a deep rooted belief that firm's capital structure has no bearing on its value which is similar to shareholders' value.

McConnel and Servaes, (1995) found that capital structure matters in determining a firm's value. Ross 1977 supported MM later proposition that firm's value increases with leverage as the market perception is increased. In contrast Kinsman and Newman (1989) found that firms' having lower debt have higher value than firms with higher debt and concluded that firms can maximize their values by choosing low debt or zero debt. His proposition is also supported by Leland and Pyle (1977) who perceive that managers will take debt to equity ratio as signal with high leveraging implying higher bankruptcy risk (and costs) for low quality firms. Stulz (1990) postulates that leverage may have both a positive or negative impact on the firm's value. To support his argument, he developed a model in which debt financing can both reduce the overinvestment problem and the underinvestment problem.

A firm's "deoxyribonucleic acid" (DNA) comprises of equity and debt hence the magnitude of these two elements (debt or equity) should ultimately impact on its value. When funding projects on balance sheet, the NAV concept entails that a huge capital outlay project is likely to increase the debt significantly for the corporate entity. Even though on the corporate entity's balance sheet, this is matched by an equal increase in the assets thereby having a zero sum game effect, the effect on NAV in the short run might be insignificant. However, to maintain the constant impact on NAV, the depreciation loss of the huge capital outlay project should be matched by an equal redemption in the debt accrued. However, this is rather debatable as the huge capital outlay project depreciates faster than the rate of debt repayment as during the initial stages the project is likely to yield poor or negative cash flows to service

the debt. The impact on the NAV and shareholders' value is therefore likely to be negative if one considers shareholders' value from an NAV point of view.

Shifting focus to the equity concept of shareholders value, as debt levels increase, the threat of bankruptcy increase due to the huge debt overhang and the increase in risk. Default risk increases which then increases both the cost of debt as debt providers demand greater compensation for lending to a highly geared company. The cost of equity as well is likely to increase as the risk premium demanded by equity providers increase due to the perceived high risk associated with a highly geared corporate entity. The joint impact of these elements is to increase the WACC of the business. Ehrhaed and Bringham (2003) and Johannes and Dhanraj (2007)

Assessing shareholder value under PF (off balance sheet financing) the NAV of the sponsor is likely to be unaffected by the huge capital outlay being funded off balance sheet hence shareholder value is preserved. Using the equity concept, funding the project off balance sheet is likely to increase the value of the firm. The discount rate of the firm (WACC) remains unaltered as the sponsor is insulated from the huge debt that only affects the SPV balance sheet and cost of capital. On the other hand the sponsor's free cash flow is likely to increase from the free cash flow (if project performs well) from the huge capital project and the increase in the free cash flow coupled with a constant WACC will have a subsequent effect of increasing shareholder value.

The above analysis borders on PF having a positive impact on shareholder value from a risk and return perspective. One might argue that funding a project off balance sheet reduces the risk accruing to the sponsors' shareholders.

2.6 Other benefits- Reducing Asymmetric Information and signalling costs

Smith (1986) suggests that the type of instrument that a firm issues to raise capital externally can have serious signalling effects. By issuing debt as compared to equity, the signal is that the firm expects to generate significant income from the project as debt requires contractual payments in both capital and interest as compared to equity in which dividends are not a contractual obligation. This can attract competitors to bid for the same project. Shar and Takor (1987) further argue that PF reduces signalling costs arising from capital raising

shrouded in asymmetric information particularly in the case of high risk capital outlay projects. If competition increases, margins are likely to dwindle which reduces returns accruing to shareholders. PF prevents this by revealing only sufficient information to a small group of investors and negotiates a fair price for the project entity's securities thereby enabling managers' access to finance without revealing much information to the public. Shar and Thakor (1987) further state that PF is useful for projects that entail high information asymmetry costs e.g. large mineral exploitation projects. However Chen, Kensinger and Martin (1989) argue that Shar and Thakor's argument does not explain the use of PF in low risk projects that do not require confidential information.

Assessing the impact of the signalling effect when raising capital to fund new projects, it is highly likely that the corporate entity suffers from two fronts. Firstly the attraction of competition in the new projects will reduce the returns in the project which ultimately reduces free cash flow available to shareholders. Secondly, the increase in signalling costs will also lower the free cash flow available to the shareholders in the form of lower dividends. If the new project is funded off balance sheet then these issues can be limited hence preserving or increasing shareholders' value.

2.6.1 Other benefits- Preserving Financial Flexibility

According to Chen Kensinger and Martin (1989), Corporate Managers choose project financing for projects with information asymmetry costs (transparent projects) to preserve their flexibility to use internally generated resources for projects that cannot be disclosed to the public without disclosing sensitive information. This augurs well with the pecking order theory (Myres and Majluf, 1984). Such a decision to maintain flexibility leaves room for the corporate entity to borrow in order to finance other internal projects. If it raises money through debt then it benefits from tax shields which will overall lead to incremental free cash flow to the shareholders thereby creating shareholder value. However, Modigliani and Milner (MM) et al (1963) also highlighted that personal tax, i.e. the difference between tax rates on capital gains and tax rates on income tax erode the benefits of tax shields from an investor's perspective. Milner (1977) further presented a model in which the advantage completely disappears.

The uncertainty surrounding the tax benefits plus the tax losses being a zero sum game means shareholder value enhancement cannot be ascertained on the basis of preserving financial flexibility through a corporate entity funding structure. However, value can be enhanced by funding projects with huge asymmetric information costs through PF which attracts lower cost of finance thereby enhancing shareholders value through incremental free cash flow.

An established company launching a new investment project normally finances it on balance sheet by adding the project to the company's business which has an incremental effect on the company's size through an increase in asset base. The project is supposed to generate cash flows and provide a return (r) in capital employed. The immediate task for the company is to raise funding for the new project which normally comes from retained earnings, raising fresh debt or new equity injection. This entails funding new projects through CF.

However, for PF, there is separation between the existing company and the new project.

Analysis of the costs involved in the two financing modalities i.e. CF and PF does help in assessing the efficiency of the two in finance theory terms.

The 2 cost components in finance are the Cost of equity (k_e) and Cost of debt (k_d). Using the Capital Asset Pricing Model (CAPM), $k_e = r_f + (r_m - r_f) * \beta$ where;

$r_m - r_f$ = excess return for the stock market;

r_m is the return for a general stock exchange index calculated over a long period of time;

r_f = risk free rate of return for government securities and

β = stock risk

the Cost of Debt k_d can be calculated using the weighted average of the effective cost of the various debt components within the finance structure.

The Weighted Average Cost of Capital (WACC) = $k_e(e)/(e+d) + k_d(1-t)*(d)/(e+d)$.*

According to Modigliani and Milner (MM), a company will only engage in a new project if that project maximises the value of the company. Firm Value maximisation is enhanced if return of new project $r \geq$ WACC. The basic assumption is that when a company finances a new project on balance sheet (CF), creditors and shareholders will establish the cost of new debt or equity based on the following factors;

- Strength and profitability of the new project proposed;
- Strength and soundness of the company that will house the new project

The second factor is the most pertinent to the creditors as it guarantees them payment in the event that the new project fails to realise enough cash flow to service their exposure. This phenomenon is standard when funding new projects under CF. However, it is not applicable in the following cases;

- When project is very large compared to company size;
- Has a higher degree of risk than the average risk level of the asset portfolio in the balance sheet;
- It is linked to the company's own core business.

Under such circumstances, PF will be the preferred funding modality as it enhances shareholder value.

2.6.2 Other benefits- Shareholders value and the “deadweight costs”

To further explain the importance of PF in safeguarding firm value, Esty introduced the concept of “deadweight”. He says that the key to understanding why PF creates value is to recognize that firms bear “deadweight costs” (DWC) when they invest in and finance new assets. These deadweight costs (transaction costs, agency costs, distress costs, information costs, and taxes) result from capital market imperfections or frictions. This is indeed a breakaway from the famous M&M concept which assumed that such costs are non-existent. To illustrate how PF creates value, Esty disintegrates the analysis into components in an approach that resembles Myers' (1974) adjusted present value (APV) methodology. The value of a new capital investment equals the present value of project cash flows (the optimal value in a frictionless setting) minus the deadweight costs associated with the project and with the sponsoring firm thus Investment value = (Project value) - (Project DWC) - (Incremental Firm DWC). To simplify the analysis, Esty assumed the following;

- only the deadweight costs change under alternative financing structures;
- the project NPV is positive and does not change.

From this theoretical framework it means a firm decides to invest only if the project has a positive NPV by itself, as long as the sum of the deadweight costs does not exceed the project's NPV. He then concedes that contrary to M&M, financing decisions do matter because they affect the existence and the magnitude of the deadweight costs. Although these deadweight costs are difficult to quantify in practice, this framework helps identify the factors

that drive financing decisions. Such deadweight costs as previously described are better managed when a project is financed off balance sheet in contrast to on balance sheet. From this deadweight concept one can conclude that PF has more chances of enhancing shareholders' value as compared to a similar project being funded on balance sheet.

2.6.3 Literature review conclusion

To summarise the literature and borrowing from Esty, certain assets, namely large, tangible assets with high free cash flows, are susceptible to costly agency conflicts. Esty therefore suggests that the creation of a project company provides an opportunity to create a new, asset-specific governance system to address the conflicts between ownership and control. Esty likens the observed governance structures in project companies to that in leveraged-buyouts (LBOs) hence the possibility to achieve similar results described by Jensen (1989) and Kaplan (1989 and 1991). Esty says project companies cash flows are attractive as the cash flows are project specific and have limited growth opportunities which means cash flow distribution is almost guaranteed as opposed to cash flows in a CF structure which depending on managers' decisions hence may not be easily distributable. Most projects are, in fact, wasting assets (e.g., a gold mine) that optimally need to shrink over time.

Esty further explains that project structures reduce agency conflicts between owners and related parties as the transaction-specific nature of project assets deters strategic behaviour by suppliers of critical inputs or expropriation by host governments. Project companies utilize joint ownership and high leverage to discourage costly agency conflicts among participants. Esty therefore concludes that these agency cost motivations remain the most important reasons why firms use PF to preserve value for shareholders.

Using traditional finance concepts as proposed under the M&M capital irrelevance theory it would appear that both PF and CF when assessed from a firm's point of view, are actually elements of capital structure. From their capital irrelevance concepts it is easy to be tempted to conclude that how a huge capital project is financed has no material impact on the firm's value which ultimately has a zero impact on shareholders' value.

However, recent finance research endeavoured to prove the contrary as supported by the above literature. (Burner, Langohr and Campbell 1995), (Esty 2003), (Banal-Estanol and Ottaviani, 2010) also came up with critical arguments to the suggestion to M&M's capital irrelevance theory. For example, Esty, 2003 identifies deadweight costs management as a significant benefit in funding huge capital outlay projects under PF. M&M propositions in the capital irrelevance concept assumes that such costs are non-existent. This assumption greatly distorts the results in favour of capital structure irrelevance when the literature is assessed from an M&M basis. The above literature suggests that these pertinent issues have significant bearing on the cash flow accruing to the shareholders both from a magnitude point of view and from the decision to distribute such cash flow which then distinguishes between returns accruing to shareholders under the two different scenarios. The impact of the underinvestment concept on dismissing positive NPV projects as a result of the presence of debt and the related agency costs driving this decision tilts the argument in favour of having huge capital outlay projects funded under PF as opposed to CF.

