

# CHAPTER- I

## INTRODUCTION

### 1.1 Background of the Study

Nepal is a small, least developed and landlocked country situated between two large countries India and China witnessed an impressive growth in 2008 i.e. 9 percent and 11.9 percent respectively. Whereas, Nepal has only 3.9 percent economic growth rate in 2008 and per capita income of Nepal was \$ 470 in 2008.

Nepal is a sovereign independent country formerly known as the Kingdom of Nepal, now Federal Republic of Nepal since 15th Jyestha, 2065 as per the decision of Constitutional Assembly. In fact, it was the demand of the people of Nepal endorsed by the Second popular movement 2062-63. But, restructuring of the state is in process through the Constitutional Assembly. Nepal is a landlocked country with an area of 1, 47,181 sq. km and is situated between the world's most populated countries China in the north and India in the rest fronts. The total area of Nepal is 0.3% of Asia which is 0.03% of the world. Nepal is known to be a country of natural beauty between the latitude of 26°22'N to 30°27'N and longitude of 80°4'E to 88°12'E. The elevation of the country ranges from 70 m above sea level to the highest on Earth. The land of Himalayan region is standing vertically up to the height of 8848m with a renown Mt. Everest. (Economic Survey, 2009)

It has lots of problem as well as prospectus too. Unemployment is said to be the biggest problem of the country. Nepal is an agricultural country. Most of the people of the nation are primarily engaged in agricultural sector and they are depended on agriculture to fulfill their basic needs. A weak economy in one country may be offset by a strong economy of Nepal, it is very essential to develop the infrastructure and facilities for the establishment of manufacture and processing industries. Industries have not been developing to the extent of

expectation in Nepal. The reason for it is the lack of dashing entrepreneurs as well as the inappropriate business environment. We can trace the industrial development process in Nepal mainly after establishment of Biratnagar jute mill and Udhyog Parishad in 1936.

## **1.2 History of Manufacturing Companies in Nepal**

Industrialization is a comparatively new phenomenon in Nepal. The Biratnagar Jute Mills set up in 1936 marked the beginning of organized manufacturing industry in the country. In the years that followed industrial growth was accelerated. Manufacturing industry like the Morong Cotton Mills (1941), the Morong Sugar Mills (1946), the Raghupati Jute Mills (1946) and the Juddha Match Factory (1946) were set up in Biratnagar in collaboration with Indian businessmen.

The history of industrial growth in Nepal can be divided into three distinct areas. They indicate the evolution activities in Nepal.

### **) Era of craft and cottage industries**

Ancient history reveals that, Nepal had few small cottage industries; such small cottage industries were the major sources of earning foreign currency. There was a Benepa - Dati Trade route in around seventeenth century (639A.D). The route had highly encouraged the Nepal- Tibet trade, which in turn, encouraged to cottage type industry. It was considered that export-oriented industries were appreciated in those days highly. King Prithvy Narayan Shah had emphasized the growth and development of cottage and rural industries. There was evident that Nepal learnt the technology of paper making 900 years ago. This was mentioned by kaultyla and Hiuen- isng history of India and China respectively. (Shrestha, 1967)

Previously, history revealed that many industries of cottage type were flourished. And it was a source of foreign currency earning. But it could not continue even up to Rana Regime because of lack of the modernization of such industries.

### **) Era of haphazard Industrial growth**

The history of industrialization in Nepal date back to 1936 (Pradhan, 1989). In the same year, Indian entrepreneurs with Nepali counter parts established a Jute Mill at Briatnagar, south east Nepal, adjacent to Indian border. However, the Rana regime (1836- 1951) had little concern with the industrialization of the country. During the Second World War, the shortage of manufactured consumer's goods from the more developed countries forced to establish domestic industries. Rice milling and oil extraction were the most important areas in which the new companies operated, but they also manufactured matches, paper, soap, furniture, cotton and wood textiles, jute(two mills), glass and ceramics.

