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Full Length Research Paper

A survey of capital budgeting techniques used by listed mining companies in South Africa

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Capital budgeting is crucial in the maximisation of shareholder value as it depends on the capital budgeting decisions made by the managers. The capital budgeting techniques used by South African mines listed on the Johannesburg Securities Exchange (JSE) and the reasons behind their use were investigated. Questionnaires were conducted during the period of March to May 2011 to gather data. The results also indicated that the net present value (NPV) (69%), the internal rate of return (IRR) (46%) and the payback period (PB) (23%) are the most common techniques used to evaluate major projects. The main reason for the use of the NPV was its superiority as it accurately takes into account the time value of money. The IRR method is used owing to its ability to rank projects and to indicate the actual return of each project, thereby informing managers whether an investment will increase the company's value. The results indicated that the continual use of PB was based on the simplicity of the technique. Financial officers (FOs) should also make use of other techniques for example, discounted payback period (DPB), profitability index (PI) and the real options which are of valuable in determining the feasibility of projects.

Key words: Capital budgeting techniques, net present value, internal rate of return, payback period, mining companies, South Africa.

INTRODUCTION

Based on the rapid change in technology, successful mining companies may need to be strategically positioned to take advantage of the changes in operating conditions. There is a need for the companies to achieve greater operational efficiency taking into consideration the limited resources which they have. One of the most important challenges which today's managers face is the allocation of the company's limited resources between existing operations and new projects, hence the need to make use of capital budgeting techniques in evaluating valuable projects. In this regard, capital budgeting is a plan to finance long-term outlays, such as fixed assets like facilities and equipment (Shim and Siegel, 2008). The process of capital budgeting is mainly concerned with issues which range from the purchase of replacement equipment up to developing a new business or a new product (Emery et al., 2007).

Mines in South Africa play a vital role in enhancing the country's economic growth and creating employment (Mabena, 2009). The contribution of the mining sector in South Africa to the gross domestic product (GDP) in 2008 was estimated at 8.6 and 6% of the workers were employed in the formal sector of the economy (Mabena, 2009). Capital budgeting decisions are vital for a company's growth and productivity. According to Viviers and Cohen (2011) long-term decisions taken with caution may result in the growth of the business and also in the maximisation of shareholder value. The improvement of shareholder value, therefore, largely depends on the investment decisions that corporate managers make. Many companies have undergone financial hardship and even bankruptcy due to wrong capital budgeting decisions being made.

According to Gilbert (2005), the increasing capital intensive nature of modern production methods necessitates careful consideration in the selection of

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methods and processes used for investment appraisal. Since mining investments require a huge capital layout (Erarslan and Celebi, 1999), the finding and subsequent application of a reliable method of investment appraisal in the present time is not only a matter of concern for the managers of a company, it is also increasingly important to the shareholders (Akalu and Turner, 2002).

Several studies have demonstrated the importance of capital budgeting practices as a tool for evaluating the feasibility of possible investments in the corporate world (Mao, 1970; Pandey, 1989; Lefley, 1996; Maccarrone, 1996; Graham and Harvey, 2001). A number of studies have also been conducted on this subject in South Africa (Lambrechts, 1976; Andrews and Butler, 1986; Hall, 2000; du Toit and Pienaar, 2005; Gilbert, 2005; Correia and Cramer, 2008; Hall and Millard, 2010; Olawale et al., 2010). However, these studies either analysed practices of large companies or all sectors whereas the study reported on in this paper is concerned specifically with South African mining companies.

Capital budgeting practices of South African mines as a result of the previous studies might be poorly known and not even well researched. Andrews and Butler (1986) did a survey which was limited to large industrial and mining companies in South Africa. Although their research included mining companies, the study was not detailed enough, as the reasons behind the use of the selected methods were not highlighted. The research of du Toit and Pienaar (2005) was also limited to a review of the capital budgeting behaviour of large South African companies. Therefore, a survey based on the capital budgeting techniques employed by mining companies was identified as a need.

This study focused on capital budgeting practices adopted by South African mining companies. The mining sector has been selected because of its contribution to the country's GDP; and this sector is involved in large projects which are capital intensive in nature. It is of paramount importance to investigate how the FOs or decision makers in this sector evaluate their projects. Therefore, the purpose of this study was to establish which methods are commonly used in practice by mining companies in South Africa in making capital budgeting decisions and to elicit the reasons for using selected capital budgeting methods.