The above literature also assessed the impact of risk on shareholders' value. The conclusion seems to be that such risk is highly magnified when a project is funded on balance sheet as opposed to off balance sheet. Most finance concepts acknowledge the inverse correlation between risk and return. The literature has indicated that the risk is likely to be high when a project is funded on balance sheet as opposed to off balance sheet, which, ultimately favours that shareholders are likely to benefit from value increment if a huge outlay project is funded on balance sheet as the risk is highly mitigated.

From the assessed literature, the research is of the view that despite traditional finance theory suggesting that capital structure is irrelevant and has no impact on shareholder value, modern day finance research has assisted in highlighting that shareholder value can be enhanced by funding a new huge capital outlay project off balance sheet under project finance. The literature tends to suggest that there are many benefits to funding a huge capital outlay project off balance sheet than on balance sheet. Such benefits mainly accrue as a result of better management of agency costs and related issues such as risk when a project is funded off balance sheet than on balance sheet. However, no valid conclusion can be drawn from the literature on shareholder value benefits under the two different funding structures. It is therefore paramount to research further on which of the two funding modes maximises or preserves shareholder value. Despite the vast literature on the benefits and challenges of PF as

compared to CF, the main problem of which one between the two has a desirable effect on shareholders' value, remains unexhausted. The above literature merely indicates the influence of both funding modes on shareholder value but it is not conclusive. Consequently, this research has progressed further by investigating the ideas emanating from the above literature in two phases in order to give answers to the issue of shareholder value and high capital outlay project funding. The first phase investigations have focussed on analysing one project funded through PF in which the Industrial Development Corporation of South Africa (IDC) was a major sponsor. Using the various outcomes from the literature review, the research highlights how certain elements identified to be related with PF in the literature review were addressed to protect shareholders' value particularly for IDC and other sponsors. That chapter also attempts to measure and quantify the benefits to the shareholders in terms of shareholder value created in the Mozal project. This assessment attempts to measure the magnitude of shareholder value created or preserved in a typical PF structure and therefore provide an initial answer on whether there were significant shareholder value realised through the choice of funding. The second phase then uses questionnaires and interviews to assess the view of professionals with experience in both off balance sheet financing and on balance sheet financing on their opinions on the various issues raised in the literature review. This will ultimately provide an answer on which between the two funding modes present better shareholder value benefits.

3 RESEARCH QUESTIONS

The principal dynamics incipient from the literature is that there is definitely a link between PF and shareholders' value and also that such link exists between CF and shareholders' value creation. However it is not really clear whether the relation is more positive and pronounced on the former or latter.

The literature has also suggested that much of the shareholder value created is attributable to the ability to manage shareholder value leakage through costly agency costs. By choosing to fund a huge capital outlay project through a method that minimises agency costs shareholder value is likely to be enhanced or preserved.

A high capital outlay project demands significant money and would require enormous contribution by the sponsors. Such high outlay projects present incredible risk to the sponsors regardless of the way it is funded. On the upside, such projects have the ability to increase returns substantially for the sponsors. Sponsors in a bid to safeguard their investments would rationally attempt to strike a balance between the risk and the return when choosing to fund such projects and as such would ultimately enhance the value for their shareholders. Two choices are mainly at the sponsors' discretion, that is either to incorporate the new project as part of the existing portfolio within the sponsors' balance sheet and fund it internally. All risks and returns will accrue to the sponsor's shareholders in this on-balance sheet or CF setup. Another available choice is to insulate the shareholders by completely funding the new high outlay project off balance sheet in a separate SPV and in most instances teaming up with a number of sponsors to share the risk and returns.

The objective of this research is to determine which one between the two options of funding huge capital outlay results in more benefits to the shareholders. The research further explores the benefits and challenges in both funding modes by comparing and contrasting these aspects separately. Once the results are ascertained, the research will assist in demystifying PF and lay the groundwork for shareholders to explore the facts which will encourage the flow of funds towards huge capital outlay projects. Such projects can act as an active catalyst for development particularly within Africa where there is potential for development but there is huge resource constraints.

3.1 Research Question

The Research therefore attempts to address the following questions:

- **Research Question 1:** what are the benefits and challenges that are likely to accrue from funding huge capital outlay projects under both on-balance sheet and off balance sheet financing?
- **Research Question 3:** under which funding mode between PF and CF is shareholder value likely to be better managed?

4 RESEARCH METHODOLOGY

4.1 Introduction

The methodology that has been set out in exploring the research questions and arriving at an informed decision is set up in this chapter. The research first analyses the philosophy behind the research before outlining the methodological framework of the research.

The research is both exploratory and qualitative in nature and depends much on people's perception and opinion of the research subject.

4.2 Research Approach and Strategy

In the words of *Dr. Dash, IGNOU*, research is essentially concerned with exploring and understanding social phenomena which are educational in nature, mainly pertaining to formalized and/or spontaneously occurring social, cultural, psychological processes which could be termed as education. Consequently, it deals with educational questions that can be investigated in a satisfactory manner, and the methods which enable such satisfactory investigation and the utility of results emanating from such investigation (Dash, 1993).

Theoretical research problems emanate from heterogeneous notions and elucidations of social reality. In a bid to select suitable criteria of investigating a research problem, different paradigms have been developed. Thomas Kuhn one of the proponents of the term 'paradigm', characterizes a paradigm as: "An integrated cluster of substantive concepts, variables and problems attached with corresponding methodological approaches and tools...". According to Dash, there are mainly two paradigms to the verification of theoretical propositions, i.e. positivism and anti-positivism (or naturalistic inquiry).

4.2.1 Positivism

The positivist paradigm of exploring social reality is based on the philosophical ideas of the French philosopher August Comte, who emphasized observation and reason as means of understanding human behaviour. According to Comte, true knowledge is based on experience of senses and can be obtained by observation and experiment. Positivistic thinkers adopt his scientific method as a means of knowledge generation. Hence, it has to

be understood within the framework of the principles and assumptions of science. These assumptions, as Conen et al (2000) noted, are determinism, empiricism, parsimony, and generality.

‘Determinism’ means that events are caused by other circumstances; and hence, understanding such casual links is necessary for prediction and control. ‘Empiricism’ means collection of verifiable empirical evidences in support of theories or hypotheses. ‘Parsimony’ refers to the explanation of the phenomena in the most economical way possible. ‘Generality’ is the process of generalizing the observation of the particular phenomenon to the world at large. With these assumptions of science, the ultimate goal of science is to integrate and systematize findings into a meaningful pattern or theory which is regarded as tentative and not the ultimate truth (Dash 2003). Theory is therefore modified and revised in the wake of new evidence. Positivistic paradigm thus systematizes the knowledge generation process with the help of quantification, which is enhanced meticulousness in the explanation of constraints and the perspicacity of the relationship among them.

Although positivistic paradigm continued to influence educational research for a long time in the latter half of the twentieth century, it was criticized due to its lack of regard for the subjective states of individuals. It regards human behaviour as passive, controlled and determined by external environment. Hence human beings are dehumanized without their intention, individualism and freedom taken into account in viewing and interpreting social reality. According to the critics of this paradigm, objectivity needs to be replaced by subjectivity in the process of scientific inquiry. This gave rise to anti-positivism or naturalistic inquiry (Dash 2003).

4.2.2 Anti-positivism

Anti-positivism emphasizes that social reality is viewed and interpreted by the individual herself according to the ideological positions she possesses. Therefore, knowledge is personally experienced rather than acquired from or imposed from outside. The anti-positivists believe that reality is multi-layered and complex (Cohen et al, 2000) and a single phenomenon is having multiple interpretations. They emphasize that the verification of a phenomenon is adopted when the level of understanding of a phenomenon is such that

the concern is to probe into the various unexplored dimensions of a phenomenon rather than establishing specific relationship among the components, as it happens in the case of positivism.

In the field of research, Anti-positivism comprises of the following philosophical classes which explain daily human interaction with phenomena and as such advocate qualitative rather than quantitative approach to research investigation;

- *phenomenology*,
- *ethnomethodology* and
- *symbolic interactionism*.

‘Phenomenology’ is a hypothetical interpretation which believes that individual behaviour is a function of the experience harnessed out of an individual’s direct interface with the phenomena. Phenomenology disqualifies any kind of objective external reality. Husserl and Schutz are the main proponents of this school of thought. During interaction with various phenomena, human beings interpret them and attach meanings to different actions and or ideas and thereby construct new experiences. Therefore, the researcher has to develop empathic understanding to know the process of interpretation by individuals so that she can reproduce in her mind feelings, motives and thoughts that are behind the action of others (Dash 2003).

‘ Ethnomethodology’, an approach of phenomenological sociology, was developed by Harold Garfinkel and his fellow ethnomethodologists. It deals with the world of everyday life. According to enthomethodologists, theoretical concerns centre around the process by which common sense reality is constructed in everyday face-to-face interaction. This approach studies the process by which people invoke certain ‘take-for-granted’ rules about behaviour which they interpret in an interactive situation and make it meaningful. They are mainly interested in the interpretation people use to make sense of social settings.

The school of thought for ‘symbolic interactionism’ was pioneered by Dewey, Cooley and Mead among others. It basically emphasizes the understanding and interpretation of interactions that take place between human beings. The peculiarity of this approach is that human beings *interpret and define* each other’s actions instead of merely *reacting* to each

other's actions. Human interaction in the social world is mediated by the use of symbols like language, which help human beings to give meaning to objects.

Symbolic interactionists, assumes that by only focusing consideration on individuals' ability to generate symbolically meaningful objects in the world, human interaction and resulting patterns of social organizations can be understood. Consequently, not only do human beings change themselves through interaction, but also bring in change in societies.

The two paradigms presented here are concerned with two concepts of social reality. While positivism stands for objectivity, measurability, predictability, controllability and constructs laws and rules of human behaviour, non-positivism essentially emphasizes understanding and interpretation of phenomena and making meaning out of this process (Dash 2003).

4.2.3 Critical theory

Critical theorists like Habermas were critical of the earlier paradigms as they were not tuned to question or transform the existing situation. Habermas proposed theories which centred on a typology of interest. Habermas (1970) postulated three types of interest which generate three types of knowledge:

- A technical interest concerned with the control of the physical environment, which generates empirical and analytical knowledge.
- A practical interest concerned with understanding the meaning of situation, which generates hermeneutic and historical knowledge.
- An emancipating interest concerned with the provision for growth and advancement, which generates critical knowledge and is concerned with exposing conditions of constraints and domination.

Critical theorists suggest two kinds of research methodologies, namely, ideology critique and action research, for undertaking research work.

Critical theory has also been criticized by some of the contemporary scholars. Lakomski (1999) questions the acceptability of the consensus theory of truth on which Habermas' work is premised. Habermas' work is little more than speculation. Whilst the claim to there being three forms of knowledge has the epistemological attraction of simplicity, one has to

question this very simplicity (Keat, 1981); there are a multitude of interests and ways of understanding the world; and it is simply artificial to reduce these to three interests (Cohen et al, 2000).

4.2.4 Research paradigms and research methods

Each of the paradigms discussed above has definite research methods which can be used in carrying out scientific investigation. Positivism which emphasizes objectivist approach to studying social phenomena gives importance to research methods focusing on quantitative analysis, surveys, experiments and the like and therefore could not be used in this research. Anti-positivism stresses on subjectivist approach to studying research phenomena and attaches importance to a range of research techniques focusing on qualitative analysis, e.g. personal interviews, participant observations, account of individuals, personal constructs etc.