When the war ended the distribution of goods decreased. So many industries established between 1939 and 1950 went into heavy losses and were eventually forced to close down. For instance, more than half of the rice and oil mills established during 1946/47. The period was noted for social unrest. Strikes and lock outs frequent between 1953 and 1956, in the jute and cotton mills. Potential investors become cautions and preferred to invest their savings in less risky areas. Not a single joint stock company was established until 1960.

During the Rana regime there was no industrial policy. The then Government of Nepal after 1951 A.D, recognized that, the cottage industries will have a very important place in the economy because of hilly reasons of Nepal. (Pradhan, 1984)

## ) **Era of planned industrial growth**

Nepal entered the era of planned development in 1956. Since then, the country has accumulated a rich experience of implementing ten development plans extending over a period of 50 years. The growth of industries during the various plan periods has been mixed. Nepalese economy suffers from structural constraints. Industrial planning is an inevitable requirement of the nation. The announcements of new industrial policy were started in June 1958. (Pant & Pant, 2006)

The first elected government in 1958 made efforts to speed up the activities in various projects such as cottage industries, Establishment of industrial development cooperation (IDC) was established and later converted into Nepal industrial development corporation (NIDC) in 1959 to assist private industries and encourage small industries. Establishment of the timber corporation with a view to utilizing the forest products in the most scientific way and finally industrial estate were set up in Balaju through India aid, a detailed survey of Phulchoki and industrial state Bandipur were completed.

The second plan (1962- 1965) recognized, a certain number of new industries would be set up in the private sector. Preference being given to such industries as are designed to reduce unemployment through utilization of raw materials available in the country and to build up a foreign exchange reserve by lessening imports and promoting exports

Under the third plan (1965-1970) facilities such as execution of income tax, export duty, import duty, provision of foreign exchange for the priority sector industries, reputation of certain percentage of profits and capital were to be provided, and the plan emphasized that cement, lime and mica factories were to be established in the public sector and other industries were established either in the public sector or the private sector in accordance with the priority fixed.

The fourth plan (1970- 1975) emphasized significantly on encouragement to the establishment of industries mainly in the private sector. Priority was also given to labor intensive industries, and the plan also recognized that the facilities to be provided to industries in each class would be clearly stated in view of the long term requirements of the country. Establishment of a number of industrial districts outside the Katmandu valley was envisaged and this trend was supported to contribute to regional development.

The objective of the fifth plan (1975- 1980) was to increase the output of the industries already established and set up some new industries. Despite power failure and labor unrest in the second part of the plan period, the industrial production registered a yearly growth of 6.7%.

The main principles of the sixth plan (1980- 1985) was to highlight the development of cottage and small industries. Emphasis was placed on the progress of cottage and small industries so as to multiply employment prospects for low-income people and help in reducing the inequality. An industrial policy was evolved in 1981 together with industrial enterprises act and foreign investment act. The main objectives of the existing industries spur foreign investment and provide stimulus for industries in remote areas (pant 1991).

During the seventh plan (1985- 1990) a new industrial policy was launched in 1987. It aimed at raising self- replace (increasing the contribution at industry G.D.P formulating job opportunities, and reducing the balance of payments.

The eight plan (1992 - 1997) was instrumental in creating added infrastructure for industrial development by introducing Industrial Policy 1992, Industrial Enterprise Act 1992, Foreign Investment Policy 1992, Privatization Act 1994 etc. During the

planned period one window facility secretariat was set up, national productivity council was established. 1443 medium and large industries were registered during the period.

During the ninth plan (1997- 2002) the key policies were privatization of public enterprises, encouragement to foreign investment, leading role to private sector, reform in legal framework and encouragement to clean technology. Training was provided to 112, 676 persons for the promotion of cottage and small industries.(Agrawal, 2005)

The tenth five plan (2002-2007) is in operation over. The main objective of the plan is to make economic sector of country effective, healthy, dynamic and competitive by maximum utilization of a available resource. The plan conceives to expand the role of private sector for higher economic growth and effective operation of poverty alleviation programme. The plan has given emphasis on investor friendly environment for forward economic improvement and acceleration of privatization programme effectively. (Tenth plan, 2007)

