AN ANALYSIS OF THE EFFECTS OF AN UNSTABLE MACROECONOMIC ENVIRONMENT ON CAPITAL BUDGETING

BY

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FOR

A DISSERTATION/THESIS SUBMITTED IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE BACHELOR OF BUSINESS STUDIES HOUNOURS DEGREE IN BANKING AND FINANCE OF BINDURA UNIVERSITY OF SCIENCE EDUCATION OF

FACULTY OF COMMERCE

OCTOBER 2010
ABSTRACT

This research analyses the effects of an inflationary environment on capital budgeting. Descriptive research was used. Data was collected from both primary and secondary data sources, using questionnaires and face to face interviews with finance, investment and project managers. A sample of eight (8) firms, randomly selected from the Zimbabwe stock exchange and stratified into four equal segment of four (4) business sectors which are mining, manufacturing, hospitality and finance. Data was sifted, organized and presented in tables, multiple bar char charts, line graphs and simple pie charts. Researcher found that all companies reduce their capital investment during inflationary periods due to financial constraints caused by reducing purchasing power of the money saved for investments. Furthermore, it was established that during inflation nominal cash flows for the projects increased dramatically in their monetary terms, whilst, the value decreased at an unexpected rate. Cost of the capital of the project increased in relation with increasing inflation rate. Researcher observed that all firms were employing a combination of investment appraisal techniques, however they became of no use due to other factors which relate to inflation, resulting from such factors as political instability and other high level risks. The researcher commended that all decision maker should be continuously be updated with current business environment knowledge, anticipated cash flows should be discounted for inflation and implement efficient Frontier Technic to solve issue of increased capital. Inco operate Multiply Attribute Decision Model in decision making of capital budgeting. Firms should continually update their forecasting techniques and implement investment appraisal methods in light of business environmental analysis.
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To mom, brothers, sisters, loving friends including Prosper Chari, Charles Mukonowasauka and Pedzisai Chimbwanda, I say this is our Heritage. Finally to Mr H Gatsi who stood by me throughout the academic period.
ACKNOWLEDGEMENTS

I would like to express my gratitude to the following individuals for their cooperation during the course of this research study. First and foremost is Mr Njanike, my project supervisor, Patricia Chikovero, Nyasha Gatsi, Mr and Mrs F Kastsande, Eunice Katsande and Macdonald Mangwende. Through their support and encouragement, the publication and availability of this project at Bindura University of Science Education was a success. Not forgetting my fellow students for their invaluable contributions to success of this research. Special mention goes to all who successfully respond to my questionnaires and interviews. I also wish to thank all those who are not mentioned here by names for making this project a success. Finally I thank God for giving me the vision of furthering my studies and becoming even better as I move on to the next step.
Contents

INTRODUCTION ......................................................................................................................... 10
1.1.0 Background to the problem .............................................................................................. 10
1.2.0 Statement of the problem .................................................................................................. 11
1.3.0 Purpose of the study ......................................................................................................... 12
1.4.0 Research questions ........................................................................................................... 12
1.5.0 Significance of the study .................................................................................................... 12
1.5.0 Assumptions ...................................................................................................................... 13
1.7.0 Delimitations of the Study ............................................................................................... 14
1.8.0 Limitations ....................................................................................................................... 14
1.9.0 Definition of Terms ........................................................................................................... 15
1.10 Organization of Study ......................................................................................................... 16
1.11 Chapter Summary ............................................................................................................... 16

CHAPTER II ............................................................................................................................ 18
LITERATURE REVIEW ............................................................................................................. 18
2.1.0 Introduction ....................................................................................................................... 18
2.2.0 Inflation and capital investment ....................................................................................... 18
2.3.0 Effects of inflation on Cash Flows ................................................................................... 21
2.4.0 The Relationship between cost of capital and inflation .................................................. 24
2.5.0 The relationship between Investment Appraisal Methods and Inflationary Environment .................................................. 30
2.6.0 Chapter Summary ............................................................................................................ 35

CHAPTER III .......................................................................................................................... 36
# RESEARCH METHODOLOGY

3.1.0 Introduction ........................................... 36  
3.2.0 Research Design ..................................... 36  
3.3.0 Target Population .................................... 37  
3.4.0 Sample and Sample Size ............................. 37  
3.5.0 Research Instruments .................................. 38  
3.5.1 Questionnaires ....................................... 39  
3.5.2 Advantages of using questionnaires ............... 39  
3.5.3 Disadvantages of questionnaires .................. 40  
3.5.4 Interviews ........................................... 40  
3.6.0 Data Collection Procedures ......................... 42  
3.7.0 Data Presentation Analysis Procedures .......... 43  
3.8.0 Chapter Summary .................................... 43  

CHAPTER IV .................................................. 45  

DATA PRESENTATION, ANALYSIS AND DISCUSSION ......... 45  
4.1.0 Introduction .......................................... 45  
4.2.0 Knowledge about inflationary environment ....... 45  
4.4.0 Capital Investments in an inflationary environment .... 46  
4.5.0 Effects of Inflation on Cash Flows .................. 48  
4.6.0 Investment Appraisal Methods used and their applicability in an inflationary environment .......... 51  
4.8.0 Chapter Summary .................................... 53  

CHAPTER V .................................................. 55  

SUMMARY, CONCLUSION AND RECOMMENDATION ........ 55  
5.1.0 Summary of Findings ................................ 55  
5.2.0 Conclusion .......................................... 55  
5.3.0 Recommendations ................................... 57  

References .................................................. 58
Appendix 1 ................................................................................................................................. 60
Questionnaire for Management .................................................................................................. 61
Appendix II .................................................................................................................................. 64
CHAPTER II
INTRODUCTION

1.1.0 Background to the problem
Capital budgeting involves the planning of long term massive expenditure that generates cash flow benefits for more than one year. Examples include the purchase of new equipment, expansion of production facilities, buying another company. Acquiring new technologies and launching a research and development program. Capital expenditure often involves large cash outlays with major implications on the future values of the company. There is need to carefully analyze and evaluate proposed capital expenditures.

Recently, Zimbabwe has been experiencing instability both on the political and economic front. The level of inflation had exceeded quad digital level standing at 66 212,3% as of December 2007 according to official statistics(The standard,17 February 2008)and 231,000,000% by July 2008, which was the last official figure published by central statistical office. Inflation in the past few years has been the major macroeconomic problem and taken into account by financial decision makers. Macroeconomic instability has necessitated that expectations about the future rate of inflation be taken into accounting making decisions about which capital projects will be taken undertaken by the firm. Nominal cash flow determine the degree of profitability and this has prompted that a consideration be taken of the role of inflation in capital budgeting with focus being drawn on the individual components to draw specific conclusions with to the interaction of the cost capital, inflation and investment appraisal framework.
Vigario (1992) states that investment decision looks at the investments in an asset that yields future cash flows. If the cash flows are equal or greater than the company’s required return, then the investment should be accepted as it will increase the shareholders’ wealth. Furthermore an analysis by Boddie (2002) on the issue of capital investment brought about its major concepts which are target, cost of capital, future cash flows of project, pricing decision of the project, and traditional methods of investment appraisal to determine the value of the assets at the end of the project.

As Zimbabwe’s economy was facing inflationary environment for the past years, the researcher discovered that there is a need to identify how inflation affected the application of capital budgeting process. This research would table all negative effects which have resulted from the inflationary environment. Methods used by investors’ to cushion themselves when undertaking capital budgeting in inflationary environment shall be identified and this study would enable the researcher to propose identified solutions to the effects of inflation on capital budgeting.