Similarly, critical theory suggests ideology critique and action research as research methods to explore the existing phenomena. As a result this research is premised upon the anti-positivism and critical theory paradigms.

4.3 Research approach

PF research is still lagging behind as compared to other studies in finance. Due to this information constraint the researcher felt that quantitative research methods will not be able to unpack the whole spectrum of answers sought by the research topic. As such the research approach is both exploratory and qualitative in nature. As alluded to earlier in the paper, the researcher uses one key PF case study in order to assist in providing answers to the research problem. Furthermore, the researcher conducted five interviews and distributed questionnaires to professionals who work across the project and corporate finance spectrum. Interviews as opposed to questionnaires allowed for open ended questions and discussions which could facilitate a vigorous and interactive research instruments and helped the researcher in filling the gaps left by the questionnaire. The results of the research are therefore more likely to be enthralling as they are based from life experiences (Gilham 2005). Thus whereas the questionnaire will form the skeletal

framework of the research, the interview will provide the much needed flesh to complete the whole picture of the research.

The researcher has adopted a qualitative and exploratory approach in order for the research to flow in an open ended process. According to Gilham (2000), an open minded researcher cannot always be sure about what direction the research will take. This then gives no room for preconceived meditations to prevail as these can compromise the research results. Pre-convinced notions can endanger the integrity of the research because elements that are not expected to be seen may be missed.

4.4 Research Design

The research was conducted in the following two phases;

Phase 1: Secondary Research:- This was conducted through an analysis of the Mozal Project Case study and the risk and returns that accrued to the IDC as a result of its participation in the project through PF and how such risks were managed in order to enhance shareholder value. Of primary focus in this section is how the IDC managed to derive shareholders' value through the management of the sources of the shareholders' value in PF that were discussed at length in the literature review. The results are then compared with other projects funded on balance sheet and of similar magnitude.

Phase 2: Primary Research:- This was conducted through questionnaires and interviews with key personnel in project finance to gauge their view on the research problem. These results are then married with the findings in phase 1 in order to come up with a common answer to the research question.

4.4.1 Methodology for phase 1

4.4.1.1 Rationale for the Method for Phase 1: Secondary Research

Secondary data analysis is an additional in-depth analysis: a more intensive focus on a particular finding or aspect than was undertaken as part of the primary work. Secondary data involves the retrospective analysis of the whole or part of a data set from a different perspective, to examine concepts which were not central to the original research. The

researcher has adopted this strategy to re-examining qualitative data relating to a case study which was funded off balance sheet to determine the value created for the sponsor's shareholders through opting to fund this project through that means.

Corti and Thompson 1998, Hammersley 1997, Corti et al 1995 suggest that the use of secondary data facilitates the archiving of data from qualitative studies and addresses the limitations of using primary research and the costs of qualitative research conducted on the basis of primary information. Hinds, Vogel and Clarke-Steffen 1997, Sandelowski 1997, Szabo and Strang 1997, Thorne 1994 suggest that the approach can be used to generate new knowledge, new hypotheses, or support for existing theories; that it reduces the burden placed on respondents by negating the need to recruit further subjects; and that it allows wider use of data from rare or inaccessible respondents. The Mozal Alluminum Project is a well-documented project finance case study and the location of the researcher within the sponsor's workforce puts the researcher in an advantageous position to gain access to information pertaining to the research requirements and to spawn new information about the project case study. Although the case study has been widely researched in previous forums and academic circles this research attempts to analyse the project based on the new information that has evolved during the lifespan of the project, which information was not available in previous research forums of the project. Case studies may either focus on a single case or use a number of cases. Yin 1984 describes cases with a single source of information as holistic cases, cases with multiple source of information as embedded cases. He cautions that embedded cases may be mistakenly classified as holistic cases if a single source has identifiable sub-units- a holistic case design would logically only be used when it is impossible to identify sub units, and when the relevant theory underlying the case study itself is of a holistic nature. A single case may form the basis of research on typical, critical or deviant cases, while multiple cases may be used to achieve replication of a single type of incident in different settings, or to compare and contrast different cases. Multiple-subject case studies are used if topics are too complex or involve too many actors to be addressed by a simple interview survey. Single case studies are analogous to single experiments. The first rationale for a single case study is that it represents the critical case in testing a well formulated theory; the second is that a single case may represent an extreme or unique case worth documenting and analysing; the third rationale is the revelatory case: the revelatory case exists when a phenomenon not previously accessible to scientific investigation is revealed (Schell 1992).

A *case study* is an in-depth analysis of a single event, situation, or individual hence as Zikmund, 2003 suggests, it can be used to gain insights in exploratory research. Consequently, the researcher chose this case study to provide the foundation of analysis. This allows the reader to follow through the research problem intuitively than in instances where the reader will rely on only available literature.

4.4.1.2 Population, Sample size and Unit of Analysis for phase 1

Although the population size of project finance case studies on high capital outlay projects is vast, the researcher chose to focus on a sample of 1 case study being the Mozal Aluminium Project in which the IDC was one of the sponsors. The sample could arguably have been expanded to include other case studies and make the results broader. However, the researcher limited his sample to the Mozal Project for the following reasons;

- Mozal Project further information is easily available as the researcher can gain access to all the returns that accrued to IDC as a sponsor for the project unlike in other projects where such information remains confidential and is not easily available in the public domain;
- This case study has been extensively used in other renowned academic institutions such as the Harvard Business School and Kellogg School of management and as such it is a well-researched case study.
- The Mozal Project was conducted in an emerging economy and is therefore more relevant to the aim of the research to promote availability of development funding to poor countries by highlighting the magnitude of the benefits that can be reaped in a live situation.

There is obviously a limitation in using a single case study in that the results may be specific to that case alone. However, the researcher has tried to mitigate this limitation by further researching on the average returns received on other high capital outlay projects to gauge whether they compare with the results from the Mozal Project.

4.4.1.3 Data collection, data analysis and data management for phase 1

Access was gained to the case study information through the IDC Records Department, a Department within the IDC which captures all information pertaining to the projects within the IDC. In addition, complimentary information was also accessed through Professor Esty's book, *Morden Project Finance: a Case Book (2007a)*. The book is a collection of different case studies in PF. Discussions were also conducted with individuals within the IDC who worked on the deal. Further information was also accessed through the IDC Records Department on the returns achieved on some of the projects funded by the IDC. Other case information was also accessed through the casebook and the internet. The information accessed was then analysed and sifted to get the required information pertinent to the study. Such analysis included reading the submission reports and annual reports on the project as well as board information packs presented to the IDC. The researcher also referred to other academic publications on the Mozal project to gather deep knowledge about the project. From the data gathered from the case study, the research attempts to quantify shareholder value realised from the project and marry it to the theories that emerged from the literature review. Such analysis was captured in excel spread to provide a better picture of the results and attached as Annexures to the research.

4.4.2 Methodology for phase 2

4.4.2.1 Rationale for the Method for Phase 2: Secondary Research

Phase 1 drew its conclusions from a purely PF case study, the research then includes phase 2 to compliment the results obtained from phase 1. Triangulation is an attempt to map out, or explain more fully, the richness or complexity of human behaviour by studying it from more than one standpoint (Cohen and Manion). Triangulation also known as mixed methods research, is the act of combing several research methods to study one thing (Kennedy, 2009). Consequently, in phase 2, the research gathers opinion from professionals with experience in both PF and CF through some questionnaires which were further complimented with interviews to further gauge their opinion on the subject. This compliments the results of the case study and assists in providing conclusive answers to the research question.

4.4.2.2 Population, Sample size and Unit of Analysis for phase 2

The secondary population for this phase was the global population of all Project and Corporate Finance professionals. A snowball approach in which interview respondents were first established and later requested to recommend further interviewees was used. The questionnaire respondents were drawn from a number of institutions dealing in project finance. Both the questionnaires and interviews were conducted within a period of two months, during which, five interviews were conducted and twenty five questionnaire responses received. The participants to the questionnaire were identified by the researcher due to their accessibility and characteristics to meet the sought qualities. Albeit the respondents and the participants might arguably not be a representative sample of the population, the sample size is appropriate for the exploratory qualitative research.

Both the respondents and the interviewees had to be accessible at their own convenient times and the interviews were conducted on a face to face basis.

The respondents were drawn from professionals working in different aspects of project finance being the following;

TABLE 1: QUESTIONNAIRE RESPONDENTS

Group	Level of execution	No of participants
Financiers	Professionals who work in organisations that provide finance for projects. This group comprised respondents from IDC, DBSA and NEF	12
Project Implementers	Individuals who work for organisations that bid to execute high capital outlay projects and are involved in raising funding for such projects	5
Transaction Advisors	Professionals who provide financial advisory services to sponsors and companies intending to participate in new projects	5

Consultancy	This group included attorneys experienced in participating in such projects and other professional service providers.	3
Total		25

The primary unit of analysis was the professional's finance knowledge as well as the level of experience in project and corporate finance whilst the secondary analysis was the nature of the work that the organisation that he or she worked for was involved.

4.4.2.3 Data collection, data analysis and data management for phase 2

To avoid influence on respondents, the questionnaires were electronically distributed. As for interviews both open ended and closed ended semi-structured questions were utilised with the interviews being an iterative process in order to gain as much understanding as possible to the subject matter. The interviews although guided by the interview schedule attached as annexure, presented an opportunity for the research to be more dynamic in his research in order to incorporate and get answers for some of the response provided by earlier respondents.

Both the questionnaire and the interviews were pretested on an individual with limited experience in the subject area and that pilot exercise was successfully conducted as there was no confusion in interpreting the meaning and context of the questions.

4.4.2.4 Developing the instrument

The questionnaire was designed to first gauge the knowledge and experience of the respondents in the area of study so as to determine whether the opinion is gathered from people with relevant knowledge and experience in the research area. The knowledge and experience of the subject area determines the value of one's contribution to the research questions. The questionnaire then focussed on issues of funding huge capital outlay projects. To reduce bias, the questionnaire was designed in such a way that the two funding modes compared would be afforded equal and fair chances of consideration by the respondent and were appropriate a third choice was also available to the respondent. That third choice involved choosing an answer that does not support any of the two available choices.

Whereas the questionnaire provided the skeletal framework of the answers to the study, the interview was designed in a way that would complete all the gaps that could not be filled by the questionnaire and thus provided completeness to the study.

4.5 Research Reliability and Validity

Using the data obtained from the respondents, the researcher then analysed it and linked the responses to the research problems and sub problems in order to determine the most prevailing view from the population sample.

4.6 Limitations

In conducting the research, the researcher identified the following limitations;

- The respondents chosen were only from local companies. Although some of the respondents' knowledge expand to international experience, the influence of local experience cannot be ruled out in their response,
- Results interpretation and analysis is judgemental hence it may be subjective as there was no quantitative assessment conducted due to the nature of the data available,
- The case study used involves a single project which means the findings might only be peculiar to that assessed project alone.

4.7 Chapter Summary

Basically the research methodology was designed in a way that attempts to investigate the ideas gathered from the available literature on the research area as covered in the earlier chapter. The methodology also removes bias by drawing opinion from professionals who have had experience in working under both on balance sheet and off balance sheet financing. Despite some identified limitations in the research methodology, the chosen methodology links well with the views emanating from the assessed literature. The methodology therefore emerges as an essential compliment to the available literature in reducing the gap that exists on the areas of concern. Although more work on the research subject will be complimentary, the research methodology provides a stable platform to answer the identified research problems.