### **The Interim three year plan period (2007-2010)**

At present, the interim three year plan is in operation. The main goal of the interim plan is to prepare a basis for economic and social transformation for building a prosperous, modern and just Nepal. The main objectives of this plan are to realize changes in the life of people by reducing poverty and existing employment problem and establishing sustainable peace. The target to reduce the people bellow poverty line from 31% TO 24% as well as employment growth rate from 3% to 3.5% and women participation will be 33% for each sector. Poverty alleviation and employment are the primary challenges of the plan is to give continuity to poverty alleviate efforts and reduce their increasing gap between rich and poor. The following policies will be taken for poverty alleviation and employment

promotion. Investment will be increased for reconstruction, rehabilitation, reintegration and infrastructure development. The strategy of economic growth based on inclusiveness will be favorable to poverty alleviation.(Interim plan,2007 )

### **1.3 Introduction of Capital Budgeting**

Capital budgeting is the process of planning and controlling the strategic (long term) and tactical (short term) expenditure for expansion and contraction of investment in operating (fixed) assets. (Welsch, Hilton & Gordon, 1992)

The main exercise involved in capital budgeting is to relate the benefit to cost in some reasonable manner, which would be consistent with the value maximizing objectives of the business. Capital budgeting decision is the most important area of managerial decisions as it involves more extended estimation and prediction of things to come requiring a high order of intellectual ability of their economic analysis.(Goyal & Mohan, 1997)

Capital Budgeting is the process of Making those long term planning decisions for investments and focuses primarily on projects or programmers whose effects span multiple time periods. ( Horgren, Foster & Datar, 1999)

Capital Budgeting is paramount important as a framework of future development, and as a major determinant of efficiency and competitive power of a firm. It relates to fixed or long-term assets, which are defined as assets that are in operation and yield returns over a period of time. It, therefore, involves current outlay in return for a series of anticipated future benefits. (Khan & Jain, 2003)

Capital budgeting is the process of determining which potential long-term projects are worth undertaking, by comparing their expected discounted cash flows with their internal rates of return.

Capital budgeting is the process of making long-term planning decisions for capital investments. There are typically two types of investment decisions: (1) Selecting new facilities or expanding existing facilities. Examples include: (a) investments in long-term assets such as property, plant, and equipment; and (b) resource commitments in the form of new product development, market research, refunding of long-term debt, introduction of a computer, etc. (2) Replacing existing facilities with new facilities. Examples include replacing a manual bookkeeping system with a computerized system and replacing an inefficient lathe with one that is numerically controlled. As such, capital budgeting decisions are a key factor in the long-term profitability of a firm. To make wise investment decisions, managers need tools at their disposal that will guide them in comparing the benefits and costs of various investment alternatives. Many techniques used for evaluating investment proposals are widely available. They include payback, accounting rate of return, Internal Rate of Return, and the Net Present Value method. (Fox, Alison & Keith 1990)

Thus, the capital budgeting is the process of identifying, analyzing, and selecting investment projects whose returns (cash flows) are expected to extend beyond one year.

#### **1.4 Role of Capital Budgeting**

The term of capital refers to long term asset used in production, while a budget is a plan which details projected inflows and outflow during some future period. Capital budgeting is the process of planning and controlling the strategic (long term) and tactical (Short term) expenditure on fixed assets such as land and building, plants and machinery, furniture and fixtures, vehicle, major renovations and patents. Typically, capital expenditure project tied up large amount of cash, other resource and debt for the long Period.



Capital budgeting is a decision making process for an investment on fixed assets. It can be defined as the firm's decision to invest its current funds most efficiently in the long term assets in anticipation of on expected flows of benefits over a series of years. It concentrates on the allocation of scarce resources between alternative used in order to obtain best objectives.

Capital budgeting is the process of planning and controlling the strategic (long-term) and tactical (short-term) expenditure for expansion and contraction of investment in operating (fixed) asset.

Capital budgeting as the decision making is the process by which firms evaluate the purchase of major fixed assets including building machinery and equipment. It is also covers decision to acquire other firms either thought the purchase of their common stock or groups of assets that can be used to conduct an ongoing business.