Effective capital budgeting decisions have to be implemented consistently in the business, as investors provide their capital to maximize wealth in whatsoever business environment therefore it is the task of finance project or investment managers to execute strategic channel to fulfill their responsibilities.

1.2.0 Statement of the problem
In today’s complex business environment, making capital budgeting decisions are among some of the most important and multifaceted of all management decisions as it represents major commitments of company’s resources and has serious consequences on the profitability and financial stability of a company. It is important to evaluate the proposals rationally with respect
to both economic feasibility of individual projects and relative net benefits of alternative and mutually exclusive projects. For the past decade Zimbabwe experienced macro-economic instability greatly characterized by hyperinflationary environment. Therefore, for project selection and continual evaluation there is need to identify the relationships among inflation and elements of capital budgeting process which are cost of capital, cash flow and investment appraisal methods.

1.3.0 Purpose of the study
i) To examine the effects of inflation on capital investment decision.
ii) To determine the effects of inflation on cash flows of any project being implemented.
iii) To establish the relationship between cost of capital inflation in investment decisions.
iv) To establish investment appraisal methods used during inflationary period.
v) To determine whether the investment appraisal methods are still applicable in an inflationary environment.

1.4.0 Research questions
i) What are the effects of inflation on cash flow of any project?
ii) Is there a relationship between cost of capital and inflation
iii) Can researchers identify investment Appraisal methods apply in an inflationary environment?

1.5.0 Significance of the study
I) The project seeks to bridge the gap between theory and practice by taking theoretical aspects into the field of practical work and see if they are applicable, to what extent and are they really of importance in an inflationary economic environment.
Limitations of theoretical aspects are exposed and situational approaches have to be taken into consideration.

ii) Evaluate on how companies make their investment decisions? And suggest tools and strategies that could be adopted in an inflationary environment to cope with the effects of inflation. The research shall determine the relationship and effects of inflationary environment to capital budgeting concepts which are cost of capital, Cash flows and the investment appraisal methods.

iii) The research shall enable the researcher to have a deep understanding of the major finance and investment subject which is capital budgeting. The researcher will use the knowledge for strong career development. The research shall table financial strategies and solutions to investors, which they would use in capital investment decisions in inflationary periods. The research shall be beneficial to the academic arena by setting a benchmark for further research studies in the field of capital budgeting. The research will fill the gap created between researchers carried out for developed countries and developing countries.

1.5.0 Assumptions
i) Investment decisions such as acquisitions of real assets are inevitable in an inflationary environment.
ii) Inflationary environment affects cost of capital for investments.
iii) Investment appraisal methods are the major tools to evaluate projects to be undertaken.
iv) There are investment appraisal methods which are applicable in an inflationary environment.
v) All firms listed on Zimbabwe Stock Exchange, maximize shareholders’ wealth and profitability by executing long term capital investment projects.

1.7.0 Delimitations of the Study

The research was done in Harare region. A survey of eight (8) firms was used, which were stratified into four equal segments which are mining, manufacturing, finance and hospitality sectors drawn randomly from Zimbabwe Stock Exchange. The research shall focus on the economic effects of capital budgeting, where, the independent is inflation and the variables consists of acquisition of new real assets, cost of capital, future cash flows and traditional investment appraisal.

1.8.0 Limitations

Capital Budgeting information is treated as strategic information in most organizations, therefore, it was confidential and therefore some of the finance directors and managing directors would not disclose the information. They feared investigation and violation of internal regulations. To eliminate the barrier the researcher explained to the respondents that the major purpose of the results from the study are for academic purposes and shall be confidential. There are various types of firms on the Zimbabwe Stock Exchange; therefore, it would be difficult to compare firms in unique business lines. To address this limitation the researcher managed to segment the sample into four common
sects on the stock market. Firms selected for the study would represent their respective sectors.

1.9.0 Definition of Terms

Capital Budgeting: method used to evaluate long term investment decisions of a firm, such as purchase of new assets or to expand business operations.

Cash Flows: money from or into an investment project.

Cost of Capital: is the return that the organization must earn on its investment in order to meet investor’s required return.

Credit risk: Potential of losses due to the failure to fulfill contractual obligations by counterparts.

Inflation risk: is the potential of losses from changes in business operations initiated by general increase of prices.

Inflationary environment: business’ economy which is characterized by general increase of the price level.

Investment Appraisal: quantitative methods used to analyze and evaluate different projects so as to select the most viable. Methods include Net Present Value (NPV), Internal Rate of Return (IRR), Accounting Rate of Return (ARR) and Payback Method (PB).

Macroeconomic Environment: is the external business environment which constitutes political, social, legal, economic and technological factors.
Nominal Interest Rate: interest rate that is not adjusted for inflation.

Project Risk: Potential of losses that result from the failure of capital investment selected within the business operations.

Real Interest Rate: is the interest rate of adjusted for inflation, which is excess to the inflation rate.

1.10 Organization of Study
The research project has been presented in five chapters, where chapter one consists of the introduction of the research to the reader, where the research problem has been outlined. Chapter two covers all the literature used during the study which consists of both theoretical and empirical literature. Chapter three illustrates how the research was carried out, with a detailed explanation of the steps followed in conducting the research. Chapter four outlines how the data was collected, analyzed and presented. Finally, chapter five briefly summarizes the whole research, outlines results and recommendations brought forward by the research.

1.11 Chapter Summary
The chapter has presented the research problem, the background of the study, the research objectives, the research questions, justification and limitations of the study as well as the scope of the research. The chapter shows how significant it is to carry out a study on the effects of an inflationary environment to capital budgeting process. The preceding chapter reviews theoretical and empirical literature that is related to the effects of inflationary environment to capital budgeting process.
CHAPTER II

LITERATURE REVIEW

2.1.0 Introduction

This chapter provides a review of the literature on the effects of an inflationary environment on capital budgeting. The chapter presents the conceptual, theoretical and empirical frameworks that have been carried out in Zimbabwe and other countries. The chapter also looks at the extent at which companies have been behaving in capital decision making under these inflationary conditions. The chapter led to the development of the subject under study, establishing definitions, concepts, and implications to the effects of the inflationary environment on the capital budgeting.

2.2.0 Inflation and capital investment

Parkin and King (1995), defined inflation as a sustained upward movement in the average level of prices. They also reported that inflation is one of the major causes of instability in the macroeconomic environment. Scott (1995) further elaborates that an inflationary environment is a macroeconomic condition where there is general increase in prices of goods and services. Hill (2002), defined capital budgeting as the decision making process with respect to invest in fixed assets. Specifically it involves measuring the incremental cash flows associated with investment proposals and evaluating them. Vigario (1999) further explained that the capital budgeting process has four major concepts, which are cash flows of the project, Weighted Cost of Capital and investment appraisal methods and cost of capital. He stated that these concepts should be incorporated when making capital investment decisions.
According to Mills (1996: 79), a major impact on both financial theory and the practice of financial decision making has been the economic instability, especially in prices, evidenced in the U.S. economy since the mid-1960s. Macroeconomic instability has necessitated that expectations about the future rate of inflation be taken into consideration in making decision(s) about which capital projects will be undertaken by the firm. Nominal cash flows determine firms’ degree of profitability. However, in making the capital budgeting decision both real and nominal concepts must be considered.

