UNIVERSITY OF KWAZULU-NATAL

AN EVALUATION OF THE INVESTMENT APPRAISAL PRACTICE IN THE NAMIBIAN BANKING INDUSTRY

By

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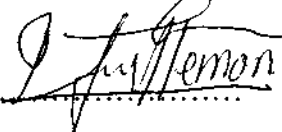
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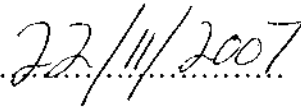**(Retired Professor)**

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DECLARATION

I hereby declare that this dissertation is my original work. Any work done by other persons has been properly acknowledged in the text. This dissertation has not been submitted for any other degree or examination at any other university.

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ABSTRACT

The study examines the investment appraisal practices in the Namibian banking industry. It focuses on how the banks perform an investment appraisal, subsequent follow- up and measurement of project failure or success. The results reflect that both centralized and decentralized project decision making are practiced in the industry. Banking institutions have a tendency to use a single investment appraisal technique, mostly a discounted cash flow (DCF) model. They apply uniform appraisal techniques throughout the project life cycle. It was noted that firms apply a constant cost of capital across time and projects. The average cost of funds is found to be the main determiner of the companies' cost of capital. The firms pay attention to project risks and use financial measures to determine the project's success or failure. The alignment of the appraisal techniques used with the overall organization objectives was considered to be crucial in the banking industry. The paper was concluded on the note that the use of traditional investment appraisal techniques is far from over.

Author Keywords: Capital budgeting, investment appraisal, project risk analysis, DCF methods

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LIST OF ACRONYMS

ARR   Accounting Rate of Return

CAPM Capital Asset Pricing Model

DCF   Discounted Cash Flow

EVA   Economic Value Added

GGM   Gordon Growth Model

ICT   Information Communication and technology

IRR   Internal Rate of Return

MRR   Modified Rate of Return

NPV   Net Present Value

PBP   Payback Period

R&D   Research and Development

WACC Waited Average Cost of Capital

CHAPTER ONE: INTRODUCTION

1.1 Background

There has been a lot of research that explores the relationship between theory and practice of corporate finance. Among the many scholars, the works of Mao (1970), Gitman and Forrester (1977), Schall *et al.* (1978), Ross (1986), Harris and Raviv (1996, 1998), Arnold and Hatzopoulos (2000), and Graham and Harvey (2001) can be cited as examples. This effort is still continued today and scholars are constantly searching for the best way of making investment decisions and trying to bridge the gap between the prevailing theory and the current company practices.

This survey is also an attempt to assess the theory-practice gap in capital budgeting.

Holmes (1998) says that although all aspects of financial management are important to the operational success of a firm, decisions relating to capital investment are arguably the most important. He presents the following reasons: the decisions usually account for a large portion of the organization's funds; always have an impact on the future cash flows; are usually characterized by risk and uncertainty; might be difficult or costly to reverse and could have a direct impact on the ability of the organization to meet its goals. For these reasons, it is therefore essential that a reliable investment appraisal process is deployed before funds are committed to any activity.

Baddeley (1996) says that the role of investment appraisal is therefore firstly, to ensure that relevant and appropriate information is gathered relating to all the options and secondly, to enable decisions to be taken with clear consideration being given to the organization's objectives. Many methods of investment appraisal have been developed. Some drawbacks which are associated with existing investment appraisal techniques include not taking into account time value of money, an inability to capture non financial information, and the limitation of the scope of application to certain types of projects.

Thus, searching for comprehensive alternative methods is a matter of concern among business professionals.

1.2 Research motivation

Gilbert (2005) cites that the increasingly capital intensive nature of modern production methods necessitates careful consideration in the selection of methods and processes used for investment appraisal. Finding a reliable method of investment appraisal in the present time is not only a matter of concern for managers of a company, it is also increasingly important to shareholders.

According to Akalu (2001) over the past years, practitioners and academics have been crafting various methods of measuring the viability of projects. He establishes that discounted cash flow techniques are the ones often most used; of which Net Present Value (NPV) and Internal Rate of Return (IRR) are the most commonly known. However, (Boenkakker (1975) and Damodaram (2000)) note that some companies are becoming doubtful about the capacity of those methods to correctly assess their projects' viability. This gives a challenge to the researchers to re-examine the various issues around the problems of the existing methods of investment appraisal.

Arnold (2005) notes that, the existing appraisal techniques depend mostly on financial data either projected or historic. This leads to the question as to whether these techniques are able to capture non financial information which could also be crucial for determining the feasibility of a project.

According to Holmes (1998), the result which is given by the investment appraisal process could only be as good as the data on which calculations are based. This creates a question of whether the investment appraisal techniques provide hard-and-fast decisions or whether they should be used only as a guide in the decision making process.

Mott (1997) cites that in practice, managers usually view profit as the best measure of performance. This leads to the question of whether capital project appraisal should assess if the investment is expected to be profitable or whether it should measure its cash flow merit.

Based on the statements above, it is evident that although many studies have been carried out, much still needs to be done in order to obtain a comprehensive understanding of this subject.

1.3 The research problem Statement

According to Aggarwal (1980) the exploration for reliable techniques of project appraisal dates back decades. A number of tools are available to determine the extent of profitability of a project (Akalu (2001) and Nieto and Remer (1995)). However, Randall and Woods (1989) note that some of these methods are unable to accommodate the current changes in business environment, especially where increasingly shareholder value is of importance. In addition, the continuous application of traditional methods reveals significant limitations in their capacity to address the basic problems of investment appraisal (Laitimen (1997), Lefley (1997) and (2000)).

Tam (1992) states that the inadequacy of discounting cash flow methods in appraising soft projects such as information technology and research and development led the management to select projects on perception, experience and rule of thumb methods. In addition, Harris (2001) notes that the retail banking practice reveals the unproductiveness of the information technology projects after they have been approved using the standard appraisal method. Mills and Necken (2004) note that information technology investments have special characteristics (high risks, large proportion of intangible/hidden costs and benefits) which make the use of these techniques very difficult and the reliability of the outcome most uncertain. They say that new justification methods/techniques are developed. Neither these adjusted techniques nor the new techniques are, however, frequently used. They explain that this might be explained by the fact that the outcome of these techniques is difficult to interpret and to use and the fact that some significant

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problems (like the estimation of hidden costs) remain unsolved. Moreover, most of the new techniques are still in the conceptual phase.

The banking industry is one of the industries where diverse project decision making takes place. The industry's investment decisions range from information technology to real estate. The nature and types of these projects vary from installing automatic teller machines (ATMs) to internet banking and include office automation for cost reductions. All these projects involve a great deal of project management decisions.

In an attempt to rectify the problem of traditional investment appraisal techniques, proposals such as the real option model, the shareholders value analysis (SVA), and the economic value added (EVA) are examples (Boer (2000); Benaroch at al. (1999); Adler (2000)). However Tallon at al. (2000) criticize the above methods. They say the real option theory is complex, demands enormous computational work and requires additional data. They cite that the major drawback for EVA is that it does not contain the concept of time value of money, the basic ingredients of value measurement. The research problem is to discover which of the current appraisal techniques are used in the Namibian banking industry and whether they are appropriate.

1.4 Research aim and objectives

1.4.1 Primary objective:
The objective of this study is to evaluate the current practices of capital budgeting in Namibian banking companies in light of theoretical and empirical literature on the subject, leading either to acknowledging the merit of the current practice or suggestions for improvement. In particular, the study is interested in how these companies perform investment appraisal, subsequent follow-up, and measurement of project success or failure.

extent, influenced by structural context, information system and management performance.

Holmes (1998), states that investment appraisal attempts to determine whether the benefits from undertaking an investment are sufficient to warrant the initial expenditure. In its simplest form, an investment decision can be described as "a firm's decision to make a cash outlay in order to receive, in return, future cash inflows" (Lumby, 1994).

According to Pike and Neale (2003), the objective of the capital budgeting process is not necessarily to choose the most profitable option but to select the best option for the business in light of a good investment decision. The assumption is that the application of correct theoretical method leads to optimal investment selection and, hence, maximizes shareholders' wealth.

Arnold (2005) states that investment appraisal decisions could be improved significantly if the emphasis was placed on asking the appropriate strategic question rather than on increasing the sophistication of the measurement techniques. He suggests that managers should re-evaluate the investment procedures within their organizations.

Gilbert (2005), cites that managers do not base their capital investment decision on a comparison of the expected value of potential investment opportunity as recommended by theory. Rather, they follow a multi-stage filtering process and reduce the list of projects by establishing the alignment with the firm's strategic goals on a qualitative basis. He explains that discounted cash flow evaluation methods (among others) are used to confirm that selected projects are expected to achieve satisfactory levels of financial performance.

Mott (1997) outlines a standardized approach to investment appraisals as follows:

Step 1	Define project
Step 2	Strategic fit
Step 3	Identify options
Step 4	Value each variable
Step 5	Conduct appraisal
Step 6	Assess risk
Step 7	Consider non-quantifiables
Step 8	Gain authorisation
Step 9	Commission the project
Step 10	Carry out post-audit
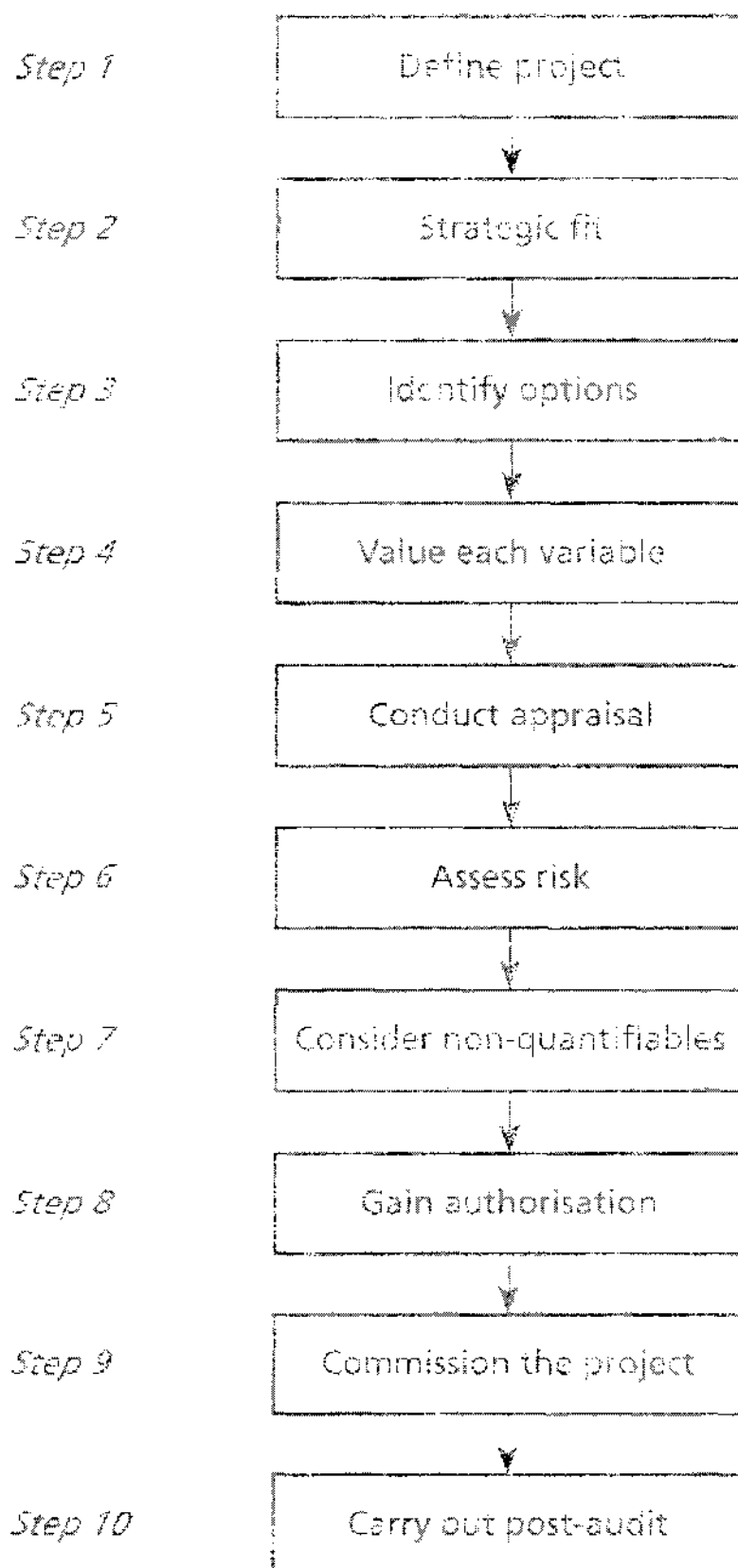
Source: Mott (1997)

Step 1: Define the project

Hall (2000) articulates that the most important stage in the capital budgeting process is project definition and cash flow estimation, not financial analysis. He says that at the definition stage the nature of the project must be defined with its merits and demerits outlined. It is essential that the cost, duration, and commencing date of the project are documented. The opportunities and threats that come with it must also be evaluated. The budget should also be determined at this stage.

Step 2: Strategic fit

Harris and Raviv (1998) maintain that one of the major tasks of the project manager is to select a project that maximizes the objectives of a company. He argues that such mechanism will provide incentive for mangers of the organization so as to make value maximizing choices.

Gilbert (2005) concludes that understanding companies' competitive environments and strategic reactions to these environments are vital to understanding their capital investment decision – making behaviour.

Arnold (2005) states that investment opportunities must be evaluated to find a match with the firm's long term plans in terms of the business' core competencies, its competitive position, industry outlook and expected economic conditions. Holmes (1998) states that, when a business-unit investment is isolated from the main thrust of the firm, it may result in a distraction in terms of managerial attention and financial resources. It may not always be the case that a project which is viable at divisional level would be appropriate when examined from the whole – firm perspective. It may even be contradictory to the firm's goals.