The paper is organised as follows. Subsequently, a discussion on previous studies on capital budgeting is presented, after which the methodology used in this research is explained. This is followed by a presentation of the results of the survey. Finally, the paper is concluded.

LITERATURE REVIEW

The literature review is based on South African studies and international studies.

South African studies

Capital budgeting decisions are amongst the most important decisions the financial manager of a company has to deal with when setting out to maximise shareholder value. Capital budgeting has been described as the formulation and financing of long-term plans for investment (Olawale et al., 2010). Several techniques are available which financial managers may use in evaluating investment projects. Amongst other these are NPV, IRR, PB, DPB, PI, the average accounting rate of return (ARR) and real options.

Table 1 portrays a summary of previous research on capital budgeting practices based on South African data. Some key points can be identified from the earlier South African studies listed in Table 1 as follows:

1. The most common techniques for South African companies were found to be ARR, PB, IRR and NPV and these remained popular until (roughly) 1986.
2. The use of ROI was seen to be most popular in the studies done by Hall (2000) and Hall and Millard (2010).
3. IRR and NPV remained the most popular techniques used by South African companies since 1976 up to 2010. The usage of ARR did not expand much in South Africa from 2005 to 2010.
4. The use of IRR was seen to be associated with the capital intensity of companies. Since NPV has been rated more superior in this selection of studies, it may be reasonable to expect that managers will use it more frequently.
5. Although Correia and Cramer (2008) reported that few CFOs use real options, Baker et al. (2011) indicated that real options is a method to be applied during high levels of uncertainty.

The selection of ROI as the most popular capital budgeting evaluation technique (Hall and Millard, 2010) is in line with the results of previous research on South African companies by Hall (2000). The participants indicated that they usually use capital budgeting techniques when evaluating the following projects:

1. Expansion of existing projects,
2. Expansion of new projects,
3. Foreign projects,
4. Abandonment of projects,
5. General or administrative projects, and
6. Social projects.

A study which was done by Olawale et al. (2010) involving small manufacturing companies in South Africa revealed that most companies surveyed do not use sophisticated methods when evaluating their projects and is in line with the results of an earlier study by Andrews and Butler (1986).

From the brief summary of previous research on

Table 1. Previous research on capital budgeting practices based on South African data.

References	Population of study	Characteristics	Methods used
Lambrechts (1976)	100 top quoted companies (1971) Financial Mail	Large number of assets and number of employees (evaluating investment projects).	ARR, PB, IRR, and NPV
Andrews and Butler (1986)	Leading South African largest industrial and mining companies	One firm in every twenty.	No capital budgeting techniques
		However, there are frequently used techniques.	PB, ARR, NPV, PI and IRR.
Hall (2000)	65 Respondents	1. Capital intensive companies	IRR
		2. Low capital intensive companies	ROI
du Toit and Pienaar (2005)	Financial director of each company listed on the JSE Securities Exchange ("JSE") 524 companies.	Companies engaged in large capital outlays.	IRR
Correia and Cramer (2008)	Companies listed on the JSE Securities Exchange in 2006.	1. Primary methods used by the chief financial officers (CFOs).	NPV and IRR
		3. Usage reduced significantly compared to prior years.	PB and ARR
		3. Few CFOs use.	Real options
Hall and Millard (2010)	South African industrial companies listed on the JSE Securities Exchange for at least ten years.	1. Most popular method.	Return on investment(ROI)
		2. Second preferred method.	NPV
		3. Third method.	IRR

capital budgeting practices based on South African data it became apparent that the techniques used range from no technique used to using a comprehensive set of techniques.

International studies

Surveys of capital budgeting practices have been reported on by different authors since the early 1960s (Miller, 1960; Istvan, 1961; Mao, 1969). In Table 2, a summary indicating the results from international surveys are displayed. The following conclusions can be drawn based on Table 2:

1. Larger companies rely on DCF and present value techniques whilst smaller companies rely mainly on the PB method.
2. NPV is a reasonable method to value passively managed projects.
3. Japanese companies use a combination of the PB and NPV
4. DCF is not recommended when there is uncertainty in the business environment.
5. Preference was also given to ARR in a study during 1961.