It has been said that how we spend our money today determines what our value will be tomorrow. Therefore, we will focus much of our attention on present values so that we can understand how expenditures today influence values in the future. A very popular approach to looking at present values of projects is Discounted Cash Flows (DCF). Decision making is increasingly more complex today because of uncertainty. Additionally, most capital projects will involve numerous variables and possible outcomes. For example, estimating cash flows associated with a project involves working capital requirements, project risk, tax considerations, and expected rate of inflation and disposal values. We have to understand existing markets to focus project revenues, assess competitive impact of the project, and determine the life cycle of the project. If our capital projects involves production, we have to understand operating cost, additional overheads, capacity utilization, and startup costs. Consequently, we cannot manage capital projects by simply looking at the numbers; i.e. discounted cash flows. We must look at the entire decision and assess all relevant variables and outcomes within an analytical hierarchy. In financial management, we refer to this analytical hierarchy as the Multiple Attribute Decision Model (MADM). Multiple attributes are involved in capital projects and each attribute in the decision needs to be weighted differently. We will use
an analytical hierarchy to structure the decision and derive the importance of attributes in relation to one another. We can think of MADM as a decision tree, which breaks down a complex decision into components parts.

Kannadhasan (2003); analyzed Capital Budgeting Decisions with inflation suggested that to distinguish between expected and unexpected inflation. The difference between unexpected and expected inflation is of crucial importance as the effects of inflation, especially its redistributive effect, depends on whether it is expected or not. Expected inflation refers to the loss the manager anticipates in buying power over time whereas unexpected inflation refers to the difference between actual and expected inflation. If rate of inflation is expected, then the manager takes steps to make suitable adjustments in their proposals to avoid adverse effects which it could bring to them.

Porter and Berger (2007), in their research on capital budgeting process under conditions of uncertainty, they carried out a survey among six institutional investors in China and the other six in the United States of America. Questionnaires and observations were used as instruments. The results of the study were that capital budgeting process carried out under uncertainty conditions is exposed to various risks such as liquidity, credit, inflation and bankruptcy. They further recommended the use of simulation methods to forecast the risk of any project. Simulation was identified as the process of imitating the performance of an investment project through repeated evaluations using a computer.

Parkin (2008), carried out a similar study on the effects of inflation to capital budgeting process. She focused on ten firms listed on the New York Stock Exchange. Questionnaires and personal interviews were carried out among Finance Directors of the surveyed firms. She discovered that an inflation rate of any magnitude, even three percent can have sizable cumulative effects on capital budgeting over many years. There
investors need to be considerate of inflation rate when making decision criteria concerning capital budgeting.

2.3.0 Effects of inflation on Cash Flows

Boddie (2002), defined cash flows as a specified quantity of money related to a certain investment project in a specified time frame. He identified two types of cash flows that are inflows to a certain project and outflows that are generated from a project. These cash flows need to be quantified to help the investor in making an investment.

According to Van Horne (2003: 653-658), to be consistent, inflation in forecasting cash flows must be reflected in a discount rate containing inflation; that is, a bias is introduced if nominal cash flows are discounted at the real and not nominal cost of capital. Nominal cash flows must be treated with nominal cost of capital. Furthermore, according to Drury (2000: 502), the increase in cash flows from year to year due to inflation is an illusion because it is offset by a decline in the purchasing power of the monetary unit. Rather than expressing cash flows in today’s purchasing power or monetary unit (that is, in real cash flows). When cash flows are expressed in monetary units at the time when they are received they are described as nominal cash flows whereas cash flows expressed in today’s (that is, time zero) purchasing power are known as real cash flows. Therefore, nominal cash flows are converted to real cash flows by using the formula.

Van Horne (2003: 318) gives insight into the issue by stating that in estimating cash flows, anticipated inflation must be taken into account. Often there is a tendency to assume erroneously that inflation levels will remain unchanged throughout the life of the project. If the required rate of return for a project to be accepted embodies a premium for inflation,( as it usually does), then estimated cash flows must also reflect inflation. Such
cash flows are affected in several ways. If cash inflows ultimately arise from the sale of a product, expected future prices affect these inflows. As for cash outflows, inflation affects both expected future wages and material costs. This therefore entails that all cash flows must be discounted for, so as to give a more accurate measure of the real value of the cash flows.

Concepts of discounted cash flows, nominal cash flow and real cash flow were further explained by Blackstaff (1998) in his research, carried out in India, evaluating the effects of inflation to cash flows of any project undertaken. The research concluded that there is a tendency to assume erroneously that, when both revenues and the project cost rise proportionately, the inflation would not have much impact. These lines of arguments seem to be convincing, and it is correct for two reasons. First, the rate used for discounting cash flows is generally expressed in nominal terms. It would be inappropriate and inconsistent to use a nominal rate to discount cash flows which are not adjusted for the impact of inflation. Second, selling prices and costs show different degrees of responsiveness to inflation. Estimating the cash flow is a constant challenge to all levels of financial managers. To examine the effects of inflation on cash flows, it is important to note the difference between nominal cash flow and real cash flow. It is the change in the general price level that creates the crucial difference between the two. A nominal cash flow means the income received or expenses paid in absolute terms. On the other hand, real cash flow means purchasing power of your income. For example if a manager invested Rs.10000 in anticipation of 10 percent rate of return at the end of the year. It means that the manager will get Rs.11000 after a year irrespective of changes in purchasing power of money towards goods and services. The sum Rs.11000 is known as
nominal terms, which includes the impact of inflation. Thus, Rs.1000 is the nominal 
return on investment of the manager. On the other hand, (Let us assume the inflation rate 
is 5 percent in next year. Rs11000 next year and Rs.10476.19 today are equivalent in 
terms of the purchasing power if the rate of inflation is 5 percent) Rs.476.19 is in real 
terms as it adjusted for the effect of inflation. Though the manager’s nominal rate of 
return is Rs.1000, but only Rs.476 is real return.

Larker (1998) states that Capital budgeting results would be unrealistic if the effects of 
inflation are not correctly factored in the analysis. For evaluating the capital budgeting 
decisions; we require information about cash inflows as well as outflows. In the capital 
budgeting procedure, estimating the cash flows is the first step which requires the 
estimation of cost and benefits of different proposals being considered for decision 
making. The estimation of cost and benefits may be made on the basis of input data being 
provided by experts in production, marketing, accounting or any other department. 
Mostly accounting information is the basis for estimating cash flows. The management 
accountant’s task is to design the organization’s information system or Management 
Accounting System (MAS) in order to facilitate managerial decision making. MAS 
parameters have to be designed on the basis for commonalities in the decision process of 
executives involved in strategic capital budgeting decisions.

Larker (1998) examined whether executives have similar preferences regarding 
information which may be used in making strategic capital budgeting decisions. The 
results indicate that executives have similar informational preferences, the preferred 
information characteristics depend upon the stage of the decision, and environmental and
organizational structure variables are not associated with an executive’s informational preferences.

As mentioned above Damodaran (2001) agrees with Larker(1998) through his findings which state that; estimating the cash flows is the first step which requires the estimation of cost and benefits of different proposals being considered for decision-making. Usually, two alternatives are suggested for measuring the ‘Cost and benefits of a proposal that is, the accounting profits and the cash flows. In reality, estimating the cash flows is most important as well as difficult task. It is because of uncertainty and accounting ambiguity. Accounting profit is the resultant figure on the basis of several accounting concepts and policies. Adequate care should be taken while adjusting the accounting data. Otherwise errors would arise in estimating cash flows. The term cash flow is used to describe the cash oriented measures of return, generated by a proposal. Though it may not be possible to obtain exact cash-effect measurement, it is possible to generate useful approximations based on available accounting data.