5 RESEARCH FINDINGS 1, CASE STUDY ANALYSIS

5.1 Introduction to the Mozal Project

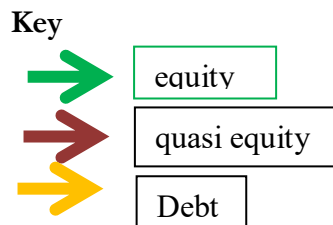
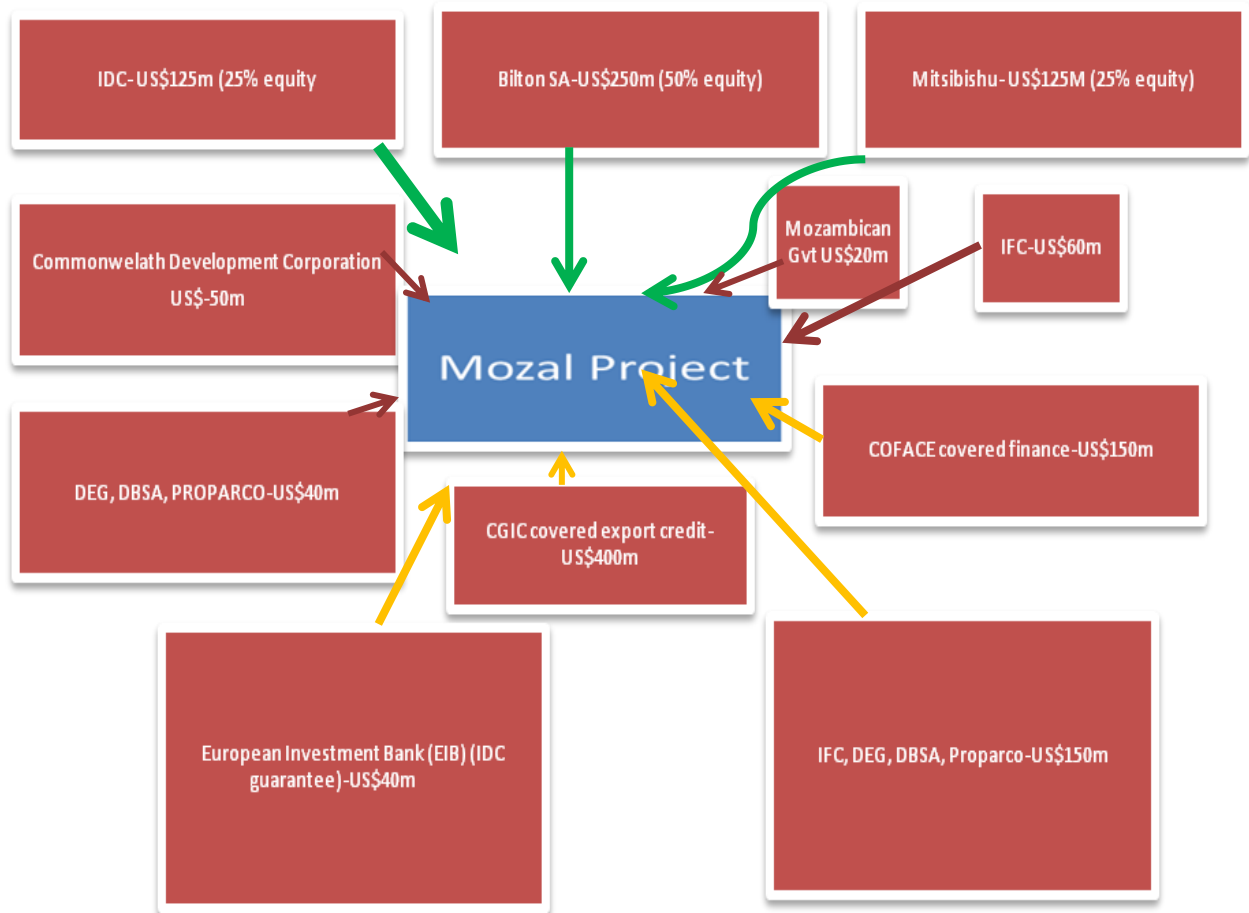
The methodology above recommended a two stage analysis of the research with the first stage analysing the case study of the Mozal Project and the returns so far created for the Industrial Development Corporation of South Africa (“IDC”) in the project. The second stage will comprise of the analysis of the results of the questionnaire and case studies responded by the various professionals. This chapter gives a background of the Mozal project, its financing structure as well as assesses how the IDC as a sponsor managed to deal with the three influences of shareholders value in PF that were described in the literature review. These three interrelated sources of shareholders’ value are the agency costs, the underinvestment concept and risk management.

5.2 The Mozal Project

The project is a joint venture between Alusaf Pty Limited (“Alusaf”, Alusuf is the aluminium subsidiary of the Gencor Group, a South African natural resource company), IDC and Mitsubishi Corporation (“Mitsubishi”) and the Mozambican Government. The detailed ownership structure is described later in the chapter. The project began as a confluence of interest between three parties, Eskom, the Mozambican Government and Alusaf. Whilst Eskom sought to expand its electricity generation into Mozambique, Alusaf saw the project as an opportunity to expand its aluminium metal smelting as it sought to utilise the availability of electricity due to Eskom’s new expansion. The parties met the Mozambican Government to canvass support for the project. From these discussions, they developed the Mozal project which provided Mozambique with new electrical and industrial infrastructure, Eskom with an entrée into Mozambique and a customer for its excess power, and Alusaf with a new smelter and access to competitively priced power. Annual capacity was initially estimated at 250,000 tons but was later increased beyond this capacity. Mozal has an overall capital cost of \$4,750 per ton compared to an average capital cost of \$4,850 per ton for other comparable smelters (Esty 2007)

5.3 Mozal Project structure

The US\$1,41m total project cost was funded and structured as follows resulting in the following equity structure;



5.4 IDC Participation in the Mozal Project

The IDC Board at its February 1997 meeting, approved equity participation - US\$125 million covered by a CGIC political insurance policy, CGIC Export finance commercial guarantee - US\$93,2 million; totalling an exposure of US\$218,2 million (commercial risk only) towards the Mozal Project. The Project involved the installation of a single pot line to produce 253 000 tpa of aluminium ingots for the export market in Maputo, Mozambique which was later expanded by another 250,000 tpa. A 25 year supply agreement was agreed with Billiton B.V. Electric power for the supply of electricity which after alumina is the second major cost in the production of aluminium. A technology transfer and assistance (TTA) agreement with Aluminium Pechiney was signed on 26 November 1997.

The total capital cost of the Mozal smelter was US\$1 148,7 million (1998) including a contingency figure of 7,5 % and the peak funding requirement was US\$1 304 million. The debt to equity ratio was 50:50 after including quasi-equity. Equity was secured from the above mentioned sources (Source: IDC records department, Vol 10)

5.5 Managing the sources of shareholders' value from sponsor's perspective

As was highlighted in the literature review, three key aspects emerged as the source of shareholders' value when funding huge capital outlay projects regardless of the funding modes. These three aspects , include managing agency cost, risk management and the aspect of debt overhang and underinvestment. This section therefore explores how the IDC as a sponsor in the Mozal Project and its partners managed to address these aspects and how such management spawned benefits which ultimately create value for its shareholders.

5.5.1 Managing Agency Costs in the Mozal Project

As alluded to in the literature review, one of the sources of agency costs that derails shareholders' value arises from the distribution of project cash flow. Under a CF arrangement, a decision is normally made to apportion free cash flow between distribution to investors and reinvestment. In PF however, investors have total control over free cash flow which will normally be distributed amongst the investors. Jensen (1986) postulated the concept of agency cost of free cash flow which explains the conflict of interest between shareholders and managers in

reinvestment vis a vis dividend distribution in a CF set up. PF eliminates this agency cost by ensuring that a contract for the distribution of cash flow is initiated from the onset whilst the distribution of such is subject to managers' discretion under a CF structure. Such discretion might be solely for the benefits of the managers at the detriment of the shareholders which ultimately reduces shareholders' value. In order to address this agency cost, the IDC as a 24% participant in the Mozal project concluded an off-take agreement with Mozal for the metal to which the IDC is entitled in terms of the Mozal Shareholders' Agreement for the purchase and sell of its portion of the aluminium produced. This was concluded three months before the project started. Under the off-take negotiated with Billiton Metal Trading B.V.(BMT), the IDC purchases a percentage share of the effective annual production of the Mozal smelter which corresponds to the percentage shareholding that IDC owns in Mozal, viz 24%. In terms of the agreement, IDC purchases the aluminium at a price of 99% of whichever is the lower of the London Metal Exchange (LME) cash price as reported by Metal Bulletin Monthly (MBM) or the LME three month price and takes delivery of the metal Free In Stockyard (FIS) in the Export Stockyard. The aluminium will be of 99.7% purity, grade P1020A and will carry the "Mozal" brand, thus being LME deliverable, or as otherwise mutually agreed. IDC is required to purchase aluminium from production of first metal after start-up and the agreement will remain effective until 31 December 2025. IDC has an exclusive "loose agreement" with Billiton for a further 1% right to the metal. This resulted from the 1% dilution from the IDC in favour of the Mozambican Government. BMT is given rights to purchase metal for an initial period expiring on 31 December 2001 where after it has first right of refusal to offer to take all or part of the IDC's entitlement of metal on the same terms that the IDC would be willing to accept from a third party. This right of first refusal also applies upon the termination of any agreement that the IDC concludes with a third party in the event of BMT not matching the third party's offer. The price of standard aluminium defined in the contract is calculated as shown below;

$$\text{Price (in \$/t)} = P \times \text{LME}$$

Where P is the applicable percentage calculated as shown below

LME is the lower of

- (a) The LME cash price
- (b) The LME three month price plus \$ 40 /t

$$P (\%) = 96.3 + (0,045 \times \text{Premium})$$

Where Premium is the higher of the Japanese or European premium for standard aluminium as defined by the CRU International Aluminium Metal Monitor. In all cases, P is subject to a

minimum level of 99% (IDC Exco Committee Paper, 2000). These off-take agreements between Mozal and IDC and between IDC and BMT are “back to back”, which ensures that the IDC is not exposed to any risk regarding delivery terms for the metal. The terms of the agreement were further reviewed by Resource Strategies, a US - based international commodity consultancy, and found to be fair to both parties. The arrangement ensured that the price to be paid to the IDC by BMT will, in all cases, be at least equal to the price to be paid to Mozal for the metal. This ensures that the IDC is not exposed to any price risk for the aluminium and will, under normal circumstances, earn a premium for the metal. The IDC retained the right to seek better terms for its metal, effective at the beginning of 2002 and to conclude an off-take agreement under such terms with a third party, should BMT be unwilling to match those terms. After the termination of the agreement with a third party, BMT has the right to the metal again under the current agreement. As from 2002, IDC had the right to establish a metal trading operation, if so desired, in association with third parties.