Step 3: Identify Options

There must be more than one option of investment from which the management can choose based on the viability of options. The management must measure all potential projects by their cash flow merits rather than by profitability. Levy and Sarnat (1994) argue that in many instances the choices between alternative projects create difficulties for the managers for a number of reasons namely:

- The estimated benefits of the investment are uncertain, as they will be realized some time in the future.
- The benefits and costs which occurred in different time periods are not comparable.
- Not all benefits or costs of a particular action can be measured in quantitative terms.

Step 4: Value Each Variable

The management must establish the value of all variables impacting on the viability of a project. This may include the determination of:

- Capital outlay
- Expected sales receipts
- Project's life span
- Expected operating costs
- Tax rate
- Inflation
- Residual value of assets at end of project's life

Step 5: Conduct appraisal

Arnold (2005) states that at this stage the detailed cash flow forecasts are required as inputs to the evaluation methods which include payback period, discounted payback period, accounting rate of return, profitability index, Net Present Value, Internal Return

and modified internal rate of return. He advises that there must be manuals which provide detailed checklist to help in ensuring that all relevant costs and other factors have been considered. These manuals should explain how to calculate each technique, and should also supply the firm's opportunity cost of capital.

Step 6: Assess Risk

In most investment scenarios, there is no certainty that the eventual outcome will be exactly as predicted at the time of the appraisal. Management must, as a result, put mechanisms in place to minimize the risk that they are taking. Risk can be measured using probabilities, probability distribution, standard deviation, correlation and coefficient of variation.

Step 7: Consider Non Quantifiable factors

Buttler et al (1993) advise that for the capital budgeting decision to be productive, the management needs to give adequate consideration to the firm's external environment factors which could influence the success of the project. Comparison with competitors is likely to provide information needed to establish the standard. Economic outlook should also be documented and matched with when an investment decision is to be executed.

Step 8: Gain Authorization

Arnold (2005) urges that to promote flexibility, the lever of approval must be based on the value of the project whereby expenditure below a threshold will gain authorization at division/branch level while those above a threshold will need approval at corporate level. According to Turner and Payne (1998), some companies share the decision-making authority and responsibility based on project size as measured in terms of money. This result is similar to the findings of Harris and Reviv (1998). They say in few cases, specialized committees are formed per project specialist, such as a separate committee to appraise ICT and R&D projects.

Step 9: Commission the Project

Arnold (2005) says that beyond authorization the management needs to draw up a specified schedule of expenditure and the accountants must keep a watchful eye on cash outflows. During the installation, purchasing and construction phases, comparisons with original estimates must be made on a periodic basis. There must be a limit on over spending and an occurrence of overspending must be justified. Any change to the projected start and completion dates should be addressed.

Step 10: Carry out Post-Audit

The final stage in the capital budgeting decision-making and control sequence is the post-completion audit. The main objective of post audit is to compare the actual performance of a project after a certain period of time. A task team must be instituted to monitor and evaluate the progress of a capital investment project through a comparison of the actual cash flow and other costs as well as the benefits with those forecasted at the time of authorization. Follow up procedures must be established to examine the performance of the project over a long time span. Senior management must conduct a careful balancing act because the post-completion audit may encourage another sort of non – optimal behavior.

Literature indicates that the most important stages in the capital budgeting process appear to be project definition and cash flow estimation and financial analysis.

2.3 Determination of relevant cash flow

Every decision the firm makes is a capital budgeting decision whenever it changes the company's cash flows. Consider launching a new product. This involves a phase where the new product is advertised and distributed. Hence the firm will have cash outflows for paying advertising agencies, distributors, and transportation services. Then, for a period of time, the firm has cash inflows from the sale of the product in the future. Alternatively,

consider the decision to make or buy a certain component the firm needs as an input it currently purchases from another company. Making the input requires payments for labor and materials, but saves payments to the supplier, and all these cash inflows and outflows are affected by that decision.

Mott (1997) articulates that before any appraisal can take place, a cash flow model is required covering the whole life of the investment in which costs and benefit are estimated, normally at yearly intervals.

Correia *et.al* (2003) say that estimation of future cash flows is probably the most relevant and difficult task in evaluating an investment project. They emphasize that the use of cash flow instead of profit would avoid accounting issues such as determining when income is earned rather than received, when expense is incurred rather than paid, and when a cost is an asset and when it becomes an expense.

Arnold (2005) notes that finding the appropriate cash flows to include in project appraisal often involves some difficulty in data collection and requires some thoughtfulness in applying the concept of incremental cash flows. He stresses that what are of interest to investors are the future cash flows and the precise timing of these cash flows, rather than profitability of the project.

2.3.1. Items which should be included in cash flow model

2.3.1.1 Beginning of the project cash flows

The initial investment may result in the following cash flows: Cost of acquisition (outflow), proceeds from the sale of the existing asset (inflow), tax effect (inflow/outflow) and change in working capital requirement (inflow/outflow)

2.3.1.2 Use only incremental cash flows

Correia et.al (2003) state that in most cases, firms are operating as going concerns and the evaluation of my project should include only incremental cash flows and not existing cash flows. This means that the focus should be on how cash changes and on how the organization would be effected by the decision to invest on a particular project. Only those cash flows that arise because of the project should be included in the analysis.

2.3.1.3 Opportunity cost of any assets being redeployed

The direct inputs into a project are generally easy to understand and measure. In many cases, a project uses resources which already exist within the firm but are in short supply and which cannot be replaced in the immediate future. This means that the project under review could be using resources from other projects and, as a result, those other projects could experience reduction on cash flow. Arnold (2005) stated that in some cases the new project could be deployed in space which could have been rented out to another firm. There the forgone rental income should be treated as a cost of the project under consideration. Correia et. al (2003) articulates that one should not evaluate the investment by measuring the position of the firm before and after the investment. The evaluation should focus on the consequences of the investment.

2.3.1.4 Working capital requirements

Arnold (2005) says that when a project is accepted and implemented the firm may have to invest more money in fixed assets. However, investment on a new project often requires an additional investment in working capital, that is, a difference between short term asset and liabilities. This investment in working capital forms part of the investment outlay and should be included in the project appraisal. There are four types of working capital, namely: Cash floats, Inventory, debtors and creditors. Thus often four working capital adjustments should be made to the profit and loss account figures to arrive at cash flow figures. Correia et.al(2003) note that it is the net investment in working capital that is

relevant, although we include each component in the analysis. This means that the investment in working capital should be reduced to the extent that credit is obtained from suppliers. At the end of the project the whole amount of working capital less the value of damaged stock (if there is any) should be recovered and should be treated as a cash inflow in the final year. The motive is that this finance which was tied up for working capital could now be released for other purposes.

2.3.1.5 Operating cost and revenues

Correia *et.al* (2003) state that an investment project may result in positive cash flows due to either increased revenue or reduced costs. On the other hand, it could be that a new machine could result in increases in maintenance costs. Whatever the effect of the cash flow is (positive/negative), as long as it was a result of investment decision, it should be accounted for. If total cost does not change, cash flow is not affected and this is therefore irrelevant in the capital budgeting exercise.

2.3.1.6 Include the effects of new product lines on existing product lines

The introduction of a new product might have a negative or positive impact on the existing products. This is likely to happen when the new products are competitive in nature or are substitute products. According to Correia et.al (2003), the reduction in the net cash flows from existing products should be taken into account as cost in evaluating the new project. However, if the new product line happens to have a positive effect on the cash flows generated by the existing product, than, the net increases in cash flows should be included as revenues in the evaluation of the new project.

2.3.1.7 Tax payment on profit

Lumby and Jones (2001) stress that taxation has an important role to play in investment appraisal as it can have a substantial impact on the desirability, or otherwise, of an investment opportunity. They further explained that what are of importance are the cash flows that will be generated by the project and those that are available for shareholders. In the other words, as far as investment is concerned, one would wish to evaluate the after-tax cash flows of a project.

2.3.2 Items which should be excluded from cash flow model

2.3.2.1 Depreciation

There is sometimes confusion about the treatment of depreciation in cash flow models. Deprecation is a notional expense and not an actual cash transaction in the sense that all other costs will lead to money flowing out of the firm bank account. According to Arnold (2005), accounting profit is always calculated after deducting depreciation, whereas what matter to investment appraisal is cash inflows for a year. Depreciation must be totally ignored when one is calculating the net cash flows for appraisal purposes.

2.3.2.2 Financing cost

Capital projects must be financed and in many cases they are financed through borrowing and consequently it will require a series of cash outflows in the form of interest payments. These interest charges should not be included in the cash flows. The discount rate takes into account the cost of finance, and the cost of debt is a component of the cost of capital. Including financing charges in the future cash flows would amount to double counting. Arnold (2005) stated that the net cash flows are reduced to present value by allowing for the weighted average cost of finance to give a return to shareholders and lenders. He

mentions that if the un-discounted cash flow also has interest deducted, there would be serious understatement of NPV.

2.3.2.3 Sunk costs

According to Pike and Neale (2003), any costs incurred or revenues received prior to a decision are not relevant cash flows, "they are sunk costs". This means that only costs which could be avoided or altered should be included. Development costs are past cost and bygone, they must be ignored. The money spent on development is irrecoverable. Arnold (2005) cites that the mistake commonly made, is to regard pre-project survey work already carried out or committed to market demand screening, scientific study, and geological survey as a relevant cost.

2.4 Project risk management

In most cases businesses are operating in an environment of uncertainty. The purpose of investment appraisal is to assess the economic prospects of a proposed investment project. It is a methodology for calculating the expected return based on cash flow forecasts of many, often inter-related, project variables. In the other words investment appraisal is unavoidable looking into the future at the consequences of making a specific investment now. It would therefore be unrealistic to assume that the forecast cash flow in any cash flow model will occur exactly as projected. Risk analysis is one of the ingredients of project management. It focuses on the uncertain set of circumstances and its effect on the performance of the project. According to Vermeulen et al (1996), risk may be also be seen as an exposure to the possibility of economic or financial loss or gain, physical damage or delay as the consequences of the uncertainty associated with pursuing a particular course of action.

Arnold (2005) noted that implementing an investment project requires acceptance of the distinct possibility that the managers have "got it wrong", or that the project or enterprise

may result in failure. He adds that managements rarely make certain forecasts regarding the future return to be obtained from an investment. As a result, the best they could do is to make an estimate of the range of the possible future inflows and outflows. Marx et.al (2003) state that in assessing the risk of a project, a financial manager has to determine the probability that the expected cash inflows will be sufficient to provide for project acceptance.

Mott (1997) states that any of the following variables may differ from the original estimates: capital outlay, life of the project, sales receipts, operating costs, residual values, rate of corporation tax rate of capital allowances and rate of inflation. Petersen (1994) states that, for an evaluation of any investment to be meaningful, one must represent how much risk is to be taken and that the cash flows of an investment will differ from what is expected in terms of their amount and timing.

Savvakis (1994) notes that, risk emanates from the uncertainty encompassing the projected variables. "The evaluation of project risk therefore depends, on the one hand, on our ability to identify and understand the nature of uncertainty surrounding the key project variables and on the other, on having the tools and methodology to process its risk implications on the return of the project".

According to Mott (1997), by recognizing the fact that the values projected are not certain, an appraisal report is usually supplemented to include sensitivity and scenario analysis tests. Sensitivity analysis, in its simplest form, involves changing the value of a variable in order to test its impact on the final result. It is therefore used to identify the project's most important, highly sensitive variables. Pike and Neale (2003) cite that sensitivity analysis is a very simple technique used to locate and assess the potential impact of risk on a project's value. They said it aimed not to quantify risk, but to identify the impact on NPV of changes to key assumptions. Lumby and Jones (2001) cite that scenario analysis remedies one of the shortcomings of sensitivity analysis by allowing the simultaneous change of values for a number of key project variables thereby constructing an alternative scenario for the project. Pessimistic and optimistic scenarios are usually presented. Sensitivity and scenario analyses compensate to a large extent for the

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analytical limitation of having to strait-jacket a host of possibilities into single numbers, however useful though; although both tests are static and rather arbitrary in their nature.

Arnold (2005) noted that the absence of any formula assignment of probabilities to the variations of the parameters could be a potential limitation of sensitivity analysis. He says the second major drawback of this method could be that each variable would be changed in isolation while all other factors remain constant. It requires the examination of the sensitivity of one variable to changes in other variables.

Correia et.al (2001) stress that it is useful to consider project risk by undertaking a strategic analysis and evaluating such issues as the competitive environment and the potential reaction of competitors, switching cost, the threat of substitutes, differentiation, cost leadership and the relative power of suppliers and customers.

In practice, organizations usually adjust for risk through the discount rate which they use for their cost of capital. However, Aggarwal (1980) maintains that it is difficult, if not impossible, to assess accurately in practice the rate of discount that will be consistent with the riskiness of the cash flow stream being discounted. He says DCF techniques like any other capital budgeting techniques depend critically on the projection of cash flows. Arnold (2005) cites that the major drawback of adjusting for risk through the discount rate is that the method relies on an accurate assessment of the riskiness of a project. He states that risk perception and judgment are bound to be, to some extent, subjective and susceptible to personal bias. It could also be difficult to allocate projects to risk classes and identify appropriate premiums as personal analysis and casual observation can easily dominate.

Hall (2000) indicates that risk analysis and evaluation in practice are to a large extent neglected by South African companies. He found that nearly a quarter of companies' estimate their annual cash flows using management's subjective estimates alone. Smaller companies tend not to use any formal risk technique.

Parry and Firer (1990) indicate a general lack of understanding of advanced risk – analysis techniques. They stated that some firms felt that there was a need for more quantitative approaches to guide them to cope with uncertainty.