2.4.0 The Relationship between cost of capital and inflation

Atkinson (1997), states that the cost of capital is the return that the organization must earn on its investments in order to meet its investor’s return requirements. This is the interest rate that the organizations use in their time values of money discounting, compounding calculations. Vigario (1992) defined Weighted Average Cost of Capital (WACC) as the company required return for investment and incorporates finance from
shareholders and debt providers. Therefore, investors should determine the appropriate WACC that will be used to discount future cash flows when evaluating a new investment.

Due to the various forms of financing in investments, firms tend to use the overall cost of capital with the proportionate of the costs of the various components of the firm’s financing which are equity capital, debt and preferred stock. Preferred stock is not much used, as it cannot appreciate in value against the ravaging inflation. Copeland (1992: 62), show that since investment and security returns are based on expected future returns, the anticipated inflation rate should be reflected in the required rate of return on the project or the applicable cost of capital for the project. This relationship is recognized in financial economics and is known as the Fisher Effect. In formal terms, we have:

\[(1+r)(1+n)= (1+k)\]

Where k is the required return in nominal terms, n is the anticipated annual inflation rate over the life of the project, and r is the real rate of return. Thus the market data that is used in the estimation of current costs of capital should include a premium for the anticipated inflation.

According to Gitman (2003: 184-187), changes in inflationary expectations affect the risk free rate of return, Rf, thus:

\[Rf=k + IE;\]

where: k is the real rate of interest

IE is the increase or decrease in inflation.

Drury (2000: 501-504) gives further analysis whereby he notes that inflation affects future cash flows and the return that shareholders requires on the investment (i.e. the discount rate). The discount rate consists of the required rate of return on a risk less
investment plus a premium that is related to a project’s risk, inflation affects both the risk–free interest rate and the premium. A further analysis of this situation will lead to the *Fisher Effect* (explained above) that relates nominal rate of interest to the real rate of interest and the rate of inflation.

In explaining the relationship between cost of capital and inflation, Bailey and Jensen (1977:31-32), state that it has been argued that the market rate of interest already embodies the price level effect and that the rate will be unique. This statement in itself is not usual since the argument that nominal rates of interest, hence the nominal cost of capital, contain an inflation premium back to the fisher effect and is generally accepted. Since the discount rate is a major determinant of the investment decision, its relationship to inflation is of more than just passing interest in determining the overall impact of inflation on capital spending. Incorporating the loanable funds theory that states an increase of inflation rate also causes an increase in interest rates this will also have an impact on the movement of cost of capital when inflation occurs.

Since it is reasonable to expect that the rate of interest will increase when there are expectations of higher inflation, the cost of capital on an ex ante basis increases with the same proportion as the expected rate of inflation; that is, the same mechanism which causes interest rates to rise during inflation will also cause the cost of capital to rise. Short term phenomena may prevent the cost of capital from behaving precisely in this fashion. One action may be for business to alter capital structure, moving towards greater amounts of debt and thus lowering the after tax cost of capital. However, these corrections are not long term and in case of rising debt costs should have little impact on the overall movement of capital from rising proportionate with expected inflation, but
this too should not prevent a long term assumption that the cost of capital does increase when expected rate of interest rises.

Elton and Gruber (2003: 89), give further analysis to the issue by using the efficient frontier technique. The concept is widely used in practice to make asset allocation decisions for long term investment, particularly for pension fund assets. They argue that when the investment horizon is measured in decades, it is important to consider how the change in purchasing power value of the portfolio. Thus one approach to this problem is to apply efficient frontier technique to inflation-adjusted returns. This therefore, means that to bring value to the owners of capital in an inflationary environments, it is important to make sure that the returns that are being expected from such investments are inflation adjusted and one method is the use of the efficient frontier technique. An economically unstable environment erodes value out of shareholders’ wealth so it is of paramount importance that the capital budgeting decisions encompass all factors affecting the cost of capital.

Van Horne (2003: 400) notes that it is important that the risk-free rate and the expected market return be the best possible estimates of the future. This is to try by all means to make best assessment of the project being undertaken to consider its viability.

Copeland (1992: 814) further gives more detail by explaining inflation risk in relation to overseas investments. He states that assuming there is no inflation in the United States and the inflation in England is uncertain, the dollar value of America’s investment in England at the end of the period is uncertain and hence risky. There is an exchange risk and it is clear that the exchange risk is simply an inflation risk.
Horngren (1991:689) explains that when analyzing inflation in capital decisions, it is important to distinguish between real rate of interest and the nominal rate of interest. He explains that real rate of interest is comprised of two elements:

a) Risk-free element - the “pure” rate of interest that is paid on the long term government bonds.

b) Business-risk element - the risk premium above the pure rate that is demanded for undertaking risks.

Nominal rate of interest is also comprised of two elements:

a) The real rate of interest

b) An inflation element - the premium demanded because of the anticipated decline in the general purchasing power of the monetary unit. Thus the inflation premium is of importance in dealing with the huge investments in an environment that had experienced hyperinflation such as Zimbabwe.

According to Mills (1996), generally accepted economic theory supports the conclusion that the rate of interest should move in the same direction as the expected rate of inflation. A pure quantity theory of money approach would argue for an almost exact movement. Under the loanable funds theory, the demand for money should increase because of increased transactions demand and the increased precautionary demand while the supply of loanable funds would decrease as surplus units reduced their excess balances. Both these actions would force up the cost of money. Under the liquidity preference theory, the demand for funds would increase for the above reason, and for the reason that investors would expect a fall in bond prices as a result of the inflation and
would thus tend to want to hold money balances. Theory would expect a fall in bond prices as a result of the inflation and would thus tend to want to hold money balances. Theory would then predict rising interest rates as the expectation of higher inflation occurred. On any type of expectations theory approach, the rate of interest should increase with an increase in the rate of inflation.

The empirical evidence with respect to whether or not interest rates would perfectly reflect expected inflation is strong but also controversial. Fuma (1975) demonstrates that short term rates accurately reflect the expectations of future rates of inflation, but his methodology and conclusions have received by several rebuttals such as Cagan and Goldolfi (1969) achieved similar results for long term rates, although they argue the results might not be applicable to short term rates. Finally, the question arises as to the movement of the cost of capital when inflation occurs. We have shown that it is reasonable to expect that the rate of interest will increase when there are expectations of higher inflation, but there appears to be little evidence on the measurement of the cost of capital under inflationary expectations. This is understandable, given the difficulty in just measuring the cost of capital in a static sense. The assumption in the above analysis by Bailey and Jensen (1977) noted that the cost of capital on an ex ante basis increases with the same proportion as the expected rate of inflation; that is, the same mechanism which causes interest rates to rise during inflation will also cause the cost of capital to rise. Furthermore, those who provide equity capital are likely to behave in the same manner as those who provide debt capital. Short term phenomena may prevent the cost of capital from behaving precisely in this fashion. One action may be for business to alter capital structure, moving towards greater amounts of debt and thus lowering the after tax cost of capital. However, these corrections are not long term and in the case of rising debt, costs
should have little impact in the overall movement of the cost of capital from rising proportionately with expected inflation, but this too should not prevent a long term assumption that cost of capital does increase when the expected rate of inflation increases.