Capital budgeting is of paramount importance as a framework of future development, and as a major determinant of efficiency and competitive power of firm. It is relates to fixed or long-term asset, which are defined as assets that are in operation and yield returns over a period of time. It therefore, involves a current outlay in return for a series of anticipated future benefits.

The main exercise involved in capital budgeting is to relate the benefits to costs in some reasonable manner, which would be consistent with the value maximizing objectives of the business. Capital budgeting decision is the most important area of managerial decision as it involves more extended estimation and prediction of things to come requiring a high order of intellectual ability of their economic analysis. Heavy spending on capital assets since the Second World War has

stimulated a genuine and lively interest on the part of the economists' financial analysis, and accountants in managerial approaches to capital budgeting decisions.

Capital budgeting consists in planning for development of available capital for the purpose of maximizing the long term profitability (return on investment) of the firm. It as Long term planning for making and financing proposed to capital outlay. On the basis of the above definitions, it can be said the capital budgeting is related to fixed assets. It is a long term planning. It is an exchange of current fund with future benefits and benefits will occurs over a series of years. It can not only be taken as the budget process but also as a tool for making various investment decisions. (Horngren & Garry, 2001)

### **1.5 Statement of the Problem**

The problem towards which study is directed identifies the long-term investment decision in manufacturing company of Nepal. Nepalese manufacturing companies are not performing well as is evident from their annual reports. Poor performance is the outcome if poor planning, controlling and decision making. This has raised the question whether Nepalese managers are competent enough? Do they practice management accounting tools and techniques particularly capital budgeting to carryout planning, decision making and controlling functions?

The main purpose of budget is to ensure the planned profit of the enterprise. So, it is considered as a tool of planning and controlling the profit. On of the primary objective of an annual budget is to measure the profit expectation for the next financial year with regarded to all the circumstances favorable and unfavorable that can influence the trading prospect.

The research questions posed in this research were:

- ) Whether or not Nepalese manufacturing companies are practicing Capital Budgeting tools?

- ) Which of the capital budgeting tools are mostly practiced and which aren't practiced till now?
- ) How the manufacturing companies can apply capital budgeting tools to improve the competitiveness of the Nepalese companies?
- ) What are the major difficulties in the application of Capital Budgeting?

### **1.6 Objectives of the Study**

The main objective of this research was to examine and study the capital budgeting practices in manufacturing companies of Nepal. The specific objectives were:

- ) To study and examine the present practice of capital budgeting tools in the manufacturing companies of Nepal.
- ) To identify the difficulties in applying capital budgeting tools in Nepalese manufacturing companies.
- ) To make recommendations to overcome the difficulties in applying capital budgeting tools in Nepalese manufacturing companies.

### **1.7 Significance of Study**

The present research work is the study of the practice of capital budgeting tools in manufacturing companies of Nepal. This study will be significant in the following ways:

- ) It examines the application of capital budgeting tools in manufacturing companies of Nepal.
- ) It explores the problems and potentialities of the selected companies. It will be useful to the potential investors, lenders, managers and policy makers.
- ) It provides information on the application of the tools under different circumstances. Thus, it will encourage the use of capital budgeting tools in decision making to those companies who have yet used any tools.

- ) Last but not the least, it provides literature to the researcher who wants to carry on further research in this field.

### **1.8 Limitations of the Study**

The present research has the following limitations:

- ) The study is concerned with capital budgeting. It does not consider the economic aspects of the companies.
- ) The study is focused on the selected manufacturing companies. Thus, the findings might not be applicable to other companies of Nepal.
- ) The research is based on primary data only. No secondary data has been used for this present study.
- ) This study pays attention to the practices of capital budgeting only. It does not consider the implementation aspects of the tools.
- ) The data were collected through questionnaire. The information's are based as perceived by the finance executive of respective manufacturing companies. In this context the actual practices and the perceived practices might be different.

### **1.9 Organization of the Study**

This has been divided into five chapters. They are:

1. Introduction
2. Review of Literature
3. Research Methodology
4. Data Presentation and Analysis
5. Summary, Conclusions and Recommendation

The introduction chapter covers role of capital budgeting in management accounting, statement of the problem, research objectives, significance of the study and limitation of the study.