Pike (1996), and Ho and Pike (1991) find that UK firms have increased the extent of risk analysis in project appraisal. Pike (1996) says this trend has been encouraged by a greater awareness of the techniques and aided by the availability of computer software. His study shows that sensitivities and scenario analysis remain the most widely adopted approaches and that probability analysis is now used more widely than in the past but fewer small firms use it on a regular basis.

Vermeulen et al (1996) stress that risk analysis is a useful tool extending the depth of project appraisal and enhancing the investment decision. They report the following specific advantages for risk analysis:

- It enhances decision making on marginal projects. A project whose single-value NPV is small may still be accepted following risk analysis on the grounds that its overall chances for yielding a satisfactory return are greater than is the probability of making an unacceptable loss. Likewise, a marginally positive project could be rejected on the basis of being excessively risky, or one with a lower NPV may be preferred to another with a higher NPV because of a better risk/return profile.

- It screens new project ideas and aids the identification of investment opportunities. Very often a new project concept is formulated that needs to be developed into a business opportunity. Before any real expenses are incurred to gather information for a full feasibility study it is possible to apply risk analysis widening the margins of uncertainty for the key project variables to reflect the lack of data. A substantial investment of human and financial resources is not incurred until the potential investors are satisfied that the preliminary risk/return profile of the project seems to be acceptable.

- It highlights project areas that need further investigation and guides the collection of information. Risk analysis can contain the costs of investigation and fieldwork aiming at improving the accuracy of a forecast relating to particular project

variables. If the cost for obtaining such information is greater than the expected benefit likely to result from the purchase of the information (see the Cost of uncertainty above), then the expense is not justified.

- It bridges the communication gap between the analyst and the decision maker. The execution of risk analysis in a project appraisal involves the collection of information which to a large part reflects the acquired knowledge and expertise of top executives in an organisation. By getting the people who have the responsibility of accepting or rejecting a project to agree on the ranges and probability distributions used in risk analysis the analyst finds an invaluable communication channel through which the major issues are identified and resolved. The decision maker in turn welcomes his involvement in the risk analysis process as he recognises it to be an important management decision role which also improves his/her overall understanding of the appraisal method.

- It supplies a framework for evaluating project result estimates. Unlike the prediction of deterministic appraisal which is almost always refuted by the actual project result, the probabilistic approach is a methodology which facilitates empirical testing.

- It makes possible the identification and measurement of explicit liquidity and repayment problems in terms of time and probability that these may occur during the life of the project. This becomes possible if the net-cash flow figures or other indicators of solvency included in a project appraisal model (for instance the debt service coverage ratio for each year) are monitored during the simulation process.

The literature shows that risk analysis is one of the most important elements of project appraisal. It provides the necessary information base to facilitate a more efficient allocation and management of risk among various parties involved in a project. Once the various sources of risk have been assessed, project risk may be contractually allocated to those parties who are best able to bear it and/or manage it. Moreover, it enables the testing of possible contractual arrangements for the sale of the products or the purchase of project inputs between various parties until a satisfactory formulation of the project is achieved. The challenge is therefore, how to

better handle risk and incorporate into capital budgeting decision so that the variability between actual and estimated value will be minimal.

2.5 Project Progress monitoring and control

Akalu (2003) states that managers have realized the effect of project control for many decades. He says that various methods are designed to bridge the gap between the actual, and the expected project value through project control mechanism.

Turner and Payne (1998) cite that although the advantage of standardization of operation is evident for efficient and less costly control, tailor made techniques are also relevant at operational levels.

The measures are diverse and some of them are based on multivariate decision-making techniques and risk analysis (Dey et al 1994). They state that scholars argue the relevance of different control measures following different stages of project. They propose cost schedule and time (CST) as control measures. In general, many project control systems are becoming more sophisticated in order to meet today's complex nature of project environment and data analysis.

2.6 Capital budgeting techniques

2.6.1 Payback Period (PBP)
Ross *et al*, (2001) define the payback period as the length of time future cash flows take to recover the initial investment. The decision rule is that if a project's payback period is less than or equal to a pre determined threshold figure, it is acceptable. The project with the shortest payback period is always selected. Pike and Neale, (2003) say that this approach is widely used, especially by smaller firms, and the rationale behind it is that, the project with the shortest pay back period has the shortest risk.

Arnold (2005) states that although this technique is simple to use and understand, management should note that it does not take time value of money into account, and also ignores cash flows beyond the cut off date.

2.6.2 Discounted Payback Period

Arnold (2005) defined discounted payback as the period of time required to recover initial cash outflow when the cash inflows are discounted at the opportunity cost of capital. Eventually this is an improvement on the simple payback method in that it takes into account time value of money. Although this modification tackles the first drawback (time Value of Money) of the simple pay back method, it is still makes an arbitrary decision about the cut-off date and it ignores cash flows beyond that date.

2.6.3 Accounting Rate of Return (ARR)

The accounting rate of return in its basic form, calculates the ratio of the accounting profit generated by an investment project to the required capital outlay, expressed as a percentage (Lumby, 1994). It is also known as return on investment (ROI) or return on capital employed (ROCE). The ARR evaluates the project on the basis of its profitability over its entire asset life. The decision rule is that if the ARR is greater than, or equal to, a hurdle rate then accepts the project.

Formula:

ARR (Total investment) = Average annual profit   X 100
                         Initial capital invested

or

ARR (average Investment) = Average annual profit X 100
                           Average capital invested

The ARR technique is easily calculated since accounting data is used and the input required is the projected profits. It is also often favored by managers because it is an evaluation measure that is broadly consistent with return on capital employed and a ratio on which their own performance is measured. However, it ignores time value of money. For example, there is no allowance for the fact that cash received in year one is more valuable than an identical amount received in year three. More importantly, it is flawed, because it uses profits rather than cash.

2.6.4 Net Present Value (NPV)

Pike and Neale (2003) define NPV as the value of a stream of cash flows adjusted for time value of money. As the name implies, the net present value technique is the present value of all projected cash flows after netting out the initial capital. The present values are achieved by discounting the cash flows at the company's cost of capital. Lumby (1994) says that the NPV defines the best alternative as one with the highest positive NPV cash surplus or lowest NPV cash deficit. It works on the principle that an investment is worthwhile undertaking if the present value of the proceeds from an investment are at least equal to – if not greater than – the inputs.

The NPV is cash flow-based and measures in absolute terms. It takes the time value of money into consideration and considers all cash flows including non-conventional types. The shortfalls are that NPV relies on accurate inputs such as discount factor and the right cash flows to derive the correct values. It could also be a tedious method because of the great number of calculations required

2.6.5 Internal Rate of Return (IRR)

Pike and Neale (2003) define the internal rate of return as a discount rate that makes the NPV equal to zero. It is also the rate that causes the present value of net future cash flows

to equal the investment outlay, thereby making the NPV zero. The decision rule is that if a project's IRR is greater than the cost of capital or the project's required rate of return (RRR) then accepts, otherwise reject the project.

2.6.6 Modified Internal Rate of Return (MIRR)

According to Arnold (2005), MIRR is the rate of return which equates the initial investment with a project's terminal value where the terminal value is the future value of the cash inflows compounded at the required rate of return (the opportunity cost of capital).It is determined by calculating the rate that causes the present value of the terminal value of a project's inflow to equal the present value of the outflows, with terminal value being determined by re-investing at the cost of capital.

2.6.7 Real options

According to Boar (2000), the real option theory offers great insights about project investment by capturing its analogy with financial options. However, at present, most articles on this subject either use stylized numerical examples or adopt a purely conceptual approach to describe how option pricing can be used in capital budgeting.

Many articles apply the option pricing theory to offer insight about project investment. (Brennan and Schwartz, (1985); McDonald and Siegel (1985); Dixit and Pindyck, (1994)) Dixit and Pindyck, (1994) cite that the real option theory captures some of the basic conditions in project investment, namely irreversibility, ongoing uncertainty and some leeway in timing.

Moel and Tufano (2002) state that it seems clear that the incorporation of contingent claims analysis into capital budgeting decision-making promises to revolutionize the way corporations organize and assess their investment programs. However, at present, most articles on this subject either use stylized numerical examples or adopt a purely

conceptual approach to describe how option pricing can be used in capital budgeting. They say that the problem of option pricing is to estimate option price when the payoff structure at the end of a contract is given. They also say the problem of project investment is to estimate variable cost in production when irreversible fixed cost is invested or committed at the beginning of a project. So, project investment is an initial value problem while option pricing is an end value problem.

2.6.8 Economic Value Added (EVA)

Pike and Neal (2003) define EVA as a post-tax accounting profit generated by a firm reduced by a charge for using the equity (usually, cost of equity times book value of equity).

> According to Adler (2000) EVA is a residual income measurement which subtracts the cost of capital from net operating profits after tax generated in the business. He says EVA advantage is that it is the only performance measurement which links directly with the intrinsic value of the business.

Benaroch et al. (1999) cite that the dynamics of using EVA has a very powerful application in every business entity, irrespective of size or industry.

Davidson (1999) notes that financial institutions have started to use EVA, as internal cash flow valuation, and shareholders value creation on projects.

It has shown that shareholder value is maximized if and only if the firm makes only those decisions that generate positive net present values. Net present values are calculated by discounting the incremental cash flows of a decision. These may be different from the cash flows that physically relate to a project or investment object. The Payback period and accounting measures are illegitimate shortcuts, and there is a need to develop proper decision making tools for the problems they try to address. Since all criteria are optimal only to the degree that they agree with the NPV rule, it is best to use the NPV rule rather than anything else.

2.7 Empirical evidence on budgeting techniques

Gitman and Forreter (1977) indicate a strong preference for sophisticated investment appraisal techniques as the primary tool of analysis and the use of the IRR as the dominant technique. Klammer and Walker (1984) cite that the presence of more individuals in responsible positions who have received formal education in the use of sophisticated investment appraisal techniques is the reason that there is an increase in the use of these techniques. They mention that another reason may be that firms have responded to an increasingly uncertain environment by using more sophisticated techniques while some firms emulate others, in "follow the leader Approach."

Mills (1988) indicates that the popularity of IRR is in part psychological as well as being a measure of investment worth in percentage which is more appealing to executives. He also finds that the non-requirement for a cut off rate was the main reason for the preference of IRR method. In contrast, Pike (1988) finds that the most likely reason for the rapid uptake in this technique during the 1980s could be the general availability of discounted cash flow functions in spreadsheets and other financial software.

Pike (1988) investigates the possible reason why the Payback Method was so popular despite its shortcomings and came to the conclusion that it was because it is simple to calculate, useful as a first screening device and concentrates on early cash flows which determine the success of the project. This was supported by Lefy (1996) and Arnold (2005).

Parry and Firer (1990) find that most of the high capital intensive companies use IRR as a primary method while low capital intensive ones clearly prefer to use the Accounting Rate of Return (ARR).

According to Pike (1996), the application of a single method declined from 31% in 1975 to 4% in 1992. Conversely, the combined model usage has increased from 22% to 32%

(for three-model combination) and from 11% to 32% (for the four model combination) in the above observation periods. In addition, firms combine the standard models with value management models, which is consistent with the findings of Arnold and Hatzopoulos (2000) and Pike (1996). Similarly, Akalu (2003) notes a strong tendency to combine the discounted cash flow (DCF) models with the newly emerged value management tools and modified versions of DCF models. On the other hand Hall (2000) states that when DCF techniques are used, they are used in conjunction with other techniques that are both theoretically deficient and redundant. Ross (1995) stresses that the increasing uses of multiple methods in project appraisal reflect companies' tactics and strategies to minimize project value discrepancy expected in the application of a single model. In contrast, Demski, (1994) says that this strategy clearly indicates lack of credibility, certainty reliability and trust on the individual standard appraisal models for capital budgeting decisions and project or company value measurements.

Lefy (1996) notes that Pay Back has been shown to be a traditional, popular, primary, and important method in both the UK and USA. He finds that the use of Pay Back was not significantly influenced by firm size. He also notes that Pay Back has been shown to be less used for strategically important projects than routine replacement projects in moderately sized USA firms.

Lefley and Sarkis (1997) surveyed financial directors and senior executives in the UK and US on several factual and perceptual questions. The results show that the sophisticated investment appraisal techniques, such as discounted cash flow, are perceived to be unsuitable for evaluating Advance Manufacturing Technology projects, and that what is preferred by management is a basic financial appraisal method, such as Payback, possibly linked to some form of qualitative evaluation. This is in line with findings by Lefy (1996) who notes that Payback has been shown to be an important method used in the appraisal of advanced manufacturing technology projects in both the UK and USA.

Dilon and Owens (1997) note that EVA does not have a precise definition and, as a result, some firms use variation of the overall measure according to specifics of the application. The study also looks at the relationship between EVA and NPV. The result shows that the present value of EVA is not equal to NPV. They note that the major drawback to the use of EVA is the single year focus. The executive management recognizes the need for long term measurement of success especially when evaluating capital projects. They cite that in its basic form, the calculation of EVA does not consider the implication of decisions to future years.

De Villiers and Auret (1998) cite a benefit of EVA being that it accounts for the opportunity cost of capital from the profit generated. The study claims that the disadvantage of EVA is that it is based on accounting profit.

Davidson (1999) cites that financial institutions have started to use new generation tools such as EVA, as internal cash flow valuation and as a tool to analyze franchise and shareholders value creation on projects.

The study by Graham and Harvey (2001) investigating how chief financial officers in 4440 USA firms determine capital budgeting indicates that many executives use NPV and IRR to value projects. Out of 392 chief financial officers, over 70% responded that they always or always use IRR and NPV methods. However, Pike and Neale (2003) indicate that many managers prefer to use a non discounting approach for their investment appraisal. They observe that the use of NPV and IRR is a matter of personal preference in most instances. Quite the opposite Bhattcharyya (2004) cites that the banks and larger firms use both IRR and NPV on their project evaluation, but mostly prefer the IRR, and he suggests that is perhaps because of its ease of comparison with the cost of Capital.