2.5.0 The relationship between Investment Appraisal Methods and Inflationary Environment

Hill (2002) identified three major traditional investment appraisal methods as Payback, Internal rate of return (IRR) and Net Present Value (NPV). He defined these appraisal methods as:

i) Payback: the number of periods required to cover a project’s initial investment.

ii) IRR: is the rate of interest earned on an investment.

iii) NPV: the sum of the present value of all the cash inflows and cash outflows associated with a project.

Net Present Value (NPV)

Brigham (1978: 392-394) notes that inflation is a fact of life and should be explicitly recognized in capital budgeting decisions.
i) Inflation factor is reflected in Weighted Average Cost of Capital (WACC), which is used to find NPVs, and as the hurdle rate if Internal Rate of Return (IRR) or Modified Internal Rate of Return (MIRR) is used. Therefore, inflation is reflected in the cost of capital part of a capital budgeting analysis.

ii) NPV = CF

\( K \) includes a premium for expected inflation so the higher the expected inflation rate, the larger the value of \( k \) and other things being equal, the smaller will be the NPV.

iii) If inflation is expected, but this expectation is not built into the forecasted cash flows, then the calculated NPV will be incorrect—it will be downward biased. This therefore calls for sales prices over the life of the project to be built into the sales revenues.

This analysis explicitly shows that inflation effects must be considered in project analysis, the best procedure being to build inflation effects directly into cash flow estimates.

Internal Rate of Return

Besides determining the Net Present Value of a project, we can calculate the rate of return earned by the project. This is called the Internal Rate of Return. Internal Rate of Return (IRR) is one of the most popular economic criteria for evaluating capital projects since managers can identify with rates of return. Internal Rate of Return is calculated by finding the discount rate whereby the Net Investment amount equals the total present value of all cash inflows; i.e. Net Present Value = 0.
If the Internal Rate of Return were higher than our cost of capital, then we would accept the project. For example, assuming an IRR of 8% and a cost of capital of 12%, we would not invest in this project as the expected returns are below the market rate of capital.

The Payback Method

Khan and Jain (2004) defined and evaluated the payback method as one of the simplest and most commonly used of all capital budgeting techniques. This technique is concerned with the length of time required for an investor to recapture his original investment in a project. The payback method decision rules are as follows:

1. Given two or more alternative projects, the project with the shorter payback period is preferred.
2. A single project should be undertaken if its payback period is shorter than some maximum acceptable length of time previously designated by management.

The payback method has two primary advantages over many other capital budgeting techniques:

a) Payback periods are easy to compute and to compare.

b) Payback periods provide readily available information as to length of time a corporation must wait to enjoy the benefits of its investments. Projects generating cash flows are potentially more likely to have shorter payback periods. Thus in a sense, the payback period rule might roughly account for the time value of money, though not in a consistent manner.

Because of these advantages, the payback method is one of the most popular of all capital budgeting techniques. This technique is commonly used by many
governments as well as corporations. However, the payback method also has a number of serious weaknesses. Among these are:

1. The payback rules do not consider cash flows received after the payback period.
2. The payback rules do not consider the timeliness of cash flows within the payback period. For example, cash flows received in the second year of a project's life is valued as highly as cash flows received in its first year when the payback period exceeds two years.
3. The payback rules do not properly consider the riskiness of cash flows.
4. The payback rules may be inappropriate for comparing mutually exclusive projects when their initial investment levels are substantially different. In this case, another rule should be used when management wishes to maximize the value of the firm.

Kwesu (2008), researched on the elements of capital budgeting process within listed firms of Zimbabwe. In his study, nine questionnaires were sent out to Finance Directors of the surveyed firms, documentary review such as financial statements and journals of the firms were also employed to gather concerning firms’ capital investment projects being undertaken. He discovered that from the nine surveyed firms, sixty percent of them were using traditional appraisal methods to identify and select potential investments. These consist of NPV, IRR and Payback method. He concluded that traditional investment appraisal methods are significant in capital budgeting process.

According to Parkin (2008), DCFs model that is IRR and NPV are the best to implement in inflationary environment as they explicitly and automatically weighs the time value of
money; therefore, it is the best method to use for long range decisions. She recommended that firms use Discounted Cash Flows Models (DCFs) by firms during inflationary times as they appreciate time value of money. She also advised the firms to continue carrying out evaluation of methods used in the capital budgeting process during inflationary as they require consistent analysis. For academic purposes she recommended a similar study to be undertaken on companies in a developing country and where inflation level is of different magnitude of three- five percent as previously used.

Therefore, the above researches findings have placed the researcher in a better position to come up with own research methodology, where, the results would be used to compare with what has been tabled by other researchers. It was also discovered that the previous researches done were not relevant to an economy faced by hyperinflation as that which ravaged Zimbabwe in few past years; therefore, the study shall fill that gap.
2.6.0 Chapter Summary

In this chapter, the researcher has identified and examined the main elements of capital budgeting. The researcher has seen that decision making in capital projects in an entity requires an evaluation of all the components of capital budgeting and their relationship with inflation. A proper analysis of the variables that include the cost of capital, cash flows and investment appraisal methods in hyperinflation brings a balance to the problem at hand. Next chapter shall review research methodology which gives a description of how the research study was executed.
CHAPTER III

RESEARCH METHODOLOGY

3.1.0 Introduction
This chapter is set out to give a description of how the research study was executed, embracing all the activities and procedures undertaken during the study. The chapter shall discuss the research design, research instruments, data collection procedures, data presentation and analysis used in the analysis of effects of an inflationary environment on the capital budgeting.

3.2.0 Research Design
According to Cooper and Schindler (2003:146), a research design is a plan and structure of investigation so conceived as to obtain answers to research questions. The research design therefore is a plan for the entire research study that gives the framework of the researcher plan of action. A research design thus provides answers for such questions: what techniques will be used to acquire data? What kind of sampling will be used? How will constraints be dealt with? The research design used in this study was basically the descriptive method. A descriptive study is used when researchers want to understand the characteristics of certain phenomena underlying a particular problem. Ortinam (2003:330) asserts that descriptive research is typically concerned with determining the frequency with which something occurs or relationship between two variables. The investigation of the effects of inflationary environment on capital budgeting entails for better understanding of the relationship among inflation with the independent and
variables, which are capital budgeting concepts; future cash flows, cost of capital and investment appraisal methods.

Descriptive research design is both qualitative and quantitative as the research seeks to collect data that permits us to describe the characteristics of the phenomena being studied. This descriptive design was found to be more suitable for this study as it greatly helps in discovering the association of different variables and helps the researcher to generate data relating to the problem being studied. This design can greatly reduce the financial constraint without negatively affecting the effectiveness of the research.

3.3.0 Target Population
Population is defined by Levin (1994:52) as a collection of all the elements we are studying and about which are trying to draw a conclusion. A research population thus refers to the total set of units in which the investigation is interested. A population is accordingly an aggregation of elements from which the sample is actually drawn from. Target population for this research is firms listed on the Zimbabwe Stock Exchange. The researcher focused on this population area as it constitutes a wide variety of firms in different lines of business and are the ones which directly affects investment decisions as their stocks are open to the public. Firms on the stock market are theoretically those with wide capital base to undertake significant capital investment within the economy.

3.4.0 Sample and Sample Size
A sample is a representative part of a target population taken to show what the rest of the population is like. It is ideally synonymous with the entire population conveniently scaling down the study elements where it is impossible to study elements where it is impossible to study the whole population. Levin (1994:52) defines a sample as a collection of some, but not all of the
elements of the population under study, used to describe the population. The sampling unit is a single group of elements subject to selection in a sample. In this study the sampling unit is segmented into four categories which are mining, manufacturing, hospitality and finance (insurance and banking) sector. The sample of the research is more inclined to the finance and or investment department as they are heavily involved in the capital budgeting process. The respondents have been chosen on the basis of their strategic influence to the capital budgeting system at the company. The sample size of eight companies on the Zimbabwe Stock Exchange, divided into two firms for each of the four sectors selected to be used in the research.