The second chapter focuses on review of literature. It contains the conceptual frame works and past relates literature on profit planning and control area of capital budgeting.

The third chapter deals with the research methodology to be adopted for the study consisting research design, sources of the data, data gathering procedure, population and sample, research variables and data processing procedure.

The fourth chapter deals with presentation, analysis and interpretation of data. It consists analysis of questionnaires, analysis of open end opinions and major findings of research.

The last chapter covers summary, conclusions and recommendations.

## **CHAPTER-II**

### **REVIEW OF LITERATURE**

Review of literature is a way to discover what other research in the area stated problem has uncovered. It provides foundation for present study, establishes a point of departure for future research, avoids needless duplication of costly effort, and reveals areas of needed research. It enables the researcher to know about what research has been done in the subject, what theories have been advanced the approach taken by other researchers and shows gap to fill through the proposed research.

Several research works has been done in various aspects of manufacturing companies, especially financial performance, investment policy, resource mobilization, lending policy etc. There are some books, journals, articles, other studies done related with capital budgeting practices of manufacturing companies. Some of the relevant studies, literatures on capital budgeting practices are reviewed below.

#### **2.1 Conceptual Framework**

The purpose of including this chapter is to clarify the concept of Capital Budgeting Decision of manufacturing companies. Cash flow estimation, payback period, Accounting Rate of Return, Net Present Value, Profitability Index and Internal Rate of Return has been reviewed with the help of related text books, reference book and articles etc.

##### **2.1.1 Definition of Capital**

In general, capital refers to an investment in goods or services that provide benefits over a period of time after their acquisition. However, a substantial portion of governmental spending could be viewed as providing a stream of

benefits over an extended period, beyond those activities typically associated with the term “capital.” (Robert D. Reischauer, 1998)

Specific definitions of capital can vary significantly depending on the purpose. Some definitions focus narrowly on physical infrastructure, such as highways and buildings; others focus more broadly and include intangibles, such as investment in education and social services. Such differentiation greatly affects the scope of what is considered capital. Each classification has potential shortcomings: A broad definition might encompass so many activities as to make the categorization unhelpful and could invite criticism that a capital budget would simply be a device for understating the cost of federal spending; a narrow definition could lead to a bias against spending that does not directly result in the acquisition of physical assets. (E. O’Neill, 1998)

Capital expenditure is an expenditure intended to benefit future periods, in contrast to a revenue expenditure, which benefit a current period; an addition to a capital asset. The term is generally restricted to expenditures that add fixed assets units or that has the effect of inversing the capacity, efficiency, life span or economy of operation of an existing fixed asset.

From the above definition it follows that capital expenditure is one which result in:

- ) Increase in quantity of fixed assets.
- ) Increase in quality of fixed assets.
- ) The replacement of fixed assets.

Expenditure charged against operation a term used to contrast with capital expenditure. While capital expenditure is any expenditure benefiting a future period, revenue expenditure is intended to benefit the current period. Examples are

- ) Expenses incurred in the normal course of business, e.g. expenses of administration, expenses incurred in manufacturing and selling products.
- ) Expenses incurred to maintain the business, e.g. replacement for maintaining the existing permanent assets: cost of stores consumed in the course of manufacturing, e.g. oil, cotton waste.
- ) Cost of goods purchased for resale.
- ) Depreciation on fixed assets, interest on loan of business, loan from sale of fixed assets.
- ) Obsolescence cost.

### **2.1.2 Capital Budgeting**

Capital budgeting is a required managerial tool. One duty of a financial manager is to choose investments with satisfactory cash flows and rates of return. Therefore, a financial manager must be able to decide whether an investment is worth undertaking and be able to choose intelligently between two or more alternatives. To do this, a sound procedure to evaluate, compare, and select projects is needed. This procedure is called capital budgeting. Capital budgeting is investment decision-making as to whether a project is worth undertaking. Capital budgeting is basically concerned with the justification of capital expenditures.