Meier and Tarhan (2007) reported that the use of more sophisticated capital budgeting methods is related to the CFO's education. In a later study, Brunzell et al. (2011) showed that the use of NPV as a primary method, and the sophistication of the capital budgeting is related both to the company and CFO characteristics.

METHODOLOGY

The population was chosen from companies listed in the mining sector of the Johannesburg Securities Exchange (JSE). The information about companies used in this research was obtained from the JSE website and the contact details of the financial officers were obtained from company websites by use of a Google search. At the end of 2010, a total of 35 mining companies were listed on the JSE (JSE, 2010). In order to obtain more meaningful results and to add value to the responses, all 35 companies were considered for participation in the research. All 35 companies were contacted by telephone to establish if they were interested in participating in the research.

The data for the analysis has been obtained by using the results of a survey. The survey was conducted using 20 mining companies who have shown their interest of participating in the research. A questionnaire (Appendix A) which was compiled from the comprehensive literature survey was sent to 17 financial officers with the use of email. Three companies were not in a position to fill in the questionnaire but participated in face to face interviews. The questions asked during the interviews were the same as those which were used in the questionnaire. This was done to simplify the analysis of the results and to increase the validity of our results. The total response from the population of 17 amounted to 10

Table 2. Results from surveys on capital budgeting practices.

Reference	Method	Results
Schall et al. (1978) and Pike (1996)	Pay back	PB method the most desired technique.
Danielson and Jonathan (2006)		Large companies tend to rely on DCF techniques favoured by finance texts while most of the small companies evaluate their projects using the PB method or the owner's gut feel.
Prather (2009)	Pay back and discounted cash flow	Those that do utilise formal techniques, PB is the favoured method. Fewer than 10% of the sample companies use several DCF techniques.
Shinoda (2010)	Pay back and net present value	Japanese companies use a combination of the PB and NPV
Mao (1970) and Schall et al. (1978)	Net present value	Least preference for NPV.
Baker et al. (2011)		NPV is a reasonable method to value passively managed projects.
Graham and Harvey (2001) and Brounen et al. (2004)	Present value and pay back	Larger companies depend mostly on present value techniques and the capital asset pricing model, while smaller companies are mostly inclined to use the PB method.
Istvan (1961)	Accounting rate of return	Preference for ARR.
Baker et al. (2011)	Discounted cash flow	DCF is not a useful method when there is uncertainty in the business environment.
Leon et al. (2008)		Majority of the companies use the DCF techniques as the primary measure for evaluating capital investment proposals.
Hermes et al. (2007)		Dutch CFOs on average use more sophisticated capital budgeting techniques than Chinese CFOs.

questionnaires plus the three interviews held, this amounted to 37% of the whole population. Previous studies done on related subjects in South Africa yielded the following response rates.

Based on the average response rate from the previous studies it can be assumed that a response rate of 37% is good enough to come to some conclusions regarding capital budgeting practices of South African mining companies.

The questionnaire was written in English and did not require the respondents to identify themselves or their company. As a way of increasing the response rate, direct contact was made by phoning the respondents before sending the questionnaires. This was followed by a personalised email and a final reminder in case they failed to respond. The executives of all companies were assured of complete confidentiality of their responses and identity at all times.

The questionnaire consisted of open and close ended questions and was divided into three parts. The first part focused on the profile of the FO. The second part of the questionnaire consisted of general information about the organisation. The third part of the questionnaire examined the capital budgeting techniques used by the companies in the capital investment process to assess the viability of different operations.

This research used both primary and secondary methods of data collection. Data was organised and analysed using SPSS and Excel. A spread sheet showing the participants' answers was compiled and programmed

Table 3. Response rates from previous South African studies.

Study	Responding rate (%)
Lambrechts (1976)	48
Andrews and Butler (1986)	26
Hall (2000)	23.33
du Toit and Pienaar (2005)	13
Gilbert (2005)	37
Correia and Cramer (2008)	38
Hall and Millard (2010)	38
Average response rate	31.9

for use in SPSS. Since much of the data collected in this study was descriptive in nature, data was explained directly. Inconsistencies and unique statements were noted and given particular attention (Table 3).

RESULTS AND DISCUSSION

The results of the questionnaire are discussed subsequently based on the three parts of the questionnaire. The results from questions 13 and 14 were not included as part of this article.