A sample of eight (8) firms has been drawn from the Zimbabwe Stock Exchange (ZSE) using simple random sampling, where the entire participant has an equal chance of being selected. This method was employed as there was a study; that although firms listed are in different lines of business, their main objective is to maximize shareholders’ wealth and profitability of the firm, thus they execute long term capital investments. However, this technique to a lesser extent could be biased, if the sample fails to represent all sectors listed on the market, since level of capital investment undertaken depends upon the sector the firm is operating within. To encounter this limitation the researcher used stratified random sampling, where eight (8) firms draw randomly are divided into segments where each strata contains homogeneous firms that is manufacturing, mining, and finance and hospitality sectors. This technique enables the researcher to compare results from different sectors of the economy. Using this technique the researcher gained better control on the data collection process thus more accurate data were produced from the sample which may academically significantly represent the whole population.

3.5.0 Research Instruments
Self-administered questionnaires and in-depth interviews were the main sources of primary data collection methods that were employed in the research.
3.5.1 Questionnaires
According to Zikmund (2000:366), a questionnaire is an instrument for collecting data through carefully laid down questions. A questionnaire presents information in writing to respondents and requires written down responses targeting information as per the research questions. Martins (1995) further stated three characteristics of a good questionnaire; these are clarity, devoid of leading and complex questions. Questionnaires therefore, appeal for simple and easily understood questions which individuals can interpret and make meaning and sense of. The questionnaires included both closed-ended questions that only provided a simple choice of answers such as ‘yes’ or ‘no’ and open-ended questions, allowing the responded to fully express their answer. According to Kinnear (1990), closed ended questions include possible answers and subjects allowing respondents to make choices among them. The questions sought management views on the effects of inflationary environment to the capital budgeting process, therefore, most questions used are open-ended to enable respondents to outline their views. However, to guide the respondents not to deviate from the main research question, the researcher used closed-ended questions. The researcher designed questionnaires being guided by the research questions which enables the relationship between inflation and capital budgeting concepts; future cash flows, cost of capital and investment appraisal methods unearthed.

3.5.2 Advantages of using questionnaires
The research chose the use of questionnaires as one of the main research tool due to the many advantages that are brought about from the use of questionnaires. Below are the chief reasons for the use of questionnaires for this study:

i) A questionnaire saved time in surveying the targeted respondents, especially in this case where the management to be asked had busy schedules, therefore, questionnaire could be responded to in extra time.
ii) A questionnaire allows the researcher to guide participants along lines of thought with regard to the investigation of the effects of unstable macroeconomic environment. The researcher managed to set questions which focus on the inflation and capital budgeting main concepts; future cash flows, cost of capital and investment appraisal methods.

iii) Self-administered questionnaires offered respondents the flexibility of filling in the questionnaires with enough time to think about their responses. This is effective as some of the concepts and ideas within the research question were difficult to explain verbally, thus put it in black and white is effective.

3.5.3 Disadvantages of questionnaires
Despite the advantages outlined above, the use of questionnaires has the following limitations with respect to the acquisition of data by the researcher. These are outlined below as:

i) Questionnaires might be unclear or vague to respondents thus feedback can be wrong.

ii) Some respondents were unwilling to provide information even though the researcher had made an assurance of confidentiality of results.

To overcome the limitations of questionnaires, the researcher took care in the wording and ordering of questions to ensure that they are simple, direct and unbiased. Researcher explained the purpose of the research; assured for confidentiality of the results collected and advised respondents not to write their names.

3.5.4 Interviews
An interview is a conversation with the respondent to gather data and validate questionnaire results. Responses are recorded through taking down of notes, as this creates a high level of professionalism as compared to recording of voice and video where the respondent may be
suspicious of being investigated. The researcher used face-to-face interviews as another main research tool in soliciting data. Interviews were held with respondents and the research questions were used as a guide in the interviews. These gave the opportunity of instant feedback and enabled probing of complex answers. Martins (1995) identifies two forms of face-to-face interviews namely; individual and group interviewing. Individual interviewing gave every respondent the opportunity to say out his or her line of thought without having being influenced by group psychology. The interviews employed by the researcher were in-depth in nature. This was due to the desire by the researcher of encouraging respondents to go deeper and deeper into their levels of thought. The researcher chose in-depth interviews because he wanted to thoroughly generate adequate data from the investment and finance gurus who are to be asked for finer explanation of the effects of inflationary environment to capital budgeting process.

Advantages of in-depth interviews

i) The researcher had a great deal of flexibility and used his ingenuity to stimulate management to reveal more of their attitudes and motives as regards the effectiveness of capital budgeting.

ii) The interviewer can use probing to get information especially on complex and emotional questions. The problem being investigated at times requires the respondent to use sketch graphs to explain the relationship of variables, therefore, face-to-face interviews are effective for this practice.

iii) The researcher was able to use non-verbal communication during interviews and read facial gestures of respondents on sensitive topics. In explanation of the data supplied, the respondent at times managed to express some concepts sing local language, which could be difficult to use in questionnaires.

Disadvantages of in-depth interviews:
i) Respondents may feel uneasy and intimidated by the in-depth interview this can lead to collection of biased data.

ii) Respondents may hold back some important information if they feel that it would not be in their best interest should it be known that they disseminated the information.

Appointments were made so that respondents would be aware and ready for the interview. Interviews were also done in the comfort of their offices or would choose the venue for the interview which they preferred and are comfortable to them. Respondents are also assured that the information is specifically for academic purposes and will be confidential.

3.6.0 Data Collection Procedures

Appointments for interviews are done through telephone and in some cases through face-face interviews, the researcher would use this opportunity to explain the purpose of the interview to the respondents and take note of the dates, time, duration and venue for the interviews. This enables the respondent and the researcher to prepare their schedules in advance. In all circumstances, the respondents were ready for the interview without the need for appointments.

Telephone and face-face were used for bookings as they allow for two way communication.

The researcher would prepare well for the interview that is dressing in relation to the venue set for the interview but trying as much as possible to make it formal, attend punctually to avoid alienating the respondent, take pens and notebooks for note taking. All interviews require proper time management, where the duration of the interviews were guided to what has been set on the day of the appointment.

Questionnaires are distributed by hand, where relevant permission to leave the instruments to the respondents is done. Hand delivery ensures that the instruments are received by the right respondent at the right time and place. The researcher, where need is required, can further
explain verbally the purpose of the questionnaires so as to boost confidence of the respondents. Advice for day of collection of completed questionnaires may be done on the delivery day. On the day of collection, questionnaires were checked for physical completeness before being collected for data analysis.

3.7.0 Data Presentation Analysis Procedures
Data presentation is done in the form of tables, multiple bar graphs, line graphs and pie charts to analyze both qualitative and quantitative data that was collected by the researcher. Multiple bar charts are when there is interest in emphasizing the difference between the categories of one random variable for each category of a second random variable. Pie charts are used where the size of each segment is proportional to the importance of the data category of a random variable for the whole. These methods of presentation were implemented as they are easy for the researcher to sift and organize data into manageable form. The data would be converted into a way that helps to communicate effectively as it shows relationships that will take many words to explain and give quick visual impression that enables the reader to compare and understand the data quickly. Graphs and pie charts would enables the reader quickly observes the relationship of variables being studied. Tables help the researcher present quantitative data in well manageable manner.