Gilbert (2003), Moore and Reichert (1983), and Baddeley (1996) report that larger firms are more likely to use DCF techniques than the small firms. However, Ryan (2002) concludes that while DCF techniques can, and do, play an important role in capital

investment decision-making, the costs (and sometimes impossibility) of completing them properly means that their use is always going to be limited.

A survey conducted by Akalu (2003) indicates that Standard appraisal methods have shown a wider project value discrepancy which is beyond and above the contingency limit. In addition, the research found that there is a growing trend in the use of value management models. The presence of correlation between the frequency of monitoring and project value discrepancy, and the absence of uniformity in the use of evaluation methods throughout the life span of a project are among the results of the study.

Correia *et.al* (2003) shows that although undiscounted techniques do not take into account time value of money, they are still widely used in practice. They conducted a study of the use of evaluation techniques among South African firms and found that the use of Discounted Cash Flow techniques has grown, and that the increases in their use are not accompanied by a decline in the usage of Pay Bank and other non DCF techniques. This is similar to the findings by Lefly (1996) who notes that while many of the surveys have reported an increasing use of the discounted cash flow financial appraisal methods; this has not totally been at the expense of the Pay Back which continues to be a popular method used in industry. Arnold (2005) also notes that the Payback Method is used extensively, despite the increasing application of discounted cash flow techniques.

Buckley (2004) reports results of two studies with different findings. The first study was aimed to test investment evaluation based on the size of the firm. The following results were obtained:
- Smaller firms tended to use accounting rate of return as their evaluation methods;
- Larger firms dominated in using the cost of debt as their discount rate;
- Smaller firms dominated in varying the required rate of return to adjust for political risk.

In the second study the following results were obtained:
- Firms with a smaller involvement in international business tend to use the income

measure of pre-tax net cash inflow to the foreign business in local currency terms in their international investment appraisal in countries without exchange controls.

- Firms with a smaller involvement in international business tend to evaluate international investment decision using an income measure of profit before tax in home currency terms when they are investing in territories without exchange controls.

- Firms with a smaller involvement in international business tend to evaluate cross-border involvement decision using an accounting rate of return criterion.

- Firms with larger involvement in international business tend to evaluate international decisions incorporating an allowance for consequential cross-border cash flow which impacts on the international cannibalization effect.

Micheal (1990) concludes that orthodox IRR criterion uses only part of the information that can be gleaned from the Time Value of Money equation for an investment project. Hence it employs one difference between interest rates, that is, between the orthodox IRR and the cost of capital. In contrast, the NPV uses all the differences between every possible IRR for a project and its cost of capital.

The evidence above shows that technology and education have a huge impact on the choices of investment appraisal. Regardless of the size modern firms are seem to prefer to use more than one technique. It is also evident that traditional methods are still in use despite their well documented disadvantages.

2.8 The impact of inflation on capital budgeting

Inflation can be simply defined as a situation where prices in an economy are in general rising over time (Lumby and Jones 2001).

Mills (1996) stresses that it is reasonable to expect that the cost of capital will increase at the same rate as the rate of inflation, and that this increase will be a multiplicative relationship. In addition, the capital budgeting process is not neutral with respect to

inflation, even if output prices rise at the same rate as costs. He argue that the higher the net working capital, the greater being the impact of inflation on capital spending.

Arnold (2005) says that inflation creates two problems for project appraisal. Firstly, the estimation of future cash flows is made more troublesome. The project appraiser will have to estimate the degree to which future cash flows will be inflated. Secondly, the rate of return required by the shareholders will rise if inflation rises. He explains that as a result the inflation has an impact on the discounting rate used in investment evaluation.

According to Hall (2000), many South African companies do not make adjustments for the inflation rate when they assess the viability of a capital investment project. Although the majority of companies use various inflation rates for different annual cash flows, it was found that nearly a quarter of companies do not make adjustments for inflation. He stressed that the feasibility of a capital investment project should not only be determined by evaluating the expected rate of return which will be generated by such a project, but that the risks which will have an impact on the outcome of such an investment decision should also be addressed.

Arnold and Hatzopoulos (2000) say that inflation increases the uncertainty and makes more difficult the forecasting of the future cash flows relating to sales income, operating cost and working capital requirement.

2.9 Qualitative Factors in investment appraisal

Qualitative factors assess non financial benefits/costs which could influence the probability of a project investment. Arnold and Hatzopoulos (2000) acknowledge that capital budgeting decision needs some heroic assumptions to be made regarding, for instance, an asset's life or cost saving ability but they maintain that the influence of qualitative analysis may become important than quantitative analysis.

Seitz and Ellison (1999) report a survey which was conducted on 427 hospitals in America aiming to determine whether qualitative factors are being considered in capital budgeting. The results show that over 95% of those hospitals indicated that they always include qualitative factors in their capital budgeting decisions. When asked to rank qualitative factors in order of importance, facility need, physician demand and community need were ranked the three most important. They argue that an organization can use its resources to pursue non-financial goals through the best allocation of resources.

Chandra (2001) credited qualitative factors with an important role to play on business including capital budgeting. He says that in making a decision, an organization's executive apply several factors including the following:

- Intuition
- Organization vision
- Sponsorship

Pycraft et al. (1997) describe good quality products and services to mean higher customer satisfaction and hence customer loyalty to the organization's product and services. They note that good quality performance in an operation set up means that attribution of quality characteristics will lead to:

- Cost reduction – fewer mistakes will mean less correction time.
- Increases dependability and the internal satisfaction and it will lead to a stable and efficient organization.

According to Vertin (1991), a successful organization is one that consists of talented people who like and respect one another. They also share deeply held convictions and a simple and intelligent investment philosophy. Communication is highly emphasized within and outside the organization in relation to the organization's objectives. He says a successful organization is also built around the talent of its staff and it allows intellectual disagreement and interaction among its members but insists upon mutual respect.

2.10 Cost of capital

Harris and Marston (1992) say that one of the fundamental decisions that every business needs to make is to assess where to invest its funds and to re-evaluate, at regular intervals, the quality of its existing investments. The cost of capital is the most important yardstick to evaluate such decisions. It is the hurdle rate for investment projects determined by the composition of the firm's capital structure.

Mott (1997) states that if we accept that capital is not free, then firms are required to earn a rate of return on their investment, at least equal to the rewards that will satisfy the mix of owners and financial institutions.

The cost of capital is an average of the returns required by the various providers of capital to the business, weighted according to the proportion of capital coming from each source (Seitz *et al.*, 1999). It is sometimes defined as the opportunity cost of all capital invested in an enterprise.

Marx (2003) et.al state that the firm's WACC is a key input into the investment decision, therefore a firm should only make an investment if the expected return is greater than its WACC. They urge that the acceptance of projects should start with those which have the greatest positive difference between the IRR and the WACC.

Correia et. al (1991) state that to estimate a firm's cost of capital, a financial manager should identify all the permanent and non-temporary sources of finance employed by the firm, estimate their individual costs and combine the component costs to arrive at WACC.

Bruner (1999) finds that WACC is the dominant discounting rate used in DCF analyses and weighting is based on market, not book value mixes of debt and equity.

Arnold, and Hatzopoulos (2000) conclude that cost-of-capital estimates based on average realized returns are "unavoidably imprecise". They identify three potential problems with risk premium computed from past realized returns: (a) difficulties in identifying the right asset pricing model, (b) imprecision in the estimates of factor loadings, and (c) imprecision in estimates of factor risk premium.

Pocock et.al (1991) surveyed one hundred and twenty six companies listed under the industrial sectors of Johannesburg Stock Exchange. Questions were based on cost of capital measurement techniques. The results show that 62% of the respondents indicated that current liability is considered a non-permanent sources of finance. 22% of the respondents considered retained income to have no cost, which is in conflict with financial theory. 35% of the respondents used a specific source of finance to estimate the company's cost of capital.

2.10.1 Cost of Debt

Marx et. al (2003) state that the cost of debt capital is what the firm must pay (stated as a percent per year) to the purchasers of its (new) bonds or holders of its debt. According to Ryan, (2004) a firm needs to know the rate of return that creditors require in order to calculate the average rate that it should achieve on its own internal investment in new ventures and projects. Pike and Neale (2003) note that the cost of debt is equivalent to the actual or imputed interest rate on the company's debt, adjusted for the tax deductibility of interest expense.

2.10.2 Cost of Equity

According to Lumby, (1994), the cost of equity capital is the minimum expected return required by shareholders from the investment of their funds by the company's management, hence it is the composition of ordinary shares, preference shares and retained earnings.

A company's cost of equity capital can be estimated in two different ways. It can be estimated either by using the Capital Asset Pricing Model (CAPM) or the Gordon's Growth Model (GGM).

2.10.2.1 The Capital Asset Pricing Model (CAPM)

The Capital Asset Pricing Model (CAPM) describes the relationship between risk and expected return and postulates that the expected return of a security or a portfolio is given by the rate on a risk-free security plus a risk premium. The CAPM formula can therefore be used to estimate the rate of return required by shareholders in a firm; in effect, its cost of equity (Marx et al, (2003); Pike and Neale,(2003)). The CAPM formula is:

$$ER_j = R_f + \beta(ER_m - R_f)$$

Where:

- ER_j is the expected return on a stock j, R_f is the risk free rate, β is the volatility of the stock relative to the market, and ER_m is the expected return on the market

(a) The Risk Free Rate

Damodaran, (2001) states that the determination of an appropriate risk-free asset whose return can be used as the risk free rate is hampered by the absence of an asset without default risk and reinvestment risk. He elaborates that in the absence of such an asset, government securities are often used as proxies as the risk of default on them is lowest.

(b) Duration of the Security

There is some debate as to which government security to use; Damodaran (2001) prefers the life of the asset's cash flows with the security in a duration matching strategy. Others such as (Pike and Neale, (2003); Power, (2004)) see the shortest dated security as the best

risk-free equivalent. The reason for this is that the short maturity of the security protects the investor from interest-rate risk.

2.10.2.2 The Gordon's Growth (Dividend Growth) Model (GGM)

According to the Gordon's Growth (Dividend Growth) Model (GGM), the required return for a shareholder in a publicly quoted firm is given by:

$$k_e = \frac{D_1}{P_0} + g$$

Where:

D_1 is the expected dividend in the following year, g is the expected rate of dividend growth and P_0 is the current share price

Pike and Neale, (2003) note that the accuracy of the model is dependent on three factors: that the company pays a dividend, the growth rate of the dividend is fairly constant and that the growth rate of the dividend is less than the cost of equity

2.10.3 The Comparable Accounting Earnings Model or Return on Equity method

A third method of estimating the return on equity used primarily in banks and financial institutions is the Return on Equity method or the Comparable Accounting Earnings Model. The cost of equity capital is calculated as the average of the last five years return on equity (ROE) measures. ROE is defined as:

$$ROE = (1 - tax) \left[ROA + (ROA - interest\ rate) \frac{Debt}{Equity} \right]$$

Where, **ROA** is the return on assets, **the interest rate** is the average borrowing rate of the debt, and **equity** is the book value of equity (Green *et al.*, 2003). They state that the

rather lengthy version of ROE helps focus attention on the firm's debt-to-equity mix and the interest rate on its debt, which are essential in forecasting future ROE values.

They add that the ROE method could be criticized because it assumes that the return on equity is constant over time, that the firm is not allowed to raise equity by issuing new shares and that it is also based on the book value of equity.

2.10.4 Cost of depositor's funds

Should depositor's funds be considered in cost of capital calculations? (Koch and MacDonald, (2003); Mason, (1979)) think so, given the relative importance of deposits in capital that banks use in order to make a profit. According to Hughes and Mester, (1997) capital in financial institutions serves an altogether different purpose compared to other firms and is not just used to create wealth for shareholders. Banks use the capital they raise to produce risky, illiquid assets (loans) while transforming them into safe, liquid claims (demand deposits) that their creditors can use to make payments. Demand, credit risk and liquidity risk give capital a significant role in preventing episodes of financial distress, liquidity crises, cushioning loan losses preventing insolvency and regulatory intervention. Increased levels of capital signal to depositors that their deposits are safe and reduce the probability of a liquidity crisis, especially for non-diversified banks. Ediz *et al.* (1998) also prove that when bank capital ratios approach the regulatory limits imposed by regulators, they raise more capital instead of shedding loans.

Unlike firms in other industries, banks and financial institutions have an additional source of capital in the depositors' funds. Funds solicited from depositors, including the government, are listed in financial institutions' balance sheets as liabilities, and as Mason (1979) shows, it is possible to classify these into a great number of classes and subclasses such as credit rating, maturity, location of borrower and type of industry.

Koch and MacDonald (2003) suggest that the equation below can be used to determine the cost of bank deposits:

Historical net cost of bank liabilities =

$$\frac{\text{Interest expense + non-interest expense - non-interest income}}{\text{Average balance net of float x (1 - required reserve ratio)}}$$

Mason (1979) gives a similar calculation, namely:

Marginal costs =

$$\frac{\text{Interest rate + servicing costs + acquisition costs + deposit insurance costs}}{1 - (\% \text{ of funds in required reserves and float})}$$

2.11 Investment appraisal in the context of balanced scorecard

Kaplan and Norton (1992) developed the concept of the balanced scorecard. They define it as a way of checking what steps need to be taken throughout the organization to make the company's strategy work. They were concerned that the traditional measures of company performance field to provide adequate guidance to management operating in a rapidly changing and increasingly competitive businesses environment. They believe that their framework can help top management to select a set of measures that provide an integrated look at a company.

They suggest four groups of measurable items (=four scorecards).