The NPV for the “1% aluminium” based on the proposed agreement would be \$290 160 calculated over a twenty five-year period (2000 basis). The value of the additional metal could be further enhanced if incorporated into the Mozal expansion (Mozal II) through the right to obtain, at least, an additional 1 % shareholding in the project. The off-take agreement with BMT is fair and provides a channel for the IDC to dispose of its share of Mozal metal at a reasonable price. This arrangement safeguards the IDC from agency costs related to the non-distribution of cash flow as is common when that discretion lies entirely with management.

The shareholders agreement dictates that independent external auditors verify the distributable profit for dividend purposes. Clause 5.3 of the shareholders agreement states that “the dividend policy of the company shall be to maximise the dividends out of the company’s profits...” clause 5.4 of the same shareholders agreement further states that “ unless a resolution is passed by shareholders holding at least 25% of the ordinary shares, the company shall distribute to shareholders any profit available for distribution” (Source: Mozal Shareholders agreement).

These above clauses guarantee that the sponsors in the project receive maximum cash flow for their investments. It further ensures sponsors’ control on cash flow distribution..

The sponsors set up Aluminium Management Company of Mozambique (Proprietary Limited) (“Mozmanco”) to manage the operations and affairs of Mozal. The shareholding in Mozmanco

replicated the shareholding in Mozal. This ensures that the shareholders in Mozal still exerted control over the affairs of the company. Furthermore, the structure insulates shareholders against costly agency costs arising from Mozmanco maximising its own interests at the expense of the shareholders interest.

Clause 2.4 of the management agreement states that “the functions of the board of directors of the Manager(“Mozmanco”), shall be carried out by an executive committee comprising of representatives of the shareholders and the owners of the project..” (source: Mozal Management Agreement). Such a clause ensures that the objectives of management company align with those of the sponsors in running the operations. This is in contrast to a CF structure in which management is totally independent from the shareholders which promotes agency related inefficiencies. The Management contract under clause 5 of the agreement further lists some restrictions that preclude Mozmanco from taking any decisions that may be detrimental to the company. Such restrictions include borrowing restrictions which precludes against unsanctioned borrowings which jeopardises shareholders value.

5.5.2 Risk Management in the Mozal Project

From the earlier analysed literature, Esty et. al. critically suggested that one of the key ingredients in enhancing shareholders value in PF lies in the ability to manage risk effectively which is a key feature in project finance when compared to CF. This risk management is encompassed in the contractual agreements that the parties to the deal develop as well as other risk management techniques. It is therefore key to assess how the IDC managed to put in place measures to manage the inherent risk in the Mozal project.

5.5.2.1 Political risk, currency risk and funding risk

Mozambique has a history of civil war even though this has stabilised. The political risk on IDC's equity investment was 90% covered by a CGIC political insurance policy at a cost of 1% p.a., for a minimum of 5 years and a maximum of 15 years. In a bid to smother the currency risk, IDC's equity contribution was drawn over 40 months payable in Rand converted from US dollar at spot. IDC was therefore exposed to the risk of a weakening Rand. By ensuring that US\$62,5

million was drawn over 8 months, the IDC ensured that the longer term exchange rate risk was only limited to 50% of IDC's equity.

In order to ensure lenders participation in the project, the IDC had to offer certain clauses to hedge against political risk. For instance, the IDC offered joint and several completion guarantees (political and commercial) to the lenders to achieve name plate capacity (plant capacity of 250 000tpa). The Sponsors (the IDC and the other shareholders), insisted that liabilities be on a several basis during construction. The IDC and Billiton negotiated that they do not assume political risk during construction. They further proposed that if a minimum of 80% of name plate capacity, but less than 90% of name plate capacity is achieved due to a non-political event, the sponsors had either the option to partially repay lenders to place them in a position similar to the original debt structure (i.e. debt cover ratios to be equal to budgeted ratios) or prepay the loans or assume liability for the outstanding balances.

In addition in case of an overrun on capital, sponsors committed to fund (e.g. a 15% overrun on budgeted capital expenditure amounts to a ±US\$43 million exposure to IDC) the overrun in full, in order to achieve technical completion (proposed to be 90% of name plate capacity).

The above described arrangements insulated against the risk of project failure by ensuring that the required funding is in place to fund the project and that extra funding is available to circumvent contingency requirements.

In addition to its equity contribution, the IDC issued a commercial guarantee of US\$40 million to the European Investment Bank ("EIB") for a fee of 1,25% p.a. The political risk of the EIB facility is guaranteed by MIGA (90%) (World Bank subsidiary) at 1,3% p.a. (payable by Mozal). According to the legal agreements, IDC as guarantor, only assumed commercial risk on this facility after technical completion was achieved by the sponsors.

The IDC Board of February 1997 approved IDC participation in the CGIC covered export finance scheme assuming commercial risk of up to US\$100 million, at a margin of 0,25% p.a. The South African Credit Authorities subsequently approved the Mozal export finance facility on a fully covered basis (no commercial or political risk to lenders).

5.5.2.2 CGIC fully covered export finance

In order to make the US\$400 million CGIC covered facility attractive to other banks, IDC assumed the responsibility of administering the US\$400 million facility and receives US\$1 million out of the structure for assuming this responsibility. This responsibility of administering the US\$400 million facility, could be interpreted as a contingent liability, e.g. if IDC due to negligence, causes the non-payment of an insurance claim, participants of the export scheme could claim their respective loss from the IDC. Such a risk was however remote, as the IDC has been administering its own export facilities for over 30 years and has never encountered a non-payment in respect of an insurance claim. The decision to administrate the facility is in itself a risk management initiative by the IDC as it controls all the risks with that facility as opposed to such facility being managed by an independent party with no material interest in the project.

The natural hedging in the project to cover the project costs was achieved by linking the alumina, electricity prices and turnover tax to the LME price, resulting in an extremely robust project with production costs in the lowest ten percentile of the world's smelters. At the predicted long term average aluminium price of US\$1 650 per ton, the project's real after tax IRR was 11,94% p.a. with a real after tax shareholder's return of 14,08% p.a (Source IDC records, submission document Vol 12).

5.5.3 Managing the underinvestment problem in the Mozal Project

The underinvestment problem arises when a firm has a highly leveraged capital structure. A firm with risky debt outstanding may have an incentive to forgo a capital investment project that would increase its total market value. If the business risk does not change, the firm's shareholders would have to share any increase in total market value with the firm's debt holders. The underinvestment problem involves a bias against low risk projects (Finnerty 2007). The debt to equity ratio of the Mozal project is 50% which qualifies it as a highly leveraged entity. Using the underinvestment concept, it is reasonable to suggest that any further expansion of the project (as was conducted under phase two which doubled the capacity from 250,000 tpa to 500,000) would have been forgone on the basis that it increases the risk of Mozal due to additional debt financing which would ultimately increase the returns of the debt holders. In essence such decision might have been foregone or protracted in a normal on balance sheet financing structure. However the decision to take up the expansion choice has doubled IDC's returns. By structuring the Mozal

project through off balance sheet financing, the IDC ensured that the under investment concept is countered.

5.6 IDC Returns in the Mozal Project

Mozal has been a model investment both from a developmental impact and financial success perspective. On IDC's initial investment of USD178,075,546 (ZAR1,263,335,770) IDC has received dividends amounting to USD 355,681,528 (ZAR 2,800,570,313).

The following table reflects the dividends received historically by IDC from its investment in Mozal:

Table 2: Annual dividends received

	USD	ZAR
Dec-02	2,299,501	20,588,808
Oct-03	5,082,778	35,376,132
Apr-04	19,228,000	129,654,404
Oct-04	16,824,500	102,503,266
Apr-05	26,438,500	162,531,000
Oct-05	36,052,500	236,864,925
Apr-06	34,850,750	210,498,530
Oct-06	56,482,250	433,783,680
Apr-07	51,517,750	404,399,000
Oct-07	34,800,000	369,163,000
Apr-08	33,649,000	262,462,200
Oct-08	38,456,000	432,745,368
Total	355,681,528	2,800,570,313

Source: IDC Board paper 2009

Table 3: Net Asset Value comparison

Net Asset Value 1997	US\$m
Total Assets	1 410
CGIC covered export credit	400
COFACE covered finance	150
European Investment Bank (EIB) (IDC guarantee)	40
IFC, DEG, DBSA, Proparco	150
current liabilities	-
Total Senior loans (oversubscribed by US\$106 million)	740
Net Asset Value on project initiation	1.1.1. 670
IDC portion @ 25%	167.50
Net Asset Value 2011	US\$m
Total Assets	1 897
CGIC covered export credit	-
COFACE covered finance	-
European Investment Bank (EIB) (IDC guarantee)	-
IFC, DEG, DBSA, Proparco	1.1.2. 48
current liabilities	264
Total Senior loans and current liabilities	312
Net Asset Value to date	1 585
IDC portion @ 25%	396.25

From an NAV perspective, the IDC's 25% value in the Mozal Project has increased from US\$168m on project initiation to US\$396m in 2011. This represents a 136% increase in Net Asset Value over a fifteen year period. An assessment of five other projects funded on balance sheet by the IDC over a similar period reflected an average growth in NAV of 35%. Although the reasons for the huge disparity gap may vary widely, it is clear that the IDC has managed to preserve and enhance more value in the off balance sheet funded Mozal Project when compared to its other five projects funded on balance sheet.

5.7 Shareholder Value Analysis in the Mozal Project

5.7.1 IDC Investment analysis- payback period

The financial dictionary describes payback period as “the time required the principal amount of an investment” (The Free Dictionary.com, 7 December 2012). The payback period for the IDC on its initial investment is 7,3 years (see Annexure A for the calculation). IDC on balance sheet funding normally involves loans whose repayment tenure ranges from on average 3 to 7 years. Due to the developmental objectives of the IDC most of these projects are greenfield investments like the Mozal Project, hence they are likely to face initial problems related to start-ups when commencing. It is common for the IDC to accommodate these challenges through extending additional capital moratoria and tenure extension. If one considers the additional repayment moratorium and extension on similar projects funded on-balance sheet, such on-balance sheet IDC loans normally exceed 7,3 years. Therefore compared to its on balance sheet investments, the Mozal project’s payback period is satisfactory in terms of IDC shareholder value.

5.7.2 IDC investment analysis- Net Present Value (NPV) basis

Net Present Value is the difference between present value of the future cash flows from an investment and the amount of investment. Present value of the expected cash flows is computed by discounting them at the required rate of return

(<http://www.businessdictionary.com/definition>, 7 December 2012). The NPV of the Mozal project from an IDC perspective (see Annexure B for the calculation) is US\$4,8m. The positive NPV of the project within a reasonably shorter payback period implies that the Mozal project was a worthwhile investment for the IDC from a shareholders’ value perspective. Compared to IDC on-balance sheet projects, the IDC normally converts its debt to equity in order to assist with solvency restoration. In writing off a portion of its investment, the IDC ‘s objective is to protect the developmental objectives such as jobs and saving the businesses from collapse. In instances where the IDC takes writes off a portion of its investments, the NPV is negative. Hence the Mozal project provided an opportunity for the IDC to gain significant value for its shareholders from an NPV basis.

5.7.3 IDC investment analysis- Internal Rate of Return (“IRR”)

The IRR is the discount rate that makes the NPV of a particular projects cash flow equal to zero (<http://www.investopedia.com/terms/i/irr.asp>, 7 December 2012).The Mozal Project has given the IDC a nominal after tax IRR of 10,14% whilst the Real After Tax IRR of 9,31% was record over the investment horizon so far. Standard Real After Tax IRR on on-balance sheet investments within the IDC is 8% but the average recorded under a similar period is 3%. IDC is expected to continue to receive dividends from the project up until 2025. At the current average dividend rate, the IDC Real After Tax IRR can easily surpass a 30% mark (see annexure C for the projected future IRR) which by any standards is a good return on the investment.