3.8.0 Chapter Summary
Descriptive research method was used in the research. The chapter outlined sampling issues, types of data obtained and the methods of data collection and analysis procedures. The
researcher used a sample of eight firms, which were stratified into four categories which are; mining, manufacturing, finance and hospitality sectors drawn randomly from Zimbabwe Stock Exchange. The researcher outlined how data gathering would be executed using questionnaires and interviews. Multiple bar charts, pie charts, line graphs and tables were identified as the methods of data presentation. Next chapter would scan, sift organize and summarize collected data.
CHAPTER IV
DATA PRESENTATION, ANALYSIS AND DISCUSSION

4.1.0 Introduction
The purpose of this chapter is scanning, sifting, organizing and summarizing collected data. The researcher has presented the findings in both writing and graphic communication. Data presentation in form of tables, figures and graphics helps to communicate effectively as it shows relationships that will take many words to explain, give a quick visual impression that enables a reader to compare figures quickly. The research findings were organized in a thematic approach, thus themes were derived from the research questions.

4.2.0 Knowledge about inflationary environment
From the research it is evident that all the respondents are well versed with the inflationary environment. Some further outlined it as the most influential factor to the day to day running of the business. The table below summarizes the responses given on the issue of macroeconomic factors.

Table 4.1: understanding Hyperinflation

<table>
<thead>
<tr>
<th></th>
<th>Number of respondents</th>
<th>Percentage of respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>8</td>
<td>100%</td>
</tr>
<tr>
<td>No</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>Total</td>
<td>8</td>
<td>100%</td>
</tr>
</tbody>
</table>
Source: Primary Data

The findings from the table indicate that all the respondents are well versed with an inflationary environment. Therefore, the results shall have an element of validity, since respondents are aware of the independent of the research question, which is the major aspect to use when determining its relationship with researched variables.

4.4.0 Capital Investments in an inflationary environment

The theme sought to assess if there are any capital investment projects being undertaken in inflationary environment. Suggested results would be identified. The researcher identified that during inflationary period, all researched firms undercut their capital expenditures as shown by the below table.

<table>
<thead>
<tr>
<th>Sector</th>
<th>Year 2000</th>
<th>Year 2001</th>
<th>Year 2002</th>
<th>Year 2003</th>
<th>Year 2004</th>
<th>Year 2005</th>
<th>Year 2006</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manufacturing</td>
<td>15%</td>
<td>25%</td>
<td>27%</td>
<td>35%</td>
<td>55%</td>
<td>65%</td>
<td>75%</td>
</tr>
<tr>
<td>Mining</td>
<td>18%</td>
<td>33%</td>
<td>45%</td>
<td>57%</td>
<td>65%</td>
<td>75%</td>
<td>80%</td>
</tr>
<tr>
<td>Hospitality</td>
<td>16%</td>
<td>34%</td>
<td>54%</td>
<td>59%</td>
<td>62%</td>
<td>68%</td>
<td>85%</td>
</tr>
<tr>
<td>Finance</td>
<td>10%</td>
<td>28%</td>
<td>39%</td>
<td>45%</td>
<td>57%</td>
<td>67%</td>
<td>71%</td>
</tr>
</tbody>
</table>
Source: Primary Data

The results from the table show that all the assessed firms reduced their investment expenditures at an increasing rate from the period 2000-2006. During the same period observed annual inflation rate was increasing persistently.

Most of the respondents cited that financing of the investment projects was difficult due to the decreasing purchasing power of the Zimbabwean dollar, as it was difficult for the firms to save their money until it is sufficient to undertake capital investments. This result agrees with Vigario (1992), who states that during inflationary periods it would be difficult for firms to budget for capital expenditures.

All respondents suggested that during inflationary periods it was difficult for decision makers to forecast and implement long term investments due to project risk, inflation risk and credit risk. These factors brought uncertainty conditions within the business environment. Therefore, they hedge themselves against these risks by reducing their investment projects. This result is in tandem with results by Porter and Berger (2007) in their research of capital budgeting under uncertainty conditions, which postulates that credit risk and inflation risk are related to inflation and hinder capital budgeting process.

One third of the respondents cite that capital investments undertaken during inflationary periods failed due to the failure to identify all attributes involved in decision making of capital projects. These attributes critical paths of the project and various factors which relate to the project. Some respondents further explained that inflationary environment resulted in most of these attributes being difficult to identify, such as forecasting of total costs of the project.
This result is directly related to the Multiple Attribute Decision Model (MADM) cited, which states that there are multiple attributes involved in capital projects and each attribute in decision needs to be weighed differently.

As suggested by Kannadhasen (2003), managers should be able to identify expected inflation, for them to identify expected inflation to anticipate the buying power over time of the project and make suitable adjustments in their proposals to avoid the adverse effects of inflation. However, research done shows that it was difficult for managers to anticipate the expected inflation rate, due to the high magnitude of the inflation ravaging Zimbabwe’s economy; therefore, managers were forced to reduce capital investments to mitigate the failure risk.

4.5.0 Effects of Inflation on Cash Flows
Respondents from all the surveyed firms, note that there was an increase in cash flows from the projects undertaken, increase were in monetary terms only as the increase was not relating to the decreasing purchasing power of the generated cash flows. This result agrees with Drury (2000) who explained that increase in the cash flows is an illusion as it does not relate to the purchasing power of the generated cash. Increases of cash flows include both inflows and outflows.
Fig 1: Relationship between Cash Flows and Inflation
Source: Primary data

The above diagram shows the relationship between inflation rate and cash flows generated. Research shows that mining, manufacturing, finance and hospitality sectors’ cash flows are increasing as the inflation rate increases. Costs of production and prices thus revenues rise in monetary values as inflation rate increases. According to Mills (1996), investment decision makers should consider the present and the future values of the cash flows not merely prefer positive cash flows without considering their values.

According to Van Horne (2003), inflation should be anticipated and embody for inflation, then estimated cash flows must also reflect inflation. In some firms it was discovered that some of the projects were chosen without anticipating inflation, unfortunately inflation started to hit the economy such that these projects became idle as nothing of value was generated from them. Furthermore results show that 90% of the firms studied put a premium for inflation on anticipated cash flows relating to the project. However, levels of inflation in Zimbabwe have drastically shot to unanticipated levels such that premiums set were exceeded and became of no use. In case of cash inflows generated from sales of products, prices were continuously increasing with unexpected rate. On the other side of cash flows, inflation was increasing at an alarmingly rate such that it affected both future wages and material costs to be higher than what was being expected, thus the project ended up as a ‘dog’ in the investment portfolio of the firm.
4.6.0 Investment Appraisal Methods used and their applicability in an inflationary environment.

Fig 4 Analysis of Investment Appraisal Methods Implemented by Sectors Researched
Source: primary Data

From the questionnaires and interviews done it shows clearly that all three methods of investment appraisal were combined to determine viable projects to undertake. From the pie chart above it would appear that greater proportion of all firms are using NPV, IRR by 35%, and Payback method is used by 10% of the firms surveyed. Pay back was the least used as it does not include the concept of time value of money; therefore, it is useless during inflationary periods.

Seventy Percent (70%) of the managers identified that the above appraisal methods are not effective in determining the viable project, reasons given are:
1. Inflation has risen to unexpected levels where it was difficult to forecast and measure its magnitude, since prices were changing many times a day.