1. The financial scorecard contains the traditional financial performance measures. The company should set financial goals and select a limited set of financial measures.

2. The customer scorecard deals with the question "how do customers see us?" Again, goals are set and measures are selected.

3. The internal business scorecard provides goals and measures concerning the internal operations. The underlying question here is "what should we excel at?"

4. The fourth scorecard deals with the innovation and learning perspective. Can we continue to improve and create value?

They claim that the balanced scorecard encourages a shift from financial based evaluation techniques to strategy and vision. This is as a result of the balanced scorecard needing substantially more input from the top management than does the traditional techniques. Traditional techniques in most cases are designed and overseen by financial experts. They stressed that the balanced scorecard forces management to take a broad view on the investments. They cite this as one of the main advantages of this method. Another advantage is that many different evaluation techniques can be integrated into the framework. The financial scorecard can, for example, contain the ROI, NPV or any other (adjusted) ratios. A further advantage is that the framework can be used for the feasibility evaluation and also for the follow up and ex-post evaluation.

Milis and Mercken (2004) warn that, there are some disadvantages and pitfalls when using the balanced scorecard for the evaluation of investments. First of all, there are probably no generic measures that fit all organizations. Metrics must fit a specific organization's goals, activities and customer base. Secondly, when using the balanced scorecard for department purposes, the perspective might be too narrow if the scorecard is just seen from a concern department perspective. The customer perspective is reduced to the perspective of the internal users and the financial perspective might come to be interpreted as: How does a certain department appear to senior management? A view that is too narrow can jeopardize the strategic fit.

To illustrate the use of the balanced scorecard, Milis and Mercken (2004) included an interesting example in their article on an information technology-company using the balanced scorecard framework to select a number of metrics and to set a number of targets for top management.
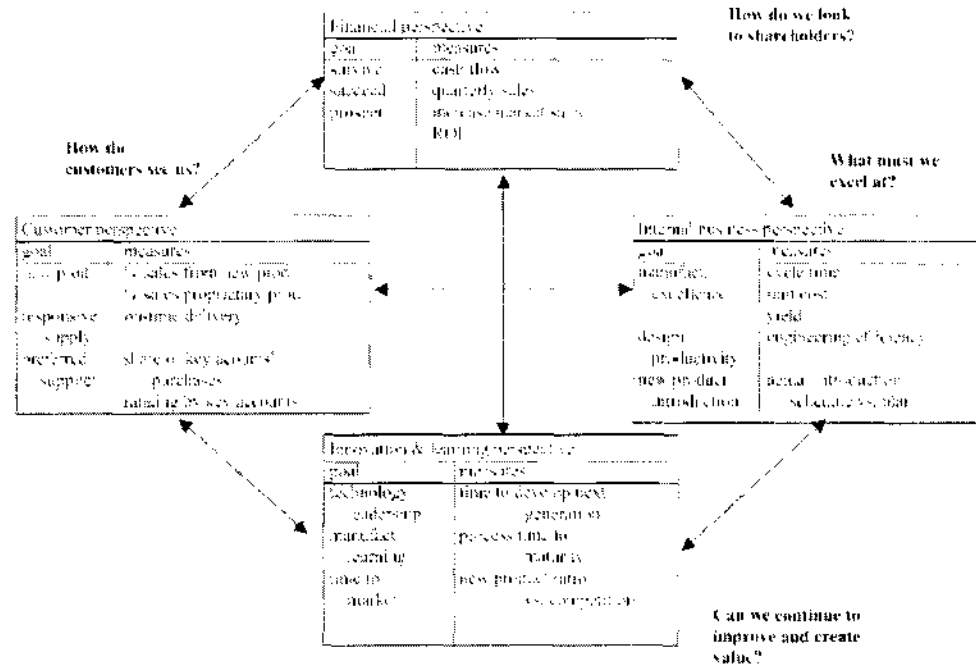
Source: Milis and Mercken (2004)

When looking at this method more closely, one can conclude that this framework is a mixture of (traditional) capital budgeting techniques and new evaluation methods. On the one hand, the (traditional) finance based evaluation techniques are not abandoned (financial perspective). On the other hand, the metrics used in a balanced scorecard framework are aligned to the company's strategy and business aims, which stimulate a strategic fit.

2.12 Conclusion

The firm's future is mostly determined by current investment decisions, thus capital budgeting decisions are important. Capital budgeting provides the analysis and evaluation of investments in term of their impact on the firm's value. It is important that a correct

capital budgeting technique and a reliable investment appraisal is used in carrying out investment decisions. Finding appropriate cash flows to include in a project appraisal often involve difficulty in data collection and require some thoughtfulness in applying the concepts of incremental cash flows. The key point on determining the relevant cash flows is that only cash flows which are consequences of the investment decision should be considered. Inflation will impact on the discount rates and future expected cash flows and therefore it must be taken into account in the capital budgeting decisions. Cost of capital has a crucial role to play in the investment appraisal and therefore huge attention should be given to it.

The observation that is emphasized in many studies is the tendency for decision makers to use more than one technique. Another observation from the literature is that small and medium sized firms are less likely to use more sophisticated formal procedures than their larger brethren. Empirical evidence certainly indicates an increase in the use of more sophisticated appraisal techniques and this could be the result of the availability of financial software There is also an indication in the literature that while some methods have superior theoretical justification, other simpler methods are used for purposes such as communicating project viability and gaining commitment through an organization. In light of preceding evidence best practice would be the use of DCF techniques (IRR and NPV) to appraise investments. The NPV measure should be a prime as it gives an absolute measure: the larger the NPV, the more value will be added to the project. Balanced Score Card tends combines qualitative and quantitative information.

The next chapter documents and outlines the methodology used in this research.

CHAPTER THREE: RESEARCH METHODOLOGY

3.1 Introduction

This chapter outlines the methodology used in the research. It begins with the type of the research. It provides a brief description of the Namibian banking industry. Sample selection, types and sources of data are documented. It also provides a full explanation of the questionnaire design. The final part of the chapter highlights ethical issues, tests of validity and methods of data processing.

3.2 Types of research

The research is concerned with how management deals with investment appraisal in practice and explanations were required. Consequently, this study is qualitative in nature. In line with the objectives of this study qualitative research was the most appropriate type because, it makes easy to perform an in-depth analysis on the current investment appraisal practices. According to Rubin and Rubin, 1995 (cited in Ulin et al., 2002), qualitative data collection refers to a process of bringing what one wants to learn together with what one observes and with what participants know and have experienced (Ulin et al., 2002; Maykut and Morehouse, 1994). Mason (1996, cited in Ulin et al., 2002) highlight that qualitative research is concerned with how the social world is interpreted, understood, experienced, or produced.

Qualitative research enables the exploration of a phenomenon in the light of related social, cultural, political, and physical environments of the people being studied (Ulin et al., 2002). It generates knowledge of social events and processes by understanding what they mean to people, exploring and documenting how people interact with each other and how they

interpret and interact with the world around them. Valuing natural settings, one of the principles of qualitative research, helps researchers understand the lived experiences of people.

The qualitative research process is flexible, emergent, and iterative. The study design is never fixed; there is constant interplay between design and discovery and findings emerge continuously. The investigator is always in touch with the research process, observing how participants respond to the topic and examining data for fresh insights that might lead to altering a technique, modifying questions, or changing direction to pursue new leads. It therefore enables the researcher to be in partnership with the participant, working together to explore and find answers. Furthermore, as the researcher listens, interprets and responds to the participant, he/she becomes a key instrument, not only absorbing information but also influencing how it is elicited (Ulin et al., 2002).

3.3 Research Approach

This research evaluated the investment appraisal practices by Namibian banks. In order to obtain results which can be generalized on the banking industry, a survey approach was adopted. The survey was chosen to enable the researcher to compare investment appraisal practices in the Namibian banking industry. Survey method is one of the ways of approaching business research problem and has a number of merits over the case study and other methods (Ulin et al., 2002). Survey questionnaires were designed to capture data on different issues ranging from appraisal to project progress evaluation.

3.4 Description of the population

The full set of cases from which a sample is taken is called the population (Saunders et al. 2003). According to Stead and Struwing (2001), the survey method of data collection requires that the population being studied should be accurately described. They say the population can be defined in term of elements, units, extent and time.

According to the Bank of Namibia (2004), the Namibian financial industry is relatively well developed in terms of institutions and instruments. Like most developing countries, the financial system is made up of formal and informal sectors. The formal sector consists of a central bank, commercial banks, development financial institution, savings bank and insurance companies and a stock exchange, while the latter comprises mainly of the micro lenders. The Namibian banking industry comprises of four commercial banks (Bank Windhoek, First National Bank, Standard bank and Ned Bank) with a total of 105 branches as at 31 March 2004. The distribution of these branches is heavily skewed in favor of urban, with only a few branches located in rural areas. The population was thus companies which registered with Bank of Namibia as commercial banks.

3.5 Sample selection and sample technique

Stead and Struwing (2001) note that sampling procedures for qualitative differ from quantitative studies in that random selection and generalisability are not of primary consideration in qualitative research. Qualitative research focuses primarily on the depth or richness of the data and therefore qualitative research generally selects samples purposefully rather than randomly. In other words, the participants show certain characteristics that the researcher is interested in. Struwing and Stead (2001) stress that the sample selected must be representative of the studied population because the reliability of survey data depends on the care taken in selecting a sample. They say if a sample is chosen according to sound scientific guidelines and if that sample is truly representative of the population, the finding from the sample can be safely generalized to the entire population. They add that obtaining information from a sample is often more practical and accurate than obtaining the same information from an entire universe or population. However, Saunders et al (2003) argue that for some research it is possible to survey an entire population if it is of a manageable size.

This study focused on investment appraisal practice by commercial banks operating in Namibia. At the time of the study (2006), there were four banks and they were all

considered. Three of the banks have got asset book value over five billion. In addition, all the banks have got annual capital budgets of more than 200 millions on average.

One may use the quantitative sampling techniques such as randomization and stratification, in qualitative research. However, there are many sampling strategies which can be used in qualitative research. In this study, critical case sampling strategy was used. Saunders et al (2003) define critical case as sample selected because they are central to the issue being studied. People or sites that will provide the most information are critical cases and are particularly useful if a small number of cases can be sampled.

The financial managers of these companies were presented with questionnaires concerning the projects appraisal processes and techniques used by their organizations. To enrich the study, the financial managers were also asked about their methods of determining the cost of capital. The four banks have been operating in the sector for many years and have been facing very similar categories of business risk as well as a similar economic environment. The financial managers were preferred on the basis that they are the ones who are accountable for their capital budgeting.

3.6 Sources of data

Information used in this study was obtained from both secondary and primary sources and was collected as follows:

3.6.1 Secondary sources
Useful information was collected electronically and manually from various publications such as textbooks and journals.

3.6.2 Primary sources

According to Ulin et al. (2002), three primary methods form the foundation of qualitative data collection: observation, interview, and group discussion. The qualitative method that was employed for this study is the interviews with the financial managers of the banks. Interviewing has a wide of forms and a multiplicity of uses. The most common type of interviewing is individual, face-to-to face verbal interchange, but it can also take the form of face-to-face group interviewing, mailed or self-administered questionnaires and telephone (Ulin et al. 2002). The primary data used in this study were collected by means of a self-administered questionnaire. The participants were presented with the questionnaire which they completed in the absence of the researcher

Struwing and Stead (2001) state that interviewing can be structured, semi structured, or unstructured. A structured interviewing was adopted in this survey. Structured interview comprise a set of formal questions that are based on theory, research, and sometimes experiences of the interviewer (Ulin et al. 2002). The questions are formally structured in that wording is not altered from one participant to the next. This enables comparison to be made between the participants, something that is not is easily obtained in the other two interview methods. However, Struwing and Stead (2001) note that the disadvantage of a structured interview is that it does not enable the interviewers to probe for further data or allow the participant to provide information not covered in the interview. Interaction between the interviewer and the interviewee is thus constrained with little room for elaborate responses.

3.7 Design of the questionnaire

Struwing and Stead (2001) stress that if one decides to collect data by asking questions, a standardized form or questionnaire to record all responses is needed. They mention that questions could generally be designed by interviewing people to determine the content area or by consulting the literature. In this study, the questions were designed by consulting the

literature and to maintain the interest of the respondent. According to Saunders et al (2003), the validity and reliability of the data collected and response rate achieved depend, to a large extent, on the design of the questions. They say a valid question will enable accurate data to be collected and one that is reliable will mean that these data are collected consistently.

In this study, a questionnaire consisting of twenty-one questions was used. The questionnaire was divided in two parts. The first part consisted of eight close-ended questions focused on the demographic information of the participants and the second part consisted of open-ended questions covering crucial areas in the investment appraisal process as determined by the objective of the study.

The managers were asked questions regarding current appraisal techniques which their organizations were using. The questions on current appraisal techniques were useful in establishing which techniques were mostly used in the industry. The managers' perception on techniques could also be detected.

The management of all banks was asked to document how they determine cost of capital which is an essential input for most of the appraisal methods. This was aimed at determining whether the banks determined the cost of capital in the same manner as non financial organizations.

Projects risk assessment question was formulated to assess if the management were managing risk as per theory recommendations. The purpose of this question was to establish which risk minimizing techniques were commonly used at the industry level.

It was considered crucial to set questions which would require the managers to highlight non-quantifiable information which they took into account when they performed investment appraisal. The information obtained from this question was used to determine whether the non-quantifiable information had an influence in the selection of investments.

The managers were also asked to express their views on the existing techniques. The objective of this question was to determine if the managers were satisfied with the ability of the existing techniques to assess their project. Finally, the managers were required to propose alternative appraisal methods which they thought could remedy the shortcomings of the existing methods.