5.8 Chapter summary

The Mozal Project which is a joint venture IDC off balance sheet funded project has so far proved to be a worthwhile investment for the IDC if assessed in shareholder value enhancement terms. Shareholder value can be measured using the above capital budgeting tools and from the above assessment shareholder value has been preserved. The IDC and the other sponsors have managed to preserve value by coming up with contracts that limit value distraction through managing “deadweight costs”. This reduction in deadweight costs and the contracts designed to ensure maximum dividend distribution have helped the IDC to reap its rewards earlier. All the capital budgeting tools results compare well to similar results on the IDC on balance sheet investments. It is very difficult to manage deadweight costs and other inefficiencies in these on balance sheet financed resources because of a number of reasons. Chief amongst the reasons is that the IDC will only limit its monitoring and influence in such projects through a single board representation as it cannot demand to have similar management agreement as is the case in the Mozal project. This leaves the IDC susceptible to various agents costs which become difficult to manage thereby ultimately affecting its shareholder value. Although a conclusion cannot be based on a single case study analysis, the results of the Mozal Project give a clear indication that it is easier to establish structures to preserve and enhance shareholder value in an off balance sheet project than on balance sheet project. The results that the IDC has reaped so far point at greater benefits for shareholder value when a huge capital outlay project is funded off balance sheet.

6 RESEARCH FINDINGS, ANALYSIS AND DISCUSSION

6.1 Introduction to Questionnaire and interview results

The literature review focussed on analysing the research question from a theoretical point of view and seemed to suggest that there is more shareholder value in PF compared to CF as a result of a number of factors such as the various components of the “deadweight” function and other factors mainly related to agency costs, risk management and underinvestment inefficiencies. Chapter five analysed a live case study which was funded off balance sheet by the IDC and assessed whether shareholder value was realised by the IDC and compared the value realised in terms of returns on the project against its on balance sheet returns. It then synthesised how the IDC managed to extract value by implementing measures which reduced the agency costs and how it dealt with the underinvestment issues and risk management.

Overall, it appeared that benefits from Mozal project support the idea that there is more value for shareholders in PF than CF. This chapter goes a step further to test the research question using questionnaires and interviews. As highlighted in the methodology, 25 respondents answered the questionnaire whilst 5 interviews were carried out to gauge the view of various professionals who have been involved in both off balance sheet and on balance sheet transactions. This chapter sets out the results of survey and draws a conclusion from the survey. The questionnaire comprised of 20 questions.

In assessing the results, it is paramount to highlight the following;

- The responds were based on individual’s opinion which is not necessarily factual hence the validity of the information emanates from the respondent’s perception;
- The interviews were designed and conducted in a manner that attempted to address the issues that could not be extracted sufficiently from the questionnaire;

6.2 Respondent background and definition of the research issues

The questionnaire commenced with questions establishing the background, knowledge and experience of the respondent in the particular areas of research. Out of the twenty five respondents all the respondents highlighted that they have had experience in both on and off balance sheet finance. Nineteen of the respondents indicated that they have post graduate degrees in either finance, engineering or management related courses.

Definition of the research issue was conducted through contrasting the features of both PF and CF with the questionnaire respondents distinguishing the two mainly in terms of the features highlighted below;

Table 4: Distinguishing between PF and CF

CF	PF	Frequency of respondents in agreement with the distinguishing feature
Full recourse	Non-recourse	5
Full recourse	Limited recourse	20
Debt serviced from general cash flows other than project	Debt serviced from project cash flows	25
Nature of contracts simple	Complex contract structure	20
Suitable for low capital outlay projects	Suitable for high capital outlay projects	18
Distribution of project cash flows to investors less predictable	Distribution of project cash flows to investors more predictable	17
1.1.3.	1.1.4.	1.1.5.

Almost all the respondents highlighted the above as the main features distinguishing the two modes of funding. From the response above the generalisation is that when comparing the two modes, PF seems to be more of a limited recourse funding mode with complex contract structures and is more suited to funding high capital outlay projects when compared to CF. It seems most of the respondents have more confidence in cash flow being distributed under PF than CF according to the response.

6.3 Risk perception between the two funding modes

Which one between Off balance sheet finance and On Balance sheet finance would you consider to be more risky to your corporation when funding huge capital outlay projects?

Table 5: Risk Comparison between off and on balance sheet finance

Off balance sheet	On balance sheet	Equal
6	13	6

Out of the five interviewees, three were of the opinion that funding huge capital outlay projects on balance sheet leaves the sponsoring company susceptible to risk due to the following elements;

- Full recourse to the assets of the company means if the project fails then lenders can also attach assets that were not part of the project which leaves the company on the verge of liquidation;
- In on balance sheet financing, performance contracts are not as water tight as in off balance sheet hence this leaves the company liable to risk.

However, two of the interviewees felt that the magnitude of the risk depends on how well the deal is structured and therefore there are equal chances of risk under both funding modes for high capital outlay projects.

6.4 Magnitude and certainty of Returns between off balance sheet and on balance sheet

6.4.1 Which one between the two funding modes maximises cash flow returns?

The questionnaire responses to the question were as highlighted below;

Table 6: Maximisation of cash flow returns

Off balance sheet	On balance sheet	Equal
13	7	5

In the interview responses, all the interviewees were of the opinion that off balance sheet financing has the potential to maximise returns for the company although they were cautious that returns will depend upon the nature of the project. When asked further on whether the results are likely to be different when the same project was funded under the two different scenarios, they conceded that PF provides better project micro management and the idea of complex contracts ties down project participants to perform. One of the interviewees brought the issue of agency costs into perspective and further suggested that the disparity between shareholders and

managers' interest is likely to be minimised under PF which ultimately increases the returns accruing to the shareholders.

6.4.2 Under which funding modes are cash flows likely to be distributed in large quantities?

One aspect that Esty highlighted as an angel in PF is the high probability of project cash flows being distributed to the sponsors as compared to a CF set up where managers favour cash flow retention than distribution. The questionnaire responses are summarised in the table below;

Table 7: Distribution of cash flows

Off balance sheet	On balance sheet	Equal
19	6	0

The five interviews were of the opinion that they are more confident of receiving a cash flow dividend under PF than CF. They cited that in a CF structure, because managers do not necessarily benefit from cash flow distribution they would rather focus more on retaining the cash flows for future opportunities which reflect on their positive performance rather than have such cash flows distributed to the sponsors or shareholders. Three of the interviewees further concurred with the interviewer that the finite nature of the PF funding structure as opposed to the going concern status that prevails in the CF structure, supports cash flow distribution as opposed to retention as the sponsors would like to maximise their recovery on their initial investment before the project life ends.

6.4.3 Under which funding mode are cash flows more likely to be retained to support other growth initiatives?

The questionnaire responses were as highlighted below;

Table 8: Cash flow retention

On balance sheet	Off balance sheet	Equal
23	0	2

All the interviewees agreed that on balance sheet funding structure is more likely to retain cash flows to support other future projects when compared to off balance sheet in which the funding raised is mainly to support the high capital outlay project on hand.

6.4.4 Does the ratio of cash flow retention translate to future growth or benefits to the corporation and ultimately to shareholders?

Table 9: Cash flow retention and growth

Answer	Frequency
Yes	8
No	17

Three of the interviewees felt that shareholder value growth is a function of many things and cannot be restricted to cash flow retention alone. They cited the following as equally important in driving shareholders growth;

- Prudent management;
- Availability of future good projects;
- Prevailing and future economic conditions

Consequently they indicated that they would rather receive their cash flow now rather than wait for future growth. As such they would support the off balance sheet structure as it maximises cash flow distribution to sponsors as opposed to the CF structure. However, two of the respondents indicated that cash flow retention is good for shareholders' value and that cash flow distribution destroys shareholders' value.

6.5 Risk and return optimisation

Under which funding mode do you think that relationship between risk and return is better optimised?

The questionnaire responses were as highlighted below;

Table 10: Risk and Return relationship

Off balance sheet	On balance sheet	uncertain
15	4	6

Three of the interview respondents were of the opinion that Off balance sheet financing provides a better return per risk when compared to on balance sheet financing whilst two were not certain which of the two maximises return per unit of risk. The two who were uncertain thought that the fact that when a project is funded on balance sheet, the cash flows will accrue to a single sponsor than the sharing arrangement under PF means on balance sheet guarantees more return.

However they also indicated that the risk is likely to be high as opposed to the risk sharing opportunity presented by on balance sheet therefore in their opinion it is difficult to make a conclusion. Those that were in favour of off balance sheet financing cited the following as the reason for their answer;

- PF reduces contracts due to the coherence of performance contracts;
- Reduction in agency costs increases returns whilst reducing risk;
- Greater expectation of cash flow distribution

6.6 Indication and Measurement of Shareholders’ value

What do you consider to be the greatest indicators of shareholders’ value in high capital outlay projects?

This question was designed to highlight different measures of shareholder value and their significance in measuring shareholder value. The summary of questionnaire responses to the question is highlighted in the table below;

Table 11: Indicators of shareholder value 1

NAV	DCF	PER	DDM	ALL	NONE
2	8	2	1	12	1.1.6.

The five people interviewed were of the opinion that shareholder value can be measured using any of the above parameters but felt that the discounted cash flow concept (DCF) offers a better indication of the shareholders’ value as compared to the other parameters. However three of the interviewees recommended that using the other parameters is essential in measuring shareholders’ value as they provide a guiding parameter even though ultimately the final decision can be made by comparing results of the DCF.

What is your perception of shareholders value preservation under on balance sheet financing in terms of the following parameters?

This question is a further culmination of the prior question and was designed to gauge a view on which of the shareholder value indicators is significantly preserved under the two different funding modes the results of which tabulated below;

Table 12: Indicators of shareholders value 2

	none	low	average	Above average	high
NAV	1.1.7.	7	3	1.1.8.	1.1.9.
DCF	1.1.10	4	6	1.1.11.	1.1.12
PER	1.1.13	2	1	1.1.14.	1.1.15
DDM	1.1.16	1.1.1	2	1.1.18.	1.1.19
1.1.20.	1.1.21	1.1.2	1.1.23.	1.1.24.	1.1.25

In the five interviews conducted, two of the respondents suggested that if a high capital outlay project is funded on-balance sheet, the shareholder value as measured by the discounted cash flow parameter is likely to be high. The high shareholder value exhibited in the discounted cash flow indicator is due to the fact that all the positive cash flows from the project will accrue to a single sponsor in PF. This is in contrast to under off balance sheet circumstances where the discounted cash flow will be distributed amongst a number of sponsors hence reducing the value accruing to a shareholder. The other three respondents, however, suggested that, cash flow is not more guaranteed when a huge capital outlay project is financed on balance sheet due to the various inefficiencies that may accrue when such project is funded on balance sheet which ultimately reduces shareholder value from a discounted cash flow basis. All the five interviewees were of the opinion that in on balance sheet terms shareholder value as measured through the Net Asset Value (NAV) is likely to suffer due to the fact that the company will be carrying the huge debt which erodes the value of the business in NAV terms.