2. The business environment was all about speculation such that the use of investment appraisal was of no use, where they applied it was for the sake of abiding to account systems and concepts.

3. Political instability in the economy was causing some projects to fail as investors were moving away due to high political risk.

4. Some projects would appear as viable from investment appraisals but they were difficult to implement due to lack of factors of production such as skilled workforce, inputs and capital to employ.

4.8.0 Chapter Summary

This chapter has looked at the major findings of the research and went on further to analyse and discusses those findings in relation to the set research objectives and research questions. It commenced by looking at the questionnaire response rate for the two groups of respondents in the research. The findings generated from the researched companies generally shows and agree with the literature review and past studies done that inflationary environment greatly affects capital investment of a firm, that is capital budgeting, capital budgeting concepts which are cash flows, cost of capital, investment appraisal methods are negatively affected therefore it becomes difficult to select viable projects in the inflationary environment. On the other hand, the study shows that political instability and lack of factors of production hinder the implementation of investment appraisal methods to choose viable projects to undertake. The next final chapter shall outlines summary and results of the research and table generated from the study.
CHAPTER V
SUMMARY, CONCLUSION AND RECOMMENDATION

5.1.0 Summary of Findings
The researcher discovered that inflation to greater extend affects negatively capital budgeting process. Most of the capital investment projects undertaken during inflationary period failed and most of the firms undercut their investment capital expenditures due to the constant reduction of the purchasing power. There is a positive relationship between inflation and cost of capital, thus as the inflation rate increases cost of capital would follow suit. This would result in high interest rates and high cost of executing such projects. Inflationary environment causes cash flows to increase; however, increase of these cash flows is merely in nominal magnitude whilst value is being eroded by inflation. For effective selection of capital investment project there is need for appraisal techniques. Net Present Value (NPV) and Internal Rate of Return are the major techniques used. However, it was discovered that their effectiveness is being diluted by volatile economic environment greatly characterized by high unexpected inflation levels. Some of the factors to consider are not tabled by investment appraisal techniques. These consist of political, legal, social, environmental and risk factors.

5.2.0 Conclusion
i) All firms undercut their capital investment expenditure as the inflation rate increases. Inflation resulted in reduction of the purchasing power, therefore cash flows generated from investments are of lower value as compared to the initial capital tied up to the
project. Most firms reduce their capital expenditure due to increased cost of capital, political instability, which forced many foreign investors to withdraw their investments.

ii) inflation makes it difficult for decision makers to forecast and implement successful long term investments because purchasing power of money saved for the projects loses its value during this unstable environment, it is difficult to source adequate finance. Investors are also forced to undercut their expenditures due to the uncertainties associated with inflation risk, project risk and credit risk.

iii) Most capital investments undertaken during inflation fail due to failure to identify all attributes involved in decision making of capital projects. These consist of critical path, actual total costs of the project and factors of production required for the project.

iv) During inflation cash out flows and inflows increase in monetary terms only, whilst the real value decreases, thus it is an illusion to decision makers. Premiums for the anticipated inflation on cash flows are set, however, levels of inflation shoot to unexpected magnitude such that set premiums were exceeded and became of no use.

v) The study shows that there is a positive relationship between inflation and cost of capital, this is because an increase in inflation rate causes an increase in the interest rate thus directly pushing up cost of capital.
5.3.0 Recommendations

i) Finance, Investment and Project managers should continuously impacted with knowledge of the current business environment so that they would be able to make informed decisions. This can be done through regular refresher courses.

ii) Whenever a project is to be planned there should be a board of trustees, which manages the funds relating to the project to be undertaken. It would source adequate funds at the right time, investing any excess funds somewhere in stable markets or convert the funds for the project into a foreign currency which is stable to hedge against inflation risk.

iii) Decision makers should continually update their forecasting methods of the business environment. Various techniques which include both qualitative and quantitative techniques should be employed for success.

iv) When forecasting cash flows, inflation must be reflected in a discount rate that contains it. Therefore, a bias is introduced if nominal cash flows are discounted at real and not nominal cost of capital. Thus, nominal cash flows must be treated with nominal cost of capital.

vii) Decision makers should employ investment appraisal techniques in light of qualitative evaluation of the operating business environment that is identify strengths, weaknesses, opportunities and treats of the business.

viii) This study recommends further research on the effects of inflation on capital budgeting of firms within the same industry in order to establish trends of the results and identify potential hedging instruments against the inflation.
References


Appendix 1

Dear Response

I am a student at Bindura University of Science Education, studying for a Bachelor of Business studies in Banking and Finance degree. I am carrying out a research project which is on analyzing the effects of inflationary environment on capital budgeting.

Information is strictly private and confidential, it shall be used for academic purposes only and you are not required to write your name.
Questionnaire for Management
An analysis of the effects of an inflationary environment on capital budgeting.

INSTRUCTIONS:

Show response by ticking the respective answer box where applicable and or filling in the spaces provided.
1. What do you understand about inflationary environment?

2. During inflationary periods did you undertake any long term investments such as acquisition of assets?

3. How inflation has affected cash flows from the undertaken investments?

4. From your observation what was the relationship between inflation costs of capital of the projects undertaken?

5. Which method or methods you use to appraise capital investments?

   i. Net present value [ ]

   ii. Internal rate of return [ ]
iii. Accounting Rate of Return [ ]
iv. Payback Method [ ]

6. How does the Method used above applicable in inflationary environment?
Appendix II
An evaluation of the effects of an unstable environment on capital budgeting.

Interview Schedule:

1. What do you understand by inflationary environment?
2. Do you undertake Capital investments during inflationary periods?
3. What are the effects of inflation on capital budgeting you identified?
4. May you briefly explain the relationship between inflation and cost of capital?
5. What are the effects of inflation on cash flows of any undertaken project?
6. Give any investment appraisal methods used for the past ten years to help in decision making?
7. Explain investment appraisal were applicable in an inflationary environment?
Contents

CHAPTER I ........................................................................................................................................... 1

INTRODUCTION ..................................................................................................................................... 10

1.1.0 Background to the problem ........................................................................................................... 10

1.2.0 Statement of the problem ............................................................................................................... 11

1.3.0 Purpose of the study ...................................................................................................................... 12

1.4.0 Research questions ....................................................................................................................... 12

1.5.0 Significance of the study ............................................................................................................... 12

1.5.0 Assumptions .................................................................................................................................. 13

1.7.0 Delimitations of the Study .......................................................................................................... 14

1.8.0 Limitations ..................................................................................................................................... 14

1.9.0 Definition of Terms ....................................................................................................................... 15

1.10 Organization of Study .................................................................................................................... 16

1.11 Chapter Summary ............................................................................................................................ 16

CHAPTER II ......................................................................................................................................... 18

LITERATURE REVIEW .......................................................................................................................... 18

2.1.0 Introduction ................................................................................................................................... 18

2.2.0 Inflation and capital investment ................................................................................................... 18

2.3.0 Effects of inflation on Cash Flows ................................................................................................. 21

2.4.0 The Relationship between cost of capital and inflation ............................................................... 24

2.5.0 The relationship between Investment Appraisal Methods and Inflationary Environment ....... 30

2.6.0 Chapter Summary ....................................................................................................................... 35

CHAPTER III .......................................................................................................................................... 36

RESEARCH METHODOLOGY .................................................................................................................. 36

3.1.0 Introduction ................................................................................................................................... 36