Part 1: Decision maker profile - The profile of the company FO provides information on his/her age; academic and professional qualification; and level of experience within the company and the results from the questionnaire are portrayed in Table 4. The first question dealt with the age of the FO. Table 4 shows that the respondents fall into three major categories. These are young, middle aged and older FOs. 15.4% of the respondents fall into the young category (25 to 35 years), 61.5% fall into the category of middle aged (36 to 46 years), while 23.1% fall into the older category (47 to 57 years).

The current qualification results show that there are three groups of respondents with regard to academic qualifications. The categories are highly qualified, lowly qualified and no qualification. It was established that 84.6% of the FOs was Chartered Accountants (CAs), 7.7% had an undergraduate degree and 7.7% had no qualification.

The tenure results indicated that 38.5% of the FOs had been working for their companies for less than 4 years, 38.5% had been working for their companies for 5 to 9 years, 15.3% had been with their companies for 10 to 14 years and 7.7% had been working for their companies between 15 and 19 years. These results revealed that the majority of the respondents had the necessary qualifications and experience to answer the questionnaire. Since the majority of the respondents were CAs, they were in a position to make informed decisions on the capital budgeting processes of their companies.

Part 2: General information about the organization - The profile of the company provides information on the size of the company in terms of its annual turnover, total assets and its capital budget. The results of Part 2 are displayed in Table 5. According to the annual turnover results 38.5% of the companies had an annual turnover of less than R1 billion, whilst 38.5% had an annual turnover of between R1 billion and R10 billion. 7.7% of the companies had an annual turnover of between R11 billion and R20 billion, while 15.3% of the companies had an annual turnover above R30 billion.

The annual capital budgets of the assessed companies are categorised into two main classes, namely, R0 to R1 billion (61.7%) and more than R1 billion (38.3%). 53.8% of the companies had total assets of R10 billion and below, while 46.2% of the companies had total assets of R11 billion and above. Respondents were also required to indicate the year of incorporation of their companies. The results show that most of the companies were more than 21 years old whilst only 4 (31%) were less than 21 years old.

Part 3: Capital budgeting techniques used by the companies- The results portrayed in Figure 1 indicated that South African mines use NPV, IRR and PB. This is similar to the results of Baker et al. (2011) whose respondents ranked these three as the most frequently used capital budgeting techniques. The majority of

Table 4. Characteristics of the financial officers.

Characteristics	Number	Percentage
Age		
< 25 years	0	0
25-35 years	2	15.4
36-46 years	8	61.5
47-57 years	3	23.1
>57 years	0	0
Total	13	100
Current qualification		
PhD	0	0
MBA	0	0
Non MBA	0	0
CA	11	84.6
B. Compt. Honours	1	7.7
No Qualification	1	7.7
Total	13	100
Tenure		
0 to 4 years	5	38.5
5 to 9 years	5	38.5
10 to 14 years	2	15.3
15 to 19 years	1	7.7
Total	13	100

Table 5. Profile of the companies.

Characteristics	Number	Percentage
Annual turnover		
Less than R1billion	5	38.5
Between R1billion and R10 billion	5	38.5
Between R11 billion and R20 billion	1	7.7
Between R21 billion and R30 billion	0	0
More than R30 billion	2	15.3
Total	13	100
Annual capital budget		
Less than R500 million	7	54
R501 million- R1 billion	1	7.7
R1.1 billion- R1.599 billion	0	0
R1.6 billion - R2.099 billion	2	15.3
Greater than R3billion	3	23
Total	13	100
Total assets		
Less than R1billion	2	15.4
Between R1billion and R10 billion	5	38.4
Between R11 billion and R20 billion	2	15.4
Between R21billion and R30 billion	2	15.4
More than R30 billion	2	15.4
Total	13	100
Company Age		
Below 21 years	4	31
21 years and above	9	69
Total	13	100

mining companies in South Africa use the NPV technique in evaluating major projects (69%), followed by IRR (46%), PB (23%) and 7.7% of the respondents do not use any technique to evaluate their projects. Some of the companies relied on more than one method. One of the companies uses all three methods mentioned previously. Two companies used NPV and PB whilst the other two companies used IRR and NPV to evaluate their projects. Nevertheless, none of the companies make use of IRR and PB when evaluating major projects in their companies.