3.8 Questionnaire distribution

The questionnaires were physically distributed to the banks two weeks before the appointment day for collecting in order to give enough time for the discussion among the management who are involved in capital budgeting. Some managers were very busy and they were unable to determine how long it could take them to complete the questionnaire. In those incidences telephone follow-up was used to find out whether they were done.

3.9 Ethical issues

Conducting research is an ethical enterprise. Struwing and Stead (2001, page 74) refer to ethics as "a system of morals, rules of behaviors". They say research ethics provide researchers with a code of moral guidelines on how to conduct research in a morally acceptable way. Such guidelines seek to prevent researchers from engagement in scientific misconduct, such as: distorting and inventing data, plagiarizing the work of others, republishing their data as an original contribution without proper acknowledgement, failing to maintain the confidentiality and privacy of research participants, Forcing people against their will to be involved in research, not executing a study properly, deceiving people and falsely reporting results (Saunders et al 2003).

In this study, all the participants voluntarily agreed to take part in the study. They were well informed about their right to decline to take part or to withdraw any time during the study. Permission to conduct the research in the companies' premises was obtained from the

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participants. In the effort to avoid plagiarism, all other people works used in this study have been referenced.

3.10 Test of validity

According to Struwing and Stead (2001) validation is the degree to which one can rely on the concepts, methods, and inferences of a study, or tradition of inquiry, as the basis for our own theorizing and empirical research. They say validity needs to be considered in qualitative research. Validity in qualitative research is a contentious issue in which some authors query usefulness of validation from a qualitative perspective. They maintain that there are no widely accepted guidelines for testing validity in qualitative research.

In the effort to avoid bias of the results interpretations in this study, confirmation letters were obtained from all the participants. (See Appendix B) In the letter, the participants were required to judge and agree or disagree with a summary which was drawn from the information which they provided regarding the investment appraisal practices in their organizations.

3.11 Analysis

According to Struwing and Stead (2001) data analysis in qualitative research is less discrete than that found in quantitative research. They advise that before attempting to analyse the data, one must ensure that all the field notes, interview transcripts, and documents are available and complete. Furthermore, they say the interview transcripts should not be rephrased.

Interviewees wrote down all their answers. A considerable amount of time was spent reading the transcript and developing themes according to the study objectives and items covered in the interview guide.

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Data obtained from the key informant interviews was mainly used to guide some of the study recommendations. Thematic analysis was used for the analysis of the study findings. Hayes (2000) asserts that thematic analysis involves identifying particular themes which occur in the material. These themes may emerge from the data as it is being analysed, taking the form of recurrent statements, attributions or assumptions which people make. Alternatively, the themes may have been determined before the analysis began, and the analysis may consist of identifying statements which relate to them. This type of thematic analysis is theory driven, and allows the researcher to use this kind of qualitative analysis to test specific hypotheses and ideas. It involves first sorting information into themes. Themes are recurrent ideas or topics which can be detected in the material which is being analysed, and which come up on more than one occasion in a particular set of data. This method is said to be original, and probably the most straightforward method of all the different qualitative techniques. Hayes (2000) points out, however, that because the data are qualitative, often taking the form of interview, the information can vary a great deal. Thematic qualitative analysis involves the researcher searching diligently through the data in order to identify these themes. As a result, thematic qualitative analysis is almost always a long and tedious process (Hayes, 2000). This is because there is really no way of reducing the data and still retaining the scientific rigour which is needed for research. Therefore, conducting a full qualitative analysis can be a lengthy process.

The process involved in thematic qualitative analysis according to Hayes (2000) begins with the preparation of the data. This is done in such a way that the researcher can return to them over and over again. In the case of interviews, this almost always means transcribing them so that the researcher can use a transcript of the results. Once the data has been prepared, one can begin to identify themes. In inductive thematic analysis, themes emerge from the data collected (Hayes, 2000).

In an inductive thematic analysis, the second stage of the research (after the data preparation stage) consists of reading carefully through all the data, and noting down any items of interest or other bits of information which seem to be relevant to the research topic. This is done separately for each transcript. At this point, the themes have not yet emerged.

What the researcher is dealing with are specific items of information which seem to have some relevance to the topic which is being investigated. The third stage involves sorting out these various bits of data, and it is here that the themes begin to emerge. Items which appear to be dealing with similar topics are placed together literary, if the researcher is using paper records, or electronically in a computer system, the piles which develop as a result of this sorting process represent the themes which will form the basis of the analysis. At this stage, though, they are not the themes in their final form. Each pile represents the beginning of a theme which will develop and change as the analysis proceeds. The researcher now has to take each pile separately and examine it to see exactly what each theme is. The theme will have to be given a provisional name. Once the above has taken place, the researcher then needs to take the themes, one at a time, and go through each of the transcripts again. Each one is carefully reread, to see if it contains anything which is relevant to the theme which the researcher is currently exploring. Once this second 'trawling' of the data has been completed, the researcher is in a position to take each theme and construct its final analytical form. This has three parts (a) a name, or label for the theme, (b) a definition of the theme, (c) the third part is the data which are relevant to the theme. In case of the interview data, this will consist of quotations (Hayes, 2000).

After all questionnaires were collected from the participants valuable time was spent in reading the transcripts. The information from respondents was than classed according to the themes. In this study, themes were developed in line with research objectives.

3.12 Limitations

The major limitation to this study was the accessibility of the individuals with relevant information and experience. They were very busy and those they had minimal amount of time to attend to the questionnaires. The confidential nature of the information, especially on the shortcomings of the procedures had an inhibiting effect due to competition among the banks. No document from any of the banks was collected or revised and, as a result, the research depended only on the information provided by the participants. The size of

the population made it impossible to use statistical measurement in analyzing the data. Time was also a big limitation.

CHAPTER FOUR: DATA PRESENTATION

4.1 Introduction

This chapter documents the responses as received from the participants. At the end of this chapter, a summary of investment practices is drawn. Due to confidentiality, the real names of the banks are not revealed. Instead, banks are identified as B01, B02, B03 and B04. No analysis is done in this chapter as the analysis will be done in chapter five.

4.2 Documentation of results

1. Back ground of the respondents

The survey has benefited from the knowledge of the financial expertise of the respondents (financial managers). All of the managers hold a post graduate degree in a finance related field. All of them completed articles and three of them are Chartered Accountants. It is believed that a high proportion of highly educated participants increase the reliability of the research. Three of them have been in the banking industry for more than five years and have at least two years experience in their current project related positions.

2. Which appraisal techniques does your company use in appraising investments?

B01 applied different techniques based on the situation at hand. B02 preferred NPV and some times it used IRR. B03 mostly uses NPV and occasionally Payback Period. B04 uses both NPV and IRR simultaneously. In the case of mutually exclusive projects, it relied more on NPV results and the reason given was that NPV reflects the viability of the project on cash merit. At B04 it was believed that a project with a positive NPV would always lead to a reasonable IRR.

3. Which is the primary technique(s) and why did you choose it?

B01 and B03 had no prime technique. B01 stipulated that different scenarios required different approaches and as a result they did not have any prime technique in place. The management at B03 stated that they did not have a primary technique; their decision to use NPV or Payback was always determined by the nature of the project and a given situation. B02 used NPV as a prime technique and they articulated that it was easier to explain the logic of NPV to the board of directors, since some of them were non-financial. What matters to the board is the amount to be paid and income to be generated as result of the under taken project. B04 stated that it was easier to compare the IRR of the project to the firm's cost of capital

4. If your company is using Discounting techniques (IRR, NPV or Discounted Payback), briefly explain how your company determines its cost of capital.

All four banks had different approaches to cost of capital. B01 determines its cost of capital by taking into account shareholders' expectations (25% return on their investments), cost of funds, liquid assets in its balance sheet and minimum reserve balance as required by Bank of Namibia. B02 used CAPM to determine cost of owner's equity. It used bond rate (10yrs) to determine risk free rate and its beta was close to one. The management based risk free and beta benchmark on the South African market because the Namibian market is illiquid. B02 does not include current accounts when determining WACC. For the cost of debt B02 used average cost of funds. After the determination of component cost the WACC was always computed. B04 used only average cost of funds to determine its cost of capital.

5. Does your company use the same techniques for both tangible (e.g. Building) and non-tangible (e.g. software) investment decisions?

B04 used the same techniques for tangible and non- tangible assets. They said using one technique would enable them to ensure that all projects selected met the benchmark

(return higher than or equal to the average cost of capital). B01 said for non tangible investment decisions they used "must be done" in order to stay in the market. They added that it was not an easy job to assess the viability of most intangible investments (e.g. Research and Development) projects and as a result they based their decision on the rule of thumb rather than on specific models. At B02 evaluation of major projects such as the acquisition of a building or extending the existing one was outsourced and external evaluators were entitled to use techniques of their choice. For intangible investment decisions, B02 used NPV and some times IRR. The management said it could be a coincidence whereby the external evaluator was also using the NPV and IRR. B03 maintained that it was not easy to use one technique due to the level of competition in the industry.

6. Besides quantifiable information, what other facts do you take into account when you are performing the appraisal?

The management of all the banks indicated that it was important to asses the impact of the investment on their competitive position. B01 stated that economic outlook could have a major impact on the decision to be taken and therefore it must be taken into account. At B02 market perception and customer needs were the essential facts. The management said if you were aware of your customer needs then you woud make a healthy decision and reduce marketing risk. They stated that one should only invest in new products if there was a demand for them. B03 considered impact on market share, growth of the geographical area and impact on customer services as crucial non-quantifiable input on investment decisions. They preferred to choose an investment which would help them to acquire more market share. They argued that the existence of the firm was mainly dependent in customers' satisfaction, thus investing on projects which would improve clients services would gave them a competitive advantage among their rivals. They had adopted a strategy of taking business to people rather than people to business and as a result they saw it important to ensure areas with high populations such as cities were given preference. At B04 economic factors and political stability could have a major influence on investment decisions. The management said issues like inflation and

currency fluctuation could have a negative impact on projected results. On the other hand, one may take an immeasurable risk by investing in a project which is in a country with political instability. They said even if the results which were provided by capital budgeting techniques were favoured, such a project should be rejected on the ground of country risk.

7. How do you assess the impact of inflation into capital budgeting?

The banks ensured that inflation was taken care of. B02 included the inflation into their prime rate. B04 also adjusted the inflation into its prime rate. The management noted that inflation mostly impacted on operating expenses and they dealt with that by adjusting services fees. B03 stated that inflation was taken into account when projecting the operating cost and incomes. B01 used Pack graphs on asset growth vs market growth to estimate the inflation.

8. Do you ensure that the appraisal techniques used are aligned with the organization's strategic objectives?

All four institutions ensured that appraisal techniques used were aligned with organizational strategic objectives. B01 indicated that it was a task number one to ensure that the resources of the organization were used to contribute toward achieving its vision. The management at B02 said the future of the organization was dependent on the investment decisions and as a result it was very crucial to ensure that the right techniques which supported the long term goal of the business were deployed in the selection of investments. BO3 said failing to ensure that the techniques which your organization was using were aligned with the overall objectives of the firm might lead to wrong decisions. They said that only investment which would contribute toward achieving the strategic goal of the business should be considered. B04 stressed that one of their criteria in selecting investment appraisal technique was its ability to help the firm in striving to achieve its goals.

9. Does your company practice centralized or non-centralized investment appraisal decision?

B01 and B02 practised both centralized and non-centralized investment appraisal decision-making while B03 and B04 practised only centralized. At B01 only decisions which had impact on the overall performance of the firm were done at head office. All branches were entitled to prepare their capital budgeting (with strong motivations) and present them to the board for approval. The financial manager said the branches were in a better position to identify their investment need than someone sitting at head office. On the other hand, conflicts of interest on resourses allocation could be avoided. B01 had a cut off amount on the decisions which could be done at branch level. They said that this amount was mainly dependent on the decision at hand and the type of asset to be acquired. For example, all branches could replace a broken computer without informing the head office; however, if the decision was to replace all the old computers then approval should be obtained from the head office. B03 said that by using centralized capital budgeting they could ensure that the resources of the firm were allocated accordingly and that only the investments which were contributing to the firm's value had been considered. They noted that the system might be time consuming but it provided excellent controlling mechanisms. The board was always aware of all investments under consideration. B04 stressed that centralized systems enabled them to align all of the capital investment decision with the overall organizational strategic goals. They said capital budgeting was a specialist task and therefore it should be performed by knowledgeable people. And as a result of limited skilled people especially in the field of finance, the branches were unlikely to be in a position to perform their own capital budgeting. B04 said it was easier to manage risk on a centralized system.

10. How do you assess and control project Risk?

Risk assessment was found as a basic component of the investment appraisal process in all four banks. At all banks, managers were risk averse and were striving to ensure that only minimal risk was taken. They used combinations of qualitative and quantitative

techniques in assessing risk. B01 assessed risk through a committee called "Enterprise Wide Risk Management"(ERM). ERM unit enabled the bank to manage its risks proactively as well as to align its business to international banks' practice. The committee was responsible for identifying all kinds of risk which might be associated with the project and registering them into the risk register. All risks which were identified would be assigned with the probability of occurring as well as possible mitigations actions. The register was reviewed on a regular basis and actions were taken for rectification when necessary. B01 used budgeting as a tool to control profitability risk of the project. The actual results were always compared to the budgeted amount and differences were reconciled. On the other hand, auditing was carried out to ensure that all investment decisions were in line with the initial plan. The auditing committee was obliged to inform the board about any risk noted and give advice on how such risk should be combated. B03 had established a risk management team. They used time line and critical paths as tools of minimizing risk. Critical path helped them to identify the relationship between the activities and establish the sequence in which activities must take place. The management mentioned that time estimates were fundamental to all decisions and no exception to the investment one. It was stressed that having no idea of how long each part of the project would take, would make it impossible to define what should be happening at any time during the execution of the project. At B04 risks were managed through a comprehensive framework encompassing infrastructure, policies and methods that supported active and effective control as well as compliance with regulations laid down by the authorities. Techniques such as sensitivity analysis and probability were used during the planning stage. However, during the implementation, they paid more attention to timeliness of activities.