A capital investment decision also known as capital budgeting decision, is related to the concerned organization's long term bulk expenditure. It involves process of planning future net cash flows over the life of the project and of selecting the best course of action that yield positive net present value. Capital investment decision means evaluating business opportunity that involves a current outlet, but that are likely to produce benefit over a period of time. A capital budgeting should have the following characteristics:



### ) **Long term investment**

Purchasing inventories is not dealt with under capital budgeting decision because the life cycle (inventory- accounts receivable – cash) is not of more than a year. A decision to start a new production line or to buy a new machine is a capital budgeting decision because its life cycle is of more than a year.

### ) **Bulk amount of investment**

Purchasing a calculator does not come under capital budgeting decision because the amount is not so material even if the life cycle is of more than a year. (Bhajracharya, Ojha, Goet & Sharma, 2005)

Capital Budgeting is importance because capital budgeting decisions impact the firm for several years, they must be carefully planned. A bad decision can have a significant effect on the firm's future operations. In addition, the timing of the decisions is important. Many capital budgeting projects take years to implement. If firms do not plan accordingly, they might find that the timing of the capital budgeting decision is too late, thus costly with respect to competition. Decisions that are made too early can also be problematic because capital budgeting projects generally are very large investments, thus early decisions might generate unnecessary costs for the firm.

The ideas for capital budgeting projects usually are generated by employees, customers, suppliers, and so forth, and are based on the needs and experiences of the firm and of these groups. For example, a sales representative might continue to hear from some of his or her customers that there is a need for products with particular characteristics that the firm's existing products do not possess. The sales representative presents the idea to management, who in turn evaluates the viability of the idea by consulting with engineers, production personnel, and perhaps by conducting a feasibility study. After the idea is confirmed to be viable in the sense it is saleable to customers, the financial manager must conduct a capital budgeting

analysis to ensure the project will be beneficial to the firm with respect to its value. (Richard, 1983)

### **2.1.3 Limitations of Capital Budgeting**

Capital budgeting can be a useful tool in the analysis of large projects. However, there are serious limitations that must be considered when evaluating the results of these projects. These limitations can be used to manipulate the results of an otherwise unfavorable project and make it appear to have a larger return than it actually has. While the weaknesses in these sample projects are obvious, they can be effectively hidden in larger projects where the descriptions and financial data can run into hundreds of pages.

Modern accounting and finance textbooks spend significant time discussing the techniques of capital budgeting calculations but are woefully inadequate in terms of the shortcomings of the various methods. Numerous misconceptions and limitations exist and a misunderstanding of these limitations can cause incorrect decisions to be made.

For those methods that do use present value techniques it is necessary to either have a predetermined discount rate or to calculate one. This discount rate goes by many names:

- ) Hurdle rate – implying this is an amount you must exceed to make this a suitable project.
- ) Cost of Capital – implying that this is what it cost to obtain the required capital and that the projects return must equal or exceed this.
- ) Required Rate of Return – an indication that this is the minimum amount the project can return.

The company usually sets this rate, often without a clear understanding of what it really means. The rate is usually a minimum amount and it is then adjusted upward for risk. A company might classify projects as A, B or C with C being the riskiest project. Projects classified “A” might have nothing added to the discount rate while “B” projects would have a certain amount added with an even larger amount added for the “C” projects. Companies generally assume they are actually earning the discount rate if they achieve a NPV of zero or greater. (Lawrence, 1997)

#### **2.1.4 Tools and Techniques of Capital budgeting**

More purposes for project are at the threshold of the business firm comparing to its ability and wiliness to finances some proposals good, other are different and at others poor. A screening has to be devised for finding out the real content of such proposal. Methods of differentiating them should be developed. (Goal & Man Mohan, 1997)

For this purpose, numerous methods of measuring the economic value of an investment can be found. The methods of appraising capital expenditure proposals can be classified in to two broad categories:

##### **) nsophisticated or Traditional Methods**

#### **Payback Period**

The payback period is the traditional method of capital budgeting. It is the simplest and perhaps the most widely employed quantitative method for appraising capital expenditure decisions. This method answers the questions; how many years will it take for the cash benefit to pay the original cost of an investment normally disregarding salvage value? Cash benefit here represents CFAT, ignoring interest payment. Thus, PBP measures the number of years

required for CFAT it pay back the original outlay required in an investment proposal.