Some respondents indicated more than one technique. Furthermore, the respondents were asked to determine how regularly they use the seven capital budgeting techniques dealt with in this study. The answers were based on a five-point Likert scale: always, often, sometimes, rarely and never. To measure the responses, the ensuing percentages were attached to each alternative: “always” (100%), “often” (approximately 75%), “sometimes” (approximately 50%), “rarely” (approximately 25%) and “never” (0%). The number and the percentage of companies that used each capital budgeting technique are displayed in Table 6.

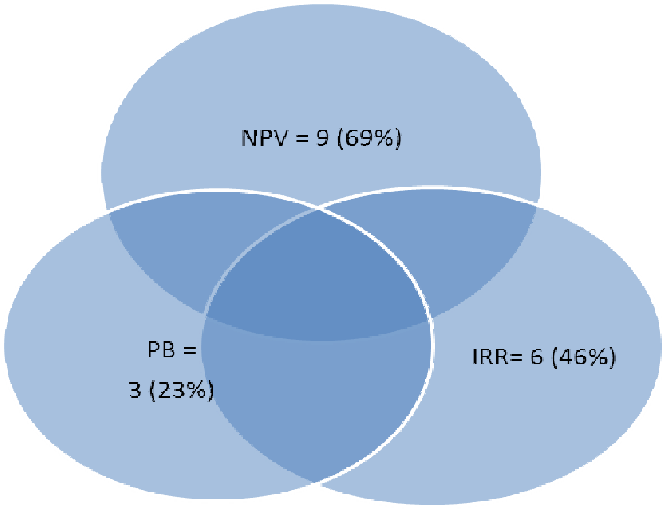

Figure 1. Venn diagram showing the capital budgeting techniques used to evaluate major investments by South African mining companies.

A score for each capital budgeting technique was calculated as follows:

Score = Σ (P x N)/ 12

where: P = the alternative percentage, N = the number of the companies using the technique, 12 = the number of companies using at least one of the evaluation techniques.

The DCF techniques are regularly used by the mining companies in South Africa with NPV attaining a score of 89.6% and IRR a score of 47.9%. The NPV was indicated as the most popular capital budgeting technique used by the mining companies regardless of its sophistication. The only non-discounted cash flow (NDCF) technique used by mining companies is the PB with a score of 17%. The outcome of these results showed that DCF techniques may be more superior than NDCF techniques. According to Drury (2004) the DCF techniques cover up all the main weaknesses of the payback and accounting rate of return and are considered the best tools for value maximisation. Therefore, the mining companies may be able to maximise their value by employing DCF techniques.

Previous research by Andrews and Butler (1986) comprising mining and large industrial companies indicated that the most popular method used was the IRR with a 45.3% rating, PB (26.5%), ARR (15.4%) and NPV (7.7%). du Toit and Pienaar (2005) found that IRR is a popular capital budgeting technique used by large South African companies. The results of the current study showed that there is a shift from the use of IRR to NPV. This shift could be as a result of managers who do not want to risk embarking on a project which is not profitable as a result of using an unreliable technique.

Table 6. Frequencies of using capital budgeting techniques by South African mining companies in evaluating all the projects.

Technique	Always (100%)		Often (75%)		Sometimes (50%)		Rarely (25%)		Never (0%)		Score
	n	P (%)	n	P (%)	n	P (%)	n	P (%)	n	P (%)	(%)
NPV	6	50	5	42	2	17	0	0	1	8	89.6
IRR	4	33	2	17	0	0	1	8	5	42	47.9
PB	0	0	0	0	4	33	0	0	8	67	17
DPB	0	0	0	0	0	0	0	0	12	100	0
PI	0	0	0	0	0	0	0	0	12	100	0
ARR	0	0	0	0	0	0	0	0	12	100	0
Real options	0	0	0	0	0	0	0	0	12	100	0