11. How often does your company monitor the project progress?

Frequency	B01	B02	B03	B04
1-6 months	X	X	X	X
7-12 months				
Yearly				
Over a year				

All the banks show that it is vital to monitor the project more frequently. B02 stated that monitoring the project monthly allows them to deal with deviations more easily.

12. What are your company's criteria factors for project failure/ success determination?

B02 mentioned that the profitability and strategic fit were the most important indicators of the project viability. They always used NPV to estimate the project profitability. B01 used ROE to determine the failure/success of the project. B04 used the project objectives as a measuring factor. At B03, cash flows, break even analysis, contribution (revenue-direct cost) and fixed cost determined the project viability.

13. Do you think investment appraisal techniques provide hard and fast decisions or they should just be used as a guide in the decision making process?

It was evident from the responses that investment appraisal techniques did not provide hard and fast decision rules. Rather, they were used as a guide. B01 said appraisal techniques were part of investment decision process and they were not operating in isolation. B02 supported the ideas of B01 and they added that it would be shortsighted to use the results of the techniques alone without taking into account other crucial facts like the capacity of the organization and actions by competitors. B03 emphasized that the acceptance of any investment decision should not only be based on financial viability but the strategic goal of the business should also be considered. They said that the results

which were provided by the appraisal techniques should be used to do further research on the favoured project. The management said by ignoring issues such as the impact of the project on human resources requirements and market maximization might lead to a wrong choice. B04 articulated that it would be unjustifiable to invest in a project which was in place with high political risk even if the results of the appraisal techniques supported that project. They said the management should gather additional information to justify their decision. All companies showed that it was necessary to ensure that the decisions which were taken were helping the company to achieve it strategic objectives.

14. Does your company have a documented investment appraisal process in place?

B01 and B04 had no documented investment appraisal process in place while B02 and B03 had. B01 said in a dynamic business environment, having a documented procedure would force you to run the firm in a conservative way forgoes valuable opportunities and restrict incentives of your staff. They believed it was easier for them to adjust to any given situation if they were not complying with a certain procedure. B04 stated that the pace at which technology was changing made it unrealistic for someone to benefit from a process based on a past generation. They stressed that it would be very expensive and untimely to update the documented investment appraisal process. On the other hand, B02 said documented investment appraisal process would make it easier to evaluate the implementations of the projects and for management of risk. They used the written process as a yardstick to measure actual implementation of the projects. They said this guideline made it easier to detect and correct mistakes while the project was still running. B03 articulated that the documented procedure provided direction and helped to maintain uniformity in appraising their investments. They said all staff knew what was expected from them and who they should consult for approvals. B03 said their documented procedure helped them to realize the dream of sharing one vision in the whole group.

15. Do you apply uniform methods from the start to the end of the project?

All four institutions said that they used the same techniques(s) from the beginning till the end of the project. B01 stated that they only used techniques at the planning stage to help them to select investment options. On the other hand, B04 said changing a technique in the middle of the project would require new information and it was time consuming. B03 argued that techniques were tools which used to select a right investment option among other options and it would be unrealistic to bring them into the picture once the project was commenced. They said if it could happen that a new technique was to be used in the middle of the project misleading results might be obtained. The result obtained by using a new technique could end up supporting the option which was foregone when the first appraisal was conducted.

16. Do you think that the existing investment appraisal techniques are fitting to the nature of the banking industry?

B01 and B03 said the current techniques were not fitting to the nature of the banking industry while on the other hand, B02 and B04 had no problem with the existing techniques. B01 said it was difficult to allocate operating cost and income to some of the projects. For example, one cannot quantify with certainty the increases on net income as a result of the new software and at the same time you cannot quantify the operating cost of a new brand. B03 stated that the current techniques totally ignored qualitative information and therefore they could give misleading guides. The nature of the industry required the decision maker to take into account the needs of their clients when they were executing capital investments. On the other hand, B02 maintained that there was no major difference for capital budgeting in the banking industry and other industries. A decision to replace a fixed asset (motor vehicle) in the banking industry could be treated in the same manner at a mining company. Thus if the same techniques were used elsewhere and were working, then, they were reliable. B04 said they were satisfied with the current techniques. They urged that one should always bear in mind that the capital budgeting

techniques were just guidelines. They mentioned that even if new techniques could be developed, the input would still be based on human judgments.

17. If the existing techniques are not appropriate, what do you propose?

There were no suggestions from B02 and B04. B01 indicated that the key success factor in the banking industry was client services, thus a technique which could assess the impact of the investment decision on the clients services would be a solution. They said most of the investments in the banking industry were in the form of loans and therefore new techniques which could help the managements in establishing creditworthiness must be developed. B03 suggested the current techniques should be modified to accommodate both qualitative and quantitative input. They emphasized that qualitative facts had a vast role to play on investment decision making and thus they must considered.

4.3 The summary of investment appraisal practices in the industry.

Table 2: Summary of investment appraisal

Practice	B01	B02	B03	B04
Investment appraisal methods	No special technique	Mostly NPV and some time IRR	Mostly NPV and some time Payback	NPV and IRR
Prime methods	-	NPV	-	IRR
Cost of capital determination	CAPM and Average cost of funds	Average cost of funds	Average cost of funds	Average cost of funds
Uses of the same technique for both tangible	Use variety methods	Not always	Not always	Always use the same method

and non-tangible investment decisions				
Qualitative information considered	Competitors action and economic outlook	Market perception, competitors, customer needs	Competitors, impact on market share & customer services, population growth	Competitors, economic factors and political stability
Alignment of appraisal techniques with organization objectives	Always aligned	Always aligned	Always aligned	Always aligned
Investment decision making	Centralized and non centralized	Centralized and non Centralized	Centralized	centralized
Project risk analysis	Extensive review of projects	Budgeting and auditing	Time line and critical path	Sensitivity analysis & probability at &Timely on the progress
Assess of inflation	Adjusted in the prime rate	Adjusted in the prime rate	Dealt with at budgeting stage	Dealt with at budgeting stage
Project monitoring and control	monthly	With in 1-6 months	With in 1-6 months	With in 1-6 months
Project success	ROE	Profitability	Cash flows,	Project

or failure determination		and strategic fit	break even analysis and contribution	objectives
Should appraisal techniques used as guide?	Guide	Guide	Guide	Guide
Is there documented appraisal process?	No documented appraisal process	There is documented appraisal process	There is a documented appraisal process	No documented appraisal process
Uses of uniform methods from the beginning – end of the project	Yes	Yes	Yes	yes
Do the current techniques fit into the nature of the banking industry?	They are not fitting	They are fitting	They are not fitting	They are fitting
What is your proposal?	A method which can access the ability of clients to repay the loans	No comment	A model which take into account both qualitative and quantitative data	No comment

CHAPTER FIVE: DATA ANALYSIS AND RESULTS

5.1 Introduction

As shown in chapter 4, all companies perform a thorough investments appraisal process. Two of the banks have working manuals and detailed procedure guidelines while the other two have no guidelines in place. This chapter presents a detailed analysis and discusses the main findings obtained from the survey. The similarities and differences between the findings of this study and other related studies are highlighted.

5.2 Investment decision-making

One of the major tasks of project management was to select a project(s) that maximizes the objectives of a company. It has been shown that each bank performs a thorough investment appraisal process. Half of the banks have working manuals and detailed procedure guidelines. In this study, two out of the four banks practise centralized investment decision only while the other two practise both centralized and none-centralized. The banks argued that a centralized system provides incentive for managers of the organization so as to make value-maximizing choices. In these companies, project initiation and execution is continuous throughout the year. And in every company a number of projects are running simultaneously. However, the process of project decision-making varies across companies. Similar to the finding by Akalu (2003), in each company, the responsibility and authority of project decision is made either by a higher echelon of the company or shared among the lower level managers.

The means of sharing this responsibility is based on either the amount of money that a project requires (size of spending) or the life span of the project. In some cases, the output or capacity level of a project is also used to share such responsibility. One of the companies share the decision-making authority and responsibility based on project size as

measured in terms of money. This result is similar to the findings of Harris and Reviv (1998).

5.3 Techniques applied in the industry.

Project appraisal techniques help to compare benefits against costs of a project so as to determine acceptability and to set a ranking order among competing projects. Some of these techniques use accounting profit as a measurement of profit and some use project's cash flow.

Selection of capital budgeting methods varies across project types and firms. Similar to the finding by Akalu (2003) the data shows that DCF (IRR and NPV) techniques are the most used in the industry. Only one of the banks is using traditional methods (Payback). Three out of four banks are using NPV and one bank is using it as a prime technique in its capital decisions. One of the banks did not have a specific technique for appraising its investment; rather, it applies different techniques based on the given situation.

At variance with the finding by Pike (1996), only one of the four firms preferred to apply combined methods. Others use one at a time. In previous research, such combination was reported between DCF methods and accounting based models such as payback period and sometimes between DCF and value based model. However, the combination which was reflected in this study was within DCF techniques.

Similar to the finding by Pike and Neale (2003), in most instances, the use of NPV and IRR is a matter of personal preference. Different managers have different perceptions of NPV and IRR.

"NPV- It is better to use and it can be explained better to the directors. Since some of them are non financial, what matters to the board is the amount to be paid and income be generated" (Reason for choosing prime technique, B02)

"IRR because it is easy to compare to the cost of capital" (Reason for choosing prime technique, B04)

These statements clearly indicate that management is not taking into account the merit of the techniques they employ, but they tend to be more concerned with the ability of explaining the result of the technique to board members. Unlike the findings by Akalu (2003), there was no tendency of companies to combine the DCF models with the newly emerged value management techniques. In fact none of the banks mentioned the new value management techniques. One can argue that managers are not willing to change from traditional techniques.

Divergent to other research findings (Boer (2000); Benaroch et. al (1999); Adler (2000)) that some companies are using real options, EVA and MAV in an attempt to rectify the problems of traditional investment appraisal techniques, those methods were not used. None of the companies has even mentioned real options as a tool to assess the viability of its investments.

"We always use the same techniques – Changing a technique in the middle of the project will require new information and it is time consuming" (Reason for using the same technique through out the project life, B04)

All banks demonstrated that they use the same techniques from the beginning to the end of the project. They argue that if one uses diverse measurement on the various stages of a project, it could be difficult to monitor whether a project adds value to the firm or not and is time consuming. It could also be hard to reconcile the output generated by various models such as DCF. Logically, changing a technique might require the management to re-evaluate all the options. Thus it could be costly and might end in misleading results; however, this might not always the case. One should remember that the business environment is dynamic and a certain circumstance may force management to re-examine their decisions. If such a case happens, a new technique might be needed to be deployed in order to turn around the prevailing situation.

"Failing to ensure that the techniques which your organization is using are aligned with the overall objectives might lead to wrong decision" (Aligning of techniques with organization objectives, B03)

"the future of the organization depends on the investment decisions and as a result it is very curtail to ensure that the right technique which support long term goal of the business are used in selection of investment" (Aligning of techniques with organization objectives, B02)

In line with the conclusion by Gilbert (2005), all of the four banks ensured that the appraisal techniques which they used are aligned with the overall strategic objectives of the organization and they all indicate that the appraisal techniques are just used as a guide. This evidently indicates that investment decision are made strategically and not purely based on the mathematical results which are provided by appraisal techniques. The main points remains that investment decisions are the determinant of the future existence of the business. Thus making an investment decision in isolation will definitely risk the going concern standing of the firm. The question here could be that, how often does the management refine the objectives of the firm and what terms does it use to establish the relationship between the technique used and the firm objectives.

"Current techniques should be modified to accommodate both qualitative and quantitative input" (opinions on the existing techniques, B03)

"A technique which could assess the impact of the investment decision on the client services would be a solution" (Suggestion of ideally technique, B01)

Two of the banks are satisfied with existing techniques and consequently they did not give any suggestion of a new model or of an improvement on the existing techniques. On the other hand two of the banks have doubt about the performance of the existing appraisal methods. This is similar to the findings by Boenhakker (1975) and Damodaram (2001). One bank stressed that it is not always easy to allocate costs and benefits to some of the projects. Since the inputs of the standard techniques are measured in monetary value then they will of no help if the cost of the project cannot be allocated with certainty.

The other bank which is questioning the ability of the standard techniques to correctly assess the projects viability argues that these techniques ignore qualitative information. According to their suggestions, a model which can accommodate non-financial information could be more appropriate. This indicates that management realizes the imperative role which qualitative information could play in the investment decision making. In addition, one bank upholds that a model should be able to assess the impact of the investment decision on client services. Technically this could be based on the nature of the banking industry and all other services industries. The significant key success factor in the banking industry is impressive customer services and as a result sometimes banks perform their capital budgeting decision on "the must be done" basis. The challenge to management in the services industry could therefore balance the impact of the investment decision on its operations and the profitability of the undertaken project.

Generally, managers are not totally satisfied with the current appraisal techniques. They are suggesting that a model which can take into account both qualitative and quantitative information, and which could assess the impact of the investment decision on the client services should be developed. Based on this, a Balanced Score Card seems to be the nearest model to meet the criteria required. Kaplan and Norton (1992) claim that balanced scorecard encourages a shift from financial based evaluation techniques to strategy and vision and it requires more input from the top management than do the traditional techniques. Traditional techniques in most cases are designed and overseen by financial experts. They stressed that the balanced scorecard forces management to take a broad view on the investments. By employing this model many different evaluation techniques can be systematically integrated into the framework. Therefore, it is recommended that the management of the banks should consider using Balanced Score Card as a tool for evaluating their investment decisions. However, a proper training of staff is needed.