What is your perception of shareholders value preservation under off balance sheet financing in terms of the following parameters?

The questionnaire results for this question are as indicated below;

Table 13: Shareholder preservation under off balance sheet finance

	none	low	average	Above average	high
NAV	1.1.26	1.1.2	2	7	1.1.28
DCF	1.1.29	1	3	3	6
PER	1.1.30	1.1.3	1	1	1.1.32
DDM	1.1.33	1.1.3	1.1.35.	4	7
1.1.36.	1.1.37	1.1.3	1.1.39.	1.1.40.	1.1.41

All the interviewees expressed the view that off balance sheet financing preserves shareholder value in terms of NAV as the debt is warehoused in a separate SPV which means that shareholders’ value on the sponsor’s balance sheet remains unaffected. Three of the interviewees indicated that they had more certainty of earning cash flow from a high outlay project funded off balance sheet hence the feeling was that in terms of the DCF, more value is likely to be yielded for shareholders as cash flow is more likely to be earned and distributed. They further suggested that since the project has a finite life cash flows are more likely to be distributed in off balance sheet funded projects. The interviewees felt that the same arguments used for DCF can actually apply for the other methods such as DDM and PER.

6.7 Shareholder value creation and risk

6.7.1 Is more shareholder value created through funding huge capital outlay projects through off balance sheet and non-recourse finance?

Table 14: Shareholder value creation and off balance sheet finance

Answer	Frequency
Yes	15
No	3
Difficult to ascertain	7

Out of the five interviewees, four suggested that more value is created by funding huge capital outlay projects. They cited the potential to limit project failure through intense micro management and the reduction of agency costs as the major tools driving project success which

they say is difficult to control under alternative methods. 1 of the interviewees was however of the opinion that a conclusive answer cannot be given.

6.7.2 Is limited-recourse finance less risky than normal recourse finance?

Table 15: Risk and limited recourse finance

Answer	Frequency
Yes	15
No	2
Difficult to ascertain	8

All the interviewees felt that limited recourse finance is less risky as it limits the recourse to the assets of the company to only those related to the project in the event of project failure. They also cited that the complex nature of the project finance contracts limits the risk of the project failure.

6.7.3 Is more shareholder value created through funding huge capital outlay projects through on balance sheet?

Table 16: shareholder value creation and on balance sheet finance

Answer	Frequency
Yes	7
No	14
Difficult to ascertain	4

Four of the interviewees were of the opinion that funding huge capital outlay project on balance sheet does not always result in shareholder value creation. This they attributed to the fact that management may be limited in providing the attention that the project requires to succeed as they have many other projects to deal with. Consequently, the project will not achieve its potential which ultimately erodes shareholder value. However one of the interviewees felt that this is difficult to ascertain as shareholder value impact will vary per project.

6.7.4 Is normal unlimited-recourse finance more risky than limited recourse finance?

Table 17: Risk and unlimited recourse finance

Answer	Frequency
Yes	15
No	8
Difficult to ascertain	2

All the interviewees suggested that normal recourse finance is more risky as it mortgages the balance sheet of all the company's assets beyond the project assets.

6.7.5 Would you risk your balance sheet by funding a huge capital outlay project on balance sheet?

Table 18: Risk and choice of funding huge project

Answer	Frequency
Yes	5
No	17
Difficult to ascertain	3

The five interviewees indicated that they would rather prefer to fund a huge capital outlay project off balance sheet in order to limit the risk to that project alone and insulate other company assets from the risk of failure.

6.8 Results Analysis

An analysis of the results was conducted under the following sections;

- Definition of the research issues and distinguishing between the two funding modes;
- Risk perception between the two funding modes;
- Magnitude and certainty of Returns between off balance sheet and on balance sheet
- Risk and return optimisation;
- Indication and Measurement of Shareholders' value;
- Shareholder value creation and risk.

6.8.1 Definition of the research issues and distinguishing between the two funding modes

The results from the respondents managed to distinguish between off balance sheet (PF) and on balance sheet finance (CF). In distinguishing the two funding modalities it was clear from the frequency of the respondents that a CF funding structure would exhibit the following characteristics;

- Full recourse extending beyond project assets;
- Project debt repayment is not restricted to project related cash flows alone;
- Contracts covering the project are non-complex as the terms are normally summed up in not more than three legal agreements;
- Most suitable for low capital outlay projects and that
- Project cash flow distribution cannot be highly anticipated as these are usually retained to finance future company growth.

In contrast, the main features of PF were opposite to the above. However what came out clearly was that most of the respondents would rather say that PF is limited recourse finance contrary to it being entirely non-recourse. From this assessment, a clear definition of PF would be, the raising of funds on a limited recourse basis to finance an economically independent investment project in which the providers of the funds look primarily to the cash flow from the project as the source of funds to service their loans and provide the return of and a return on their equity invested in the project (Finnerty, 2007).

6.8.2 Risk perception between the two funding modes

6.8.2.1.1 Which one between Off balance sheet finance and On Balance sheet finance would you consider to be more risky to your corporation when funding huge capital outlay projects?

Out of the questionnaire respondents, 52% indicated that on balance sheet funding is likely to be more risky in funding a huge capital outlay project whilst of the balance of 48%, 24% of the

respondents thought that off balance sheet finance is risky whilst the balance suggested that the risky is equal under both funding modes. 60% of those interviewed perceived off balance sheet financing to be of low risk when compared to on balance sheet finance whilst the remaining 40% highlighted the risk differs per project. It therefore emerges from both the questionnaire and interview results that the majority of the respondents perceive the risk of funding high capital outlay project off balance sheet to be lower than on balance sheet.

6.8.3 Magnitude and certainty of Returns between off balance sheet and on balance sheet

6.8.3.1 Which one between the two funding modes maximises cash flow returns?

Of the questionnaire respondents, 52% were of the view that they were likely to maximise cash flow returns under off balance sheet as opposed to on balance sheet. However 25% of the respondents supported the contrary whilst the balance was of the view that cash flow returns between the two funding modes are likely to be equal. Of the five interviewees, all of them were in support of off balance sheet finance maximising cash flow returns which they attributed to reduction in inefficiencies associated with agency costs. In light of these responses, the majority view supports off balance sheet financing as a source of maximising cash flow returns.

6.8.3.2 Under which funding mode are cash flows likely to be distributed in large quantities?

The majority of the questionnaire respondents were in support of off balance sheet finance providing a better chance of cash flow distribution with 76% of the respondents being confident that they would expect cash flows earned under off balance sheet finance to be distributed to the sponsors whilst the balance were in support of on balance sheet finance. 100% of those interviewed were confident that cash flows earned are most likely to be distributed to sponsors under off balance sheet than on balance sheet where they are most likely to be retained to support growth at managers' discretion. From this assessment, it is tempting to suggest that the

majority view is that cash flow distribution to shareholders is more likely under a PF structure than CF.

6.8.3.3 Under which funding mode are cash flows more likely to be retained to support other growth initiatives?

Out of the 25 questionnaire respondents, 23 representing 92% of the respondents indicated that on cash flows earned under on balance sheet finance are likely to be returned in support of future growth opportunities that management perceived whilst none of the respondents indicated that such a retention exists under off balance sheet finance. However 8% were of the view that cash flows were likely to be retained under both circumstances. All the interviews agreed that on balance sheet financing structure is likely to support retention of cash flows as opposed to distribution. Consequently, it can be concluded that on balance sheet financing is in favour of retention of cash flows as opposed to the distribution mechanism under off balance sheet. Whether this enhances shareholder value through future growth supported by retention is debatable as this depends on the nature of projects supported by the retained cash flows.

6.8.3.4 Does the ratio of cash flow retention translate to future growth or benefits to the corporation and ultimately to shareholders?

Out of the questionnaire respondents, 68% felt that the ratio of cash flow retention does not normally translate to future growth nor benefit to the corporation or shareholders whilst the remainder were in support of the contrary. 75% of the interviewees were of the opinion that shareholder growth cannot be supported by cash flow retention alone as it is a function of other key factors. From this view, the majority opinion is that retention of cash flows which is done under on balance sheet finance does not ultimately translate to shareholder benefit through future growth. Many would rather receive the cash flows today rather than continue to anticipate growth through retention.

6.8.4 Risk and return optimisation

6.8.4.1 Under which funding mode do you think that relationship between risk and return is better optimised?

In responding to the above question, 60% of the questionnaire respondents revealed that the relationship between risk and return is more likely better optimised under off balance sheet when compared to off balance sheet financing. In the interview, the majority view supported off balance sheet to provide better chances of optimising the relationship between risk and returns as opposed to on balance sheet financing. Those that were in favour of off balance sheet financing cited the following as the reason for their answer;

- PF reduces contracts due to the coherence of performance contracts;
- Reduction in agency costs increases returns whilst reducing risk;
- Greater expectation of cash flow distribution

6.8.5 Indication and Measurement of Shareholders' value

6.8.5.1 What do you consider to be the greatest indicators of shareholders' value in high capital outlay projects?

Although the DCF was viewed as one good measure of shareholder value, the majority of the questionnaire respondents suggested that all methods including the NAV, DCF, PER and DDM were critical measures to ascertain shareholder value. The five people interviewed were of the opinion that shareholder value can be measured using any of the above parameters but felt that the DCF offers a better indication of the shareholders' value as compared to the other parameters. However three of the interviewees recommended that using the other parameters is essential in measuring shareholders' value as they provide a guiding parameter even though ultimately the final decision can be made by comparing results of the DCF. From this assessment, it is therefore safe to measure shareholder value in both funding modalities using DCF whilst the other modes can be used as supporting tools to determine shareholder value.

6.8.5.2 What is your perception of shareholders value preservation under on balance sheet financing in terms of the following parameters?

This question was designed to gauge a view on where shareholder value lies under the two different funding modes. The interview results from two of the interviewees suggested that if a high capital outlay project is funded on balance sheet, the shareholder value as measured by the discounted cash flow parameter is likely to be high due to the fact that all the positive cash flows from the project will accrue to a single sponsor as opposed to in off balance sheet circumstances where the cash flow will be distributed amongst a number of sponsors hence reducing the value accruing to a shareholder. The other three respondents however suggested that, cash flow is not more guaranteed when a huge capital outlay project is financed on balance sheet due to the various inefficiencies that may accrue when such project is funded on balance sheet which ultimately reduces shareholder value from a discounted cash flow basis. All the five interviewees were of the opinion that in on balance sheet terms shareholder value as measured through the Net Asset Value (NAV) is likely to suffer due to the fact that the company will be carrying the huge debt which erodes the value of the business. The results prefer that shareholder value in NAV terms is under threat from the heavy debt under on balance sheet although from a DCF point of view the results were not conclusive on whether shareholder value is preserved under on balance sheet finance.

6.8.5.3 What is your perception of shareholders value preservation under off balance sheet financing in terms of the following parameters?

All the interviewees expressed the view that off balance sheet financing preserves shareholder value in terms of NAV as the debt is warehoused in a separate SPV which means that shareholders' value on the sponsor's balance sheet remains unaffected. Three of the interviewees indicated that they had more certainty of earning cash flow from a high outlay project funded off balance sheet hence the feeling was that in terms of the DCF, more value is likely to be yielded for shareholders as cash flow is more likely to be earned and distributed. They further suggested that since the project has a finite life cash flows are more likely to be distributed in off balance sheet funded projects. The interviewees felt that the same arguments used for DCF can actually

apply for the other methods such as DDM and PER. The majority views are that shareholder value is more preserved both from an NAV point of view and as measured by other modalities. The NAV suggestion is supported by the fact that debt is warehoused in an SPV which does not have recourse to the other assets belonging to the shareholders as is the case on balance sheet. As cash flow is highly likely to be distributed under off balance sheet, shareholder value is most likely to be preserved off balance sheet. Secondly, the micro management of the project as well as the reduction in agency related inefficiencies is most likely to result in better cash flows and high probability of success of the project.