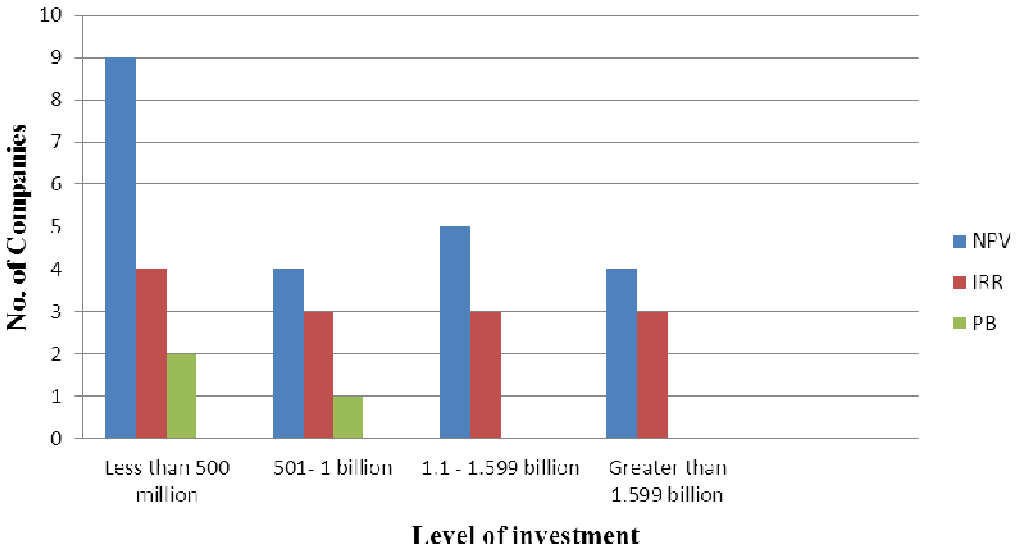

Figure 2. Use of capital budgeting techniques by South African mining companies based on level of investment.

Techniques such as the real options, DPB, PI and ARR were not mentioned as being used by any of the companies. One of the respondents indicated that the use of real options is not practicable since the life span of a mine is determined during the exploration phase and management knows well in advance how long the mining operations will last. Therefore, the maturity of the company does not make real options practicable. This is in contrast with Baker et al. (2011) who indicated that mining companies in Canada have embraced real options. Hence, there may be a need for South African mining companies to explore the tendency to employ real options as a capital budgeting technique.

Respondents were also asked to indicate the minimum level of investment in which they use the previous mentioned techniques. Figure 2 shows that for all the levels of investments, the NPV has been rated as the mostly used technique followed by IRR. PB was used on investment levels of up to R1billion. On the level of investments which are above R1billion, no company has mentioned the use of PB. These results correlate strongly with the findings of Correia and Cramer (2008), who found that the PB technique was used widely when evaluating smaller capital projects. The reason for the continual use of PB on smaller projects by other companies could be that the technique is less complex and understandable as was indicated in the responses given on the reasons behind the use of the selected technique.

Respondents were also asked to indicate the technique used when faced with different operations within the organisation. Figure 3 shows the different operations which companies engage in. PB method was used by South African mining companies in social and general administrative projects with 25 and 17%, respectively. These are projects which do not require much attention, hence this may be the reason why PB which is less complex to understand and calculate, is employed. The NPV method is usually used for all the operations; however, it is mostly used in the expansion into new