5.4 Projects Risk Management

Risk is one of the fundamentals of overall project management and there is no exception for investment appraisal. The practice of handling project risk varies from company to company as it does from project to project. In this study, companies are analyzed for their methods of risk examination and ways of incorporating into a project. All of the four banks have risk control systems in place. However, no specific model of risk handling is stated in the survey. This matches the finding by Akalu (2003). Although in the survey companies did not state in detail the type of models they used, both qualitative and quantitative tools have been used in their practices.

"We are using budgeting as a tool to control the profitability risk of the project" (Risk control, B02)

"Time line and critical path are used as devices of minimizing the risk" (Risk control, B03)

There was no correlation in dealing with risk among the banks in the industry. Every bank has its own unique way to deal with risk on projects. None of them evaluates the intensity of project risk after project execution. In an effort to manage inflation risk, the banks add the estimated inflation rate to the discount factor. This method of incorporating inflation risk into the discounting fact may not fully identify the effect of project risk on the value of a project.

Contrary to some research findings such as those of Arnold (2005), traditional methods of risk management (Sensitivity analysis, scenario analysis, probabilities, etc.) are not widely applied in the industry. Instead, banks use time line, critical path and extensive review of project as alternative tools of assessing risk. Only one of the banks mentions that it uses sensitivity analysis and probability during the planning stage. Two of the banks consider time as a critical tool in minimizing risk while one bank uses extensive review of projects to monitor and rectify project risks. Budgeting and auditing were also mentioned as methods of combating risk. The results show that three of the banks talk

about risk management at organizational level rather than at individual project level. It is doubtful if the banks do review the extent of project risk while the projects are in progress.

It is recommended that the management of various banks should consider uses of relevant technology to track and monitor the risk throughout the entire project life. This will lead to a reduction in the possibility of manual mistakes and aid in the reconciliation of process flows. Process flows need to be audited and re-engineered regularly to identify and rectify weakness. It is also important that there are management teams that disseminate knowledge and information throughout an organization and which independently review technology (computer software) to ensure that all changes occurring are properly dealt with. Risk management can only be robust when it is based on strong and well-articulated risk disciplines that permeate the entire organization.

5.5 Project success or failure determination

Determining project success or failure is one of the issues commonly raised by stakeholders of a project. In most circumstances, the process is made at the stage of project completion. However, the yardstick against which success or failure is measured raises a question of ownership and authority. A project work comprises a number of stakeholders and functions that have got the right to set standards to measure project performances. For instance, the Finance group may use the rate of return on investment (ROI) as measurement of financial performance. Similarly, Engineers may apply a metric to test technical competence and completeness of the project. Furthermore, the Environmentalists may also apply the 'greening' standards, and so on.

Listing and categorizing critical factors into manageable units will be useful if and only if the management has its own criteria to judge. Hence, it is indispensable to have a full-fledged standard of measurement for projects with identified factors of success or failure.

"ROE of 20%-25% is required for a project to pronounce itself as successful" (Determination of success/failure, B01)

"Profitability, strategic fit and positive NPV" (Determination of success/failure, B02)

In this study, three out of four companies apply financial measures only, while the remaining one applies overall project objectives to designate success or failure of a project. Basically, management are using the result obtained during the initial assessment of the project. it is not clear if there are assessments done during the life span of the project. In general, all of them emphasize the importance of financial yardstick in the determination of the success or failure of projects.

5.6 Cost of capital in the banking industry

Unlike firms in other industries, banks have an additional source of capital in the depositors' funds. Funds solicited from depositors are listed in financial institutions' balance sheets as liabilities. In this survey, more than 80% of banks' capitals are in the form of debts and that has lead to three companies ignoring the cost of equity in their WACC.

This research shows that there is a similarity in determination of costs of capital among the banks in the industry. Correspondingly with the finding by Koch and MacDonald, (2003); and Mason, (1979) all four banks used average cost of funds to determine their cost of capital. Three of the banks did not indicate how they determine cost of equity. However, one bank shows that it uses CAPM to determine cost in it cost of its owner's equity. None of the four banks ever used Dividend Growth Model. One bank indicated that beside average cost of funds it also considers its shareholders expectations in determining its WACC. The application of constant cost of capital across time and projects, observed at all four banks, is opposed to the basic rule of risk and return, as all projects do not have the same risk; thus the use of stable cost of capital may lead them to accept a risk project that reduces the value of the firm.

5.7 Qualitative factors taken into account

"Competitors action and economic outlook" (B01)

"We consider impact of the decision on market share, growth of the geographical area, position of our competitor and customer services" (B03)

The survey shows that at banks the management always takes qualitative factors into account when they are carrying out their investment appraisal. All four banks indicated that it is important to asses the impact of the investment on their competitive position. Other qualitative factors which were mentioned are: economic outlook and factors, impact on the market share, population growth, impact on customers' services and market perception. Two of the banks regard the impact on customer's services as essential input in investment decisions. The argument is that the customers dictate the existence of the firm and therefore their needs should be properly dealt with. Failure to consider non financial information may lead to wrong decisions.

5.8 Project progress monitoring and control

As stated by Akalu (2003), managers have realized the effect of project control. The issue of progress assessment can be divided into frequency of monitoring and method of evaluation. These two activities are important for complete project control procedure. Monitoring frequency is the number of times that a project is assessed during its life span. In this regard, the higher the frequency the earlier that management fixes any project-related problem before it gets worse. This reduces the likelihood of project value discrepancy.

As evidenced from the survey, companies are not clear between progress reporting and progress assessment. The former is simply reporting the progress of operating activities. These reports may contain information regarding budget versus actual comparison of

finance, time and schedules. However, the real essence of progress evaluation or assessment is referring to the continuous measurement and comparison of the project actual value against the expected outcome and the eventual corrective decision-making for any variation.

Only one of the four banks reports its projects on a monthly basis, the other three report their projects progress once in six months time. Methods of reporting however vary among companies. Two of them report the variation in cost, schedule and time of a project.

CHAPTER SIX: CONCLUSION AND RECOMMENDATIONS

The challenges facing managers making capital investment decisions are immeasurable. This study assesses the current practices of capital budgeting in a holistic manner, including subsequent follow up to the stage of commissioning. It examines the capital budgeting practices in the Namibian banking industry. The paper focused on how the banks perform investment appraisal, subsequent follow up and measurements of project success or failure. This chapter is used to test if the research objectives have been achieved. During the study, the following major findings emerged:

- Both centralized and decentralized investment decision making are practised in the industry.

- The survey affirms that the DCF are widely used, with NPV being the most used. IRR is the second most used while only one out of four banks is using Payback method as a support technique.

- Most of the banks used only one technique at a time. Since all of techniques have their negative points, it is safe to say that reliance on a sole technique may lead to sub-optimalization or even failure. It is recommended that management should start to use a mixture of techniques; this will help in eliminating or diminishing the weaknesses of each of the techniques used.

- Uniform methods of evaluation were applied across all stages of the projects, which will make it easy for the comparison of the project's value at different stages. It will also be easy to reconcile the output generated by various models.

- The banks used a combination of qualitative and quantitative techniques to ensure that only minimal risk is taken. A homogeneous finding in risk management was that all banks add the estimated inflation rate in their discounting facts.

- Project progress reporting is a common practice among banks, but not a real assessment and eventual control based on the assessed results. This approach may favor unviable projects despite their performance result, which may lead to drain the assets of a firm. Therefore management must take it as a challenge to

implement control based on the assessed result, this will reduce the chance of value discrepancy; and, hence improve the company's' performances.

- The average cost of funds is found to be the main determiner of the companies' cost of capital.

- It was observed that companies apply a constant cost of capital across time and projects. This approach of using the linear cost of capital may lead to the acceptance of projects that reduce shareholders' value and may increase the cost of risk, as not all projects contain the same amount of risk. It is recommended that management must re-calculate the firm's cost of capital for each project under taken and it should also revisit the initial cost of capital during the duration of the project.

- The study reveals that investments are chosen in line with the objective and strategies of the companies. It was indicated that failure to align the investment appraisal techniques with the firm's objective may lead to the wrong investment being chosen.

The firms' investments appraisal practices are generally acceptable. The result indicates that there is no strong tendency of using more than one technique. There was no indication of shift from traditional and DCF appraisal methods to the new generation of value management models. This leads to the conclusion that the application of traditional investment appraisal methods is far from over. In practice, issues such as compliance with company regulations and timeliness of the activities are crucial to risk management. On the other hand, theory emphasized risk management to deal more with quantitative factors and no attention is given to qualitative factors. Although research in capital budgeting suggests the use of quantitative models for non-tangible (research and development) investment decision, the application is not commonly practiced. On the contrary, banks relied on qualitative and non-standard approaches.

Areas of future research

As emerged from this study, investment areas are chosen in line with the objectives and strategy of a firm. Research into what techniques the firms are using to measure the achievement of these objectives could be very interesting. The type of metrics could range from industry best practices to accounting ratios and market related information measures. One could also investigate to what extent the non-financial information influences the decisions of capital budgeting.

APPENDIXES

(A) Research instrument (Questionnaire)

Permission to use my response for academic research

I hereby give permission that my responses may be used for research purposes provided that my identity is not revealed in the published records of the research.

Initials and Surname:_____Postal

address:_____

_____Contact

number:_____

Signature:_____

Section A: General information

1. Date

    : ....

2. Institution

    : ....

3. Respondent First

Name : ....

4. Respondent

Surname   : ....

5. Position in
Organization : ....
6.
Department   : ....
....
7. Qualifications
              : ....

8. What is your experience in investment appraisal?

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Section B: investments appraisal practice

9. Which appraisal technique(s) does your company use in appraising investments?

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10. Which is the primary technique(s) and why did you chose it?

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11. If your company is using Discounting techniques (IRR, NPV or Discounted Payback),
briefly explain how your company determines its cost of capital.

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12. Does your company use the same techniques for both tangible (e.g. Building) and non-tangible (e.g. software) investment decisions?

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13. Beside quantifiable information, what other facts do you take into account when you are performing the appraisal?

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14. Do you ensure that the appraisal techniques used are aligned with the organization's strategic objectives?

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15. Does your company practice centralized or non-centralized investment appraisal decision?

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16. How do you assess and control project Risk?

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17. Do you think investment appraisal techniques provide hard and fast decisions or they should just be used as a guide in the decision making process?

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18. Does your company have a documented investment appraisal process in place?

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19. Do you apply uniform methods from the start to the end of the project?

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20. Do you think that the existing investment appraisal techniques are fitting to the nature of the banking industry? (please explain)

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21. Related to 20, if the existing techniques are not appropriate, what do you propose?

....

....

....

(B) LETTERS FROM PARTICIPANT ORGANIZATIONS

Bank of Namibia
71 Robert Mugabe Avenue
P.O. Box 2882. Windhoek. Namibia
Tel: +264-61-283 5111
Fax: +264-61-283 5228

Bank Supervision Department

Ref. nr.: 11/2/1

3 August 2006

Mr Fillemon Iyambo
Private Bag 4802
Windhoek
Namibia

Dear Mr Iyambo,

COMMERCIAL BANKS IN NAMIBIA.

Reference is made to your query regarding the number of commercial banks in Namibia.

We are pleased to inform you that four commercial banks are operating in Namibia which are as follows: Bank Windhoek Ltd, Nedbank Namibia Ltd, First National Bank of Namibia Ltd and Standard Bank Namibia Ltd.

I hope you find this in order.

Sincerely,

T Shiimi
SENIOR MANAGER

To Whom It May Concern:

I am here to testify that our company agreed~~disagree~~ with the summary drawn by the researcher from the information that was provided.
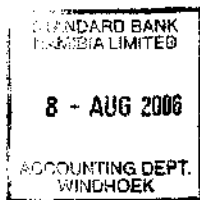
Name of the Bank .....*Bank Windhoek*.....

Name of the responder .....*Philip Steyn*.....

Signature of the responder .....*[signature]*.....

Date .....*8/8/2006*.....

Official stamp

To Whom It May Concern:

I am here to testify that our company agreed/~~disagree~~ with the summary drawn by the researcher from the information that was provided.

Name of the Bank .... *Standard bank NAMIBIA*

Name of the responder.... *Aufodf*

Signature of the responder .... *SUP vw McTlwr* *HEAD of FINANCE*

Date *5/8/06*

Official stamp

STANDARD BANK
NAMIBIA LIMITED

8 - AUG 2006

ACCOUNTING DEPT.
WINDHOEK

To Whom It May Concern:

I am here to testify that our company agreed/~~disagree~~ with the summary drawn by the researcher from the information that was provided.

Name of the Bank ....First National Bank of Namibia....

Name of the responder....Justus Hausiku & Michelle van Wyk....

Signature of the responder ....~~[signature]~~....

Date ...08 August 2006....

Official stamp
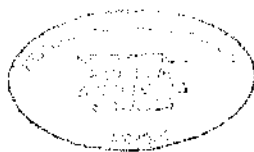
To Whom It May Concern:

I am here to testify that our company agreed/~~disagree~~ with the summary drawn by the researcher from the information that was provided.

Name of the Bank .... *Wedbank* ....

Name of the responder..... *KS Alberman* ....

Signature of the responder ...... *~~~~~* ....

Date .... *8/9/16* ....

Official stamp

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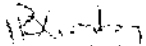MR. FN IIYAMBO (204503502)
GRADUATE SCHOOL OF BUSINESS

Dear Mr. Iiyambo

ETHICAL CLEARANCE APPROVAL NUMBER: HSS/06845A

I wish to confirm that ethical clearance has been granted for the following project:

"An evolution of the investment appraisal practice in the Namibian Banking Industry"

Yours faithfully

MS. PHUMELELE XIMBA
RESEARCH OFFICE

cc.   Faculty Officer (Christel Haddon)
cc.   Supervisor (Prof. S Lubbe)