6.8.6 Shareholder value creation and risk

6.8.6.1 Is more shareholder value created through funding huge capital outlay projects through off balance sheet and non-recourse finance?

From the majority of the questionnaire respondents, there is strong belief that shareholder value is likely to be created through funding huge capital outlay project off balance sheet. 60% of the questionnaire respondents indicated that they believe that shareholder value is created this way, whilst 28% indicated that it was difficult to ascertain. The majority of the interviewees suggested that more value is created by funding huge capital outlay projects off balance sheet. They cited the potential to limit project failure through intense micro management and the reduction of agency costs as the major tools driving project success which they say is difficult to control under alternative methods. 1 of the interviewees was however of the opinion that a conclusive answer cannot be given. From these results majority indication is that shareholder value is created through funding projects off balance sheet.

6.8.6.2 Is limited-recourse finance less risky than normal recourse finance?

The questionnaire respondents' view was that limited recourse finance is less risky than normal recourse finance. 15 of the respondents were in support of this view whilst 8 of the respondents were of the view that it is difficult to ascertain. All the interviews felt that limited recourse finance is less risky as it limits the recourse to the assets of the company to only those related to the project in the event of project failure. They also cited that the complex nature of the project finance contracts limits the risk of the project failure. From the assessment of the results it is

clear that the popular view is that limited recourse finance is less risky than normal recourse finance. This view stems from the fact that off balance sheet financing limits the chance of mortgaging other shareholders' assets outside the project.

6.8.6.3 Is more shareholder value created through funding huge capital outlay projects through on balance sheet?

The popular view of the respondents was against the question suggesting that the most of the respondents do not expect shareholder value to be created through on balance sheet financing. Four of the interviewees were of the opinion that funding huge capital outlay project on balance sheet does not always result in shareholder value creation. This they attributed to the fact that management may be limited in providing the attention that the project requires to succeed as they have many other projects to deal with. Consequently, the project will not achieve its potential which ultimately erodes shareholder value. However one of the interviewees felt that this is difficult to ascertain as shareholder value impact will vary per project. Results of the survey indicate at a lack of confidence in shareholder value creation under on balance sheet financing.

6.8.6.4 Is normal unlimited-recourse finance more risky than limited recourse finance?

From the questionnaire responses, the most popular view is that unlimited recourse finance is more risky than limited recourse finance. All the interviewees suggested that normal recourse finance is more risky as it mortgages the balance sheet of all the company's assets beyond the project assets. It appears the major concern from the result is that unlimited recourse finance exposes shareholders value to liquidation. In the event of project failure shareholders' fear that due to the likely high magnitude of the debt, the other assets of the company that were not related to the project will be compromised.

6.8.6.5 Would you risk your balance sheet by funding a huge capital outlay project on balance sheet?

Most of the questionnaire respondents were of the strong view that they would rather insulate their company through funding a high capital outlay project off balance sheet than on balance

sheet. 68% of the respondents would rather not jeopardise their balance sheet through incorporating a huge capital outlay project on balance sheet. All the interviewees indicated that they would rather prefer to fund a huge capital outlay project off balance sheet in order to limit the risk to that project alone and insulate other company assets from the risk of failure. The majority view is in support of funding high capital outlay project off balance sheet so as to insulate against risk.

7 RESEARCH CONCLUSIONS

Conclusion

The questionnaire results suggests that PF (Off balance sheet) involves raising of funds on a limited recourse basis to finance an economically independent investment project in which the providers of the funds look primarily to the cash flow from the project as the source of funds to service their loans and provide the return of and a return on their equity invested in the project (Finnerty, 2007). The questionnaire and interview results clearly differentiates off balance sheet financing with on balance sheet finance by insisting that the latter involves non-recourse finance whose repayment of the project debt extends beyond project cash flow. From this definition, it is clear that the following benefits accrue as a result of off balance sheet financing;

- Limits the loss in the event of project failure to project specific assets;
- Frees parent company's balance sheet to raise additional debt to fund other projects;
- Provides better risk management, mitigation and sharing potential.

It can also be concluded from the definition that off balance sheet financing also has the following challenges;

- Contractual complexity can delay project consummation;
- Does not support cash flow retention to support future company growth which might ultimately push shareholder value.

In summary, the results show that on balance sheet financing has the following benefits;

- Simpler contracts which are easier to implement cuts the time of deal consummation;
- Encourages cash flow retention which can be used to push growth which may ultimately benefit shareholders.

However, the major challenges with on balance sheet financing can be summarised as the risk magnitude through unlimited recourse on the assets and the uncertainty of cash flow distribution which can be discouraging in high capital outlay projects.

The survey results revealed that most of the respondents view off balance sheet financing to be of lesser risk magnitude compared to on balance sheet finance. The reasons for the prevalence of this perception emanate from the following parameters;

- Unlimited recourse nature of on balance sheet finance compared to limited recourse nature under off balance sheet which insulates shareholders under off balance sheet;
- Different and complex contractual agreements in off balance sheet finance compared to on balance sheet finance were a few contractual agreements may not be able to insulate shareholders against costly agency costs.

The above aspects are also well covered under the Mozal project in which the IDC is widely covered against political and other risks and also has several agreements which have been established to reduce the impact of agency costs. The congruency between results of the two phases weighs in favour of the perception that risk is better managed under off balance sheet structure.

Comparing the magnitude and certainty of Returns between the two funding modes, the wide assertion from the survey is that returns are more likely to be higher and more certain in off balance sheet finance as compared to on balance sheet finance. The fact that only project cash flow is the sole source of debt payment motivates that any cash flows should be distributed amongst the sponsors who would like to use the cash flows to repay their obligations. With on balance sheet, the motivation is to reinvest the cash flows from the project in the main company with the hope of generating future growth. Whether such growth is ultimately realised is debatable but what is clear is that managers' discretion does affect shareholders' ability to receive cash flow. The Mozal project case study is clear testimony of the high magnitude of cash flow that can accrue to a sponsor in off balance sheet financing. Esty 2003 also suggested that off balance sheet finance cash flows are likely to be high and certain and cited the Chad-Cameron oil pipeline project.

It follows that shareholder value is more likely to be realised in instances where returns are more likely to be higher and certain. Results point at better and more certain cash flow distribution from a project funded off balance sheet as compared to on balance sheet which ultimately supports greater shareholder value. The majority of the respondents were clear that on balance sheet finance supports cash flow retention. However, they also indicated that such cash flow retention as done under on balance sheet does not usually translate to growth that is beneficial to the shareholders as a result they would prefer an off balance sheet financing structure where cash flows are distributed to sponsors who will have a discretion on whether to reinvest them and on which projects to reinvest the cash flows. From the Mozal case study, it is clear that the IDC has

never missed a dividend and has a direct influence on cash flow distribution which is likely to be beneficial. Furthermore, IDC's returns in both IRR, NPV or payback period have been good which supports the suggestion that off balance sheet projects create more immediate shareholder benefits of greater magnitude. In terms of risk and return optimisation, the survey supported off balance sheet to provide better chances of optimising the relationship between risk and returns as opposed to on balance sheet financing. Those that were in favour of off balance sheet financing cited the following as the reason for their answer;

- PF reduces contracts due to the coherence of performance contracts;
- Reduction in agency costs increases returns whilst reducing risk;
- Greater expectation of cash flow distribution

The Mozal case has highlighted how the above issues are addressed in a clear off balance sheet structure. This can be difficult to implement in an on balance sheet structure due to the influence that management exerts on the overall company. As such the respondents' view that risk and return is better optimised under off balance sheet financing can be adopted.

In terms of indication and measurement of shareholders' value, the respondents were not very clear as to which measure of shareholder value is preferred and prevalent in assessing shareholder value under the two funding modes. The Mozal project however provided evidence that both NAV and DCF related methods are key in indicating shareholder value measurement. However, from the Mozal project results, it is clear that shareholder value was preserved in terms of both NAV and DCF basis. The respondents do indicate that shareholder value when measured in NAV terms is likely to be eroded when a huge capital outlay project is funded on balance sheet as compared to off balance sheet. Although some of the respondents were of the opinion that from a DCF value perspective on balance sheet may provide better value as all cash flow accrues to a single sponsor, the majority of the respondents supported the view that in off balance sheet shareholder value as measured through DCF is likely to be high due to the certainty of such cash flows.

In terms of shareholder value creation and risk, the survey indicated that there is strong belief that shareholder value is likely to be created through funding huge capital outlay project off balance sheet. 60% of the questionnaire respondents indicated that they believe that shareholder value is created this way, whilst 28% indicated that it was difficult to ascertain. The majority of the interviewees suggested that more value is created by funding huge capital outlay projects off

balance sheet. They cited the potential to limit project failure through intense micro management and the reduction of agency costs as the major tools driving project success which they say is difficult to control under alternative methods. 1 of the interviewees was however of the opinion that a conclusive answer cannot be given. From these results majority indication is that shareholder value is created through funding projects off balance sheet.

By assessing the results of the survey and the Mozal case study it is clear that both forms of funding huge capital outlay projects have their own challenges and benefits. It is also clear from the analysis of the results that shareholder value can be enhanced or preserved under both on balance sheet financing and off balance sheet financing. However, from the results it appears that shareholders' value is better preserved and enhanced under off balance sheet financing when compared to on balance sheet financing. The reason for such conclusion lies in the ability of off balance sheet finance to reduce inefficiencies which are prevalent under on balance sheet finance. In addition risk is better managed under off balance sheet as compared to on balance sheet. Consequently shareholders can expect more value when funding huge capital outlay project off balance sheet as opposed to on balance sheet.

8 LIMITATIONS AND RECOMMENDATIONS FOR FUTURE RESEARCH

8.1 Limitations of the research

Although the research provides an informed indicator on which funding mode enhances shareholder value, the following limitations with the research should be highlighted;

- It does not provide a quantifiable conclusion on the magnitude of shareholder value enhancement that can be realised when a huge capital outlay project is funded off balance sheet as compared to on balance sheet;
- It does not give an indication on whether the change in shareholder value is affected by the capital structure within the project funded as opposed to the capital structure of the sponsor;
- It fails to acknowledge that shareholder value is a function of other parameters other than the choice of funding a huge capital outlay projects.
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8.2 Recommendations for future research

All the above parameters may have a material impact on shareholder value thereby affecting the results. From the above limitations, it will be interesting and more informative for future researchers to investigate and establish a quantifiable relationship between shareholder value changes and choice of funding. This will complement the work covered in this research and add more value to the literature that is already available.

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APPENDICES

Appendix 1	Research Questionnaire
Appendix 2	Sample Interview
Appendix 3	Informed consent form
Appendix 4	Calculation of NAV for Mozal Project
Appendix 5	Calculation of Payback period for Mozal project
Appendix 6	Calculation of NPV for Mozal Project
Appendix 7	Calculation of IRR for Mozal Project