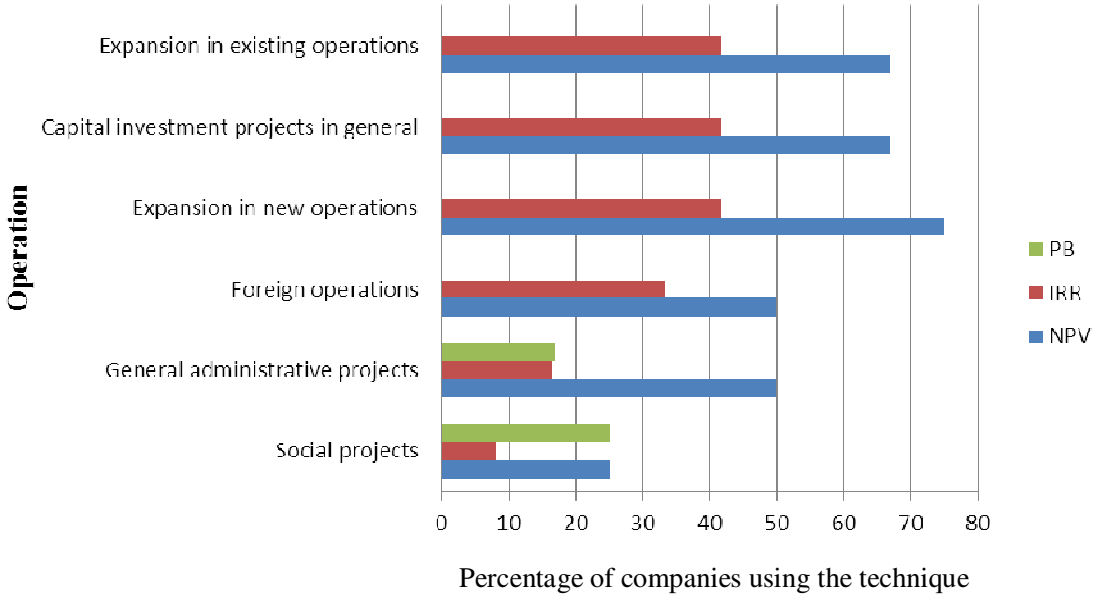

Figure 3. Techniques used by South African mining companies in assessing different operations.

operations with a 75% rating.

This technique is also used in capital investment projects in general and expansion of existing operations with 67% for each operation of the companies using it. The second most used technique in all operations is IRR with the highest ratings being in the expansion into new operations, expansion of existing operations and capital investment projects in general. Hall (2000) investigated aspects of the capital budgeting techniques used in the evaluation of different investment projects, and found IRR to be the most widely used technique. Therefore, the use of IRR as the second most employed technique by mining companies provides some support for Hall's results.

Reasons behind the use of the selected methods

Different views surfaced as the main reasons of using the selected techniques. These range from company policy to theoretical argumentation and are indicated in Table 7.

Conclusions

The main objective of the study was to find out the most commonly used capital budgeting techniques of listed South African mining companies and the reasons behind the use of those methods. In theory, capital budgeting has been seen as an important aspect for the company's growth and productivity. Managers need to take the capital budgeting process seriously to avoid exposing the company to financial problems. South African mines are involved in large projects which require large capital expenditure therefore great care need to be taken when evaluating projects.

Findings of this research showed that most of the Financial Officers are highly qualified and well experienced. The results also indicated that most of the companies that participated in this research are large companies in terms of their total assets and annual turnover. NPV was found to be the most commonly used technique by South African mines, even more than IRR. In previous studies, IRR was shown to be the preferred technique to NPV.

However, the survey indicated some remarkable results, although South African mines are making use of some DCF capital budgeting methods, there has been some reluctance by these companies to make use of modern methods such as real options. This technique is of importance to the managers because it takes into account the managerial flexibility and strategic factors which are ignored by the DCF techniques.

The main reasons behind the use of the selected method were as follows: the NPV was said to be superior since it accurately takes into account the time value of money and adjusts for risk factors; the method is used because it is in line with company policy, and it enables the company to determine the viability of the project based on the company's cost of capital. The IRR was said to be preferred because it indicates the actual return of each project enabling managers to know whether an investment will increase the company's value, it considers all cash flows of the project and takes into consideration the time value of money and it is a good device for ranking projects. The PB was thought to be a good technique because it is easy to use and understand and is usually used for small projects and it also reduces

Table 7. Reasons for the use of the selected methods by South African mining companies.

Method	Reasons
NPV	1. The method accurately takes into account the time value of money and adjustments for risk factors. 2. The method is used because this is in line with the company policy. 3. It enables the company to determine the viability of the project based on the company's cost of capital.
Summary	Accounts for the time value of money and adjusts for risk thereby enabling managers to be able to determine the feasibility of a project.
IRR	1. It enables the managers to know whether an investment will increase the company's value. 2. It considers all cash flows of the project and takes into consideration the time value of money. 3. The method indicates the actual return of each project. 4. It is a good device for ranking projects.
Summary	This method is used because managers are able to tell whether an investment is profitable based on the calculations done using all the cash flows of the project.
PB	1. It is easy to calculate and understand and is usually used for small projects. 2. Reduces costs because of its simplicity.
Summary	In brief, this method is used because it is easy to calculate and understand.

costs because of its simplicity. However, there may also be a need for South African mining companies to explore the tendency to employ real options as a capital budgeting technique.

This study found that FOs in South African mines follow practices that are coherent with the finance theory. However, further research is required to investigate the reasons behind the unpopularity of other techniques such as the discounted payback period, profitability index, real options and accounting rate of return. Also, further research is required to establish whether there is a relationship between the capital budgeting method used and the organisational and decision maker's characteristics.

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Appendix A. Questionnaire.

A survey of capital budgeting techniques used by listed mining companies in South Africa

My name is Vongai Maroyi, an MSc student at Wageningen University, the Netherlands. I would like you to help me by filling in this questionnaire which is meant to gather information on capital budgeting techniques you are using in your company. This information is only meant for studying purposes, the research will enable me to complete my Masters programme. Capital budgeting decisions determine the future success of most companies. This research is meant to highlight the capital budgeting methods used by mining companies in South Africa and the reasons behind the use of the selected methods. *Indicate your answer by putting an X in the appropriate box except for those questions which do not have an option.* Your participation in this research is voluntary, if you feel that you do not want to answer a particular question, I will gratefully accept your decision. Thank you for participating and taking your time in filling in the questionnaire, information collected is strictly private and confidential. It will not be disclosed to third parties. The questionnaire will only need about 20 min of your time. The questionnaire is divided into three parts:

Part 1 Decision-maker profile: This will give the profile of the finance officer or whoever is responsible for investments in your organisation. Please note that this part has to be filled in by the person who is responsible the investments in your company.
Part 2: General information about the organisation.
Part 3: Capital budgeting techniques used in practice.

For any further questions, please contact me on this email address: v.maroyi@gmail.com

Part 1 Decision maker profile

1. Can you please specify your educational level?

Chartered Accountant
B Compt Honours
MBA
Non MBA Masters
PhD

2. In which age group do you fall under?

Below 25 years
25 to 35 years
36 to 46 years
47 to 57 years
>57 years

3. For how long have you been working for this company?

0 to 4 years
5 to 9 years
10 to 14 years
15 to 19 years
>20 years

Part 2 General information about your organization

4. Kindly specify the year of incorporation of your company_____

5. Please specify the annual turnover (approx. In Rand) of your company for the year 2009 to 2010.

<1 Billion
1- 10 Billion
11-20 Billion
21-30Billion
>30 Billion

6. How large is the gross annual capital budget of your company?

Up to R500 million
R501 million to R1 Billion
R1.1Billion to R1.599 Billion
R1.6 Billion to R2.099 Billion
R3 Billion and above

7. Please specify the total assets which your company is in possession of?

<1 Billion
1- 10 Billion
11-20 Billion
21-30Billion
>30 Billion

Part 3 Capital budgeting techniques used by the companies

8. Which of the following capital budgeting technique (s) are used in your company for the appraisal of major investments? More than one answer is possible.

Net present value
Internal rate of return
Payback period
Discounted payback period.
Profitability index
Accounting rate of return
Real option
Other

9. Please specify the reason of using the selected method (methods), indicate the reason for each selected method: _____

10. Please indicate how often you use the following capital budgeting techniques?

Technique	Never	Rarely	Sometimes	Often	Always
NPV					
IRR					
PB					
DPB					
PI					
ARR					
Real Options					

11. From the mentioned capital budgeting practices, what minimum level of investment (in Rand) do you decide to employ those techniques?

Level of investment	Net present value	Internal rate of return	Payback period	Discounted payback period	Profitability Index	Accounting rate of return	Real options	Other methods
Less than 500 million								
501-1Billion								
1.1-1.599 Billion								
Greater than 1.599 Billion								
Other								

12. Which methods do you usually use to assess the following operations in your organization?

Operation	Technique						
	PB	DPB	ARR	NPV	PI	IRR	Real options
Expansion in existing operations							
Capital investment projects							
Expansion in new operations							
Foreign operations							
General administrative projects							
Social projects							

Net present value (NPV), internal rate of return (IRR), payback period (PB), discounted payback period (DPB), profitability index (PI), accounting rate of return (ARR)

13. To what extent do you consider the following qualitative factors when evaluating your projects? Please indicate your answer on a scale from:
1= slight
2= very little
3= to a great extent
4= very extensively
NA = not applicable

The societal impact of an increase or decrease in employee numbers	1	2	3	4	NA
The environmental impact of the project	1	2	3	4	NA
Possible positive or negative governmental political attitudes towards the project	1	2	3	4	NA
The strategic consequences of consumption of scarce raw materials	1	2	3	4	NA
Positive or negative relationships with labor unions about the project	1	2	3	4	NA
Possible legal difficulties with respect to use of patents, copyrights and trade or brand names	1	2	3	4	NA
Impact on the organization's image if the project is socially questionable	1	2	3	4	NA

14. Does your company conduct post audits of major capital expenditures?

Always	1
Occasionally	2
Hardly	3
Not once	4