There are two ways of calculating PBP. The first method can be applied when the cash flow stream is in the form of annuity for each year of the project's life i.e. CFAT are uniform. In such a situation the initial cost of the investment is divided by the constant annual cash flow:

$$\text{PBP} = \frac{\text{Investment}}{\text{Constant Annual Cash Flow}}$$

The second method is used when a project's cash flows are not equal but vary from year to year. In such a situation, PBP is calculated by the process of cumulating cash flows till the time when cumulative cash flows become equal to the original investment outlay.

One of the most commonly used methods of capital budgeting is the payback period technique. This method poses the question: "How long will it take to recover the investment?"

Payback determines how early an investment can be recovered. The payback period answers the questions of; how long does it take the project to pay back its initial investment? (Bhajracharya, Ojha, Goet & Sharma, 2005)

Payback period = number of years to recover initial costs

### **Decision Rule**

The shorter payback period is the more attractive the investment. The reasons are that: The earlier the investment is recovered, the sooner the cash funds can be used

for other purpose. The risk of loss from obsolesces and changed economic conditions are less in a shorter payback period.

**The advantages and disadvantages of PBP are:**

**Advantages:**

- ) Easy to Understand
- ) Simple to compute
- ) Provides some information on the risk of the investment
- ) Provides a cute measure of liquidity

**Disadvantages:**

- ) Ignores the time value of money
- ) Ignores cash flows after the payback period
- ) Biased against long-term projects
- ) Requires an arbitrary acceptance criteria
- ) An accepted project based on the payback criteria may not have a positive NPV

**Accounting Rate of Return (ARR)**

The accounting rate of return method of evaluating a proposed capital expenditure is also known as average rate of return method. It is based upon accounting information rather than on cash flow. There is no unanimity regarding the definition of the rate of return. There are a numbers of alternatives methods for calculating the ARR.

Under the accounting rate of return technique, the average annual expected book income is divided by the average book investment in the project. That is:

$$\text{Accounting Rate of Return} = \frac{\text{Average Annual Expected Book Income}}{\text{Average Book Investment}}$$

**Decision Rule:**

With the help of ARR the financial decision maker can decide whether to accept or reject an investment proposal. According to the ARR, as an accept - reject criteria, the actual ARR will be compared with a predetermined or a minimum required rate of return or cut off rate. A project will qualify to be accepted if the actual ARR is higher than the minimum desired ARR. Otherwise; it is liable to be rejected. Alternatively, the ranking method can be used to select or reject proposal. Thus the alternative proposals under consideration may be arranged in the descending order of magnitude, starting with the proposal with the highest ARR and ending with the proposal having the lowest ARR. Obviously, projects having the higher ARR would be preferred to projects, which have a lower ARR. (Khan & Jain, 1996)

This return is an average rate of return because we have used the average book investment. The book rate of return for each return will be different because the average book investment in the project will change with each year's depreciation. The ARR method most often misstates the IRR because it ignores the timing of the cash flows and therefore the time value of money. This fault makes it an unsatisfactory method of capital budgeting.

**) Sophisticated or Time Adjusted Methods****Net Present Value (NPV)**

Net present value (NPV) is a technique that determines the present value of the inflows and outflows and then simply takes a difference between the two. If that difference is positive it is considered to be returning the required rate of return and is an acceptable project. If the amount is negative it is not providing a sufficient return and would be rejected. In the event two or more mutually exclusive projects all have positive net present values then the project with the highest NPV is

selected. The generally accepted advantages of NPV are that it considers the time value of money and is relatively easy to calculate. On the other hand, it is often difficult for laymen to understand the results obtained and (most importantly) it assumes that interim payments received during the life of the project can be invested at the discount rate used in the calculation. This is often not a true statement and can be used to manipulate the results of the analysis. (Horgren, Sundem & Stratton, 1991)

The net present value method requires that all cash flows associated with new investment proposals be discounted at a predetermined weighted average cost of capital.

$$NPV = \sum_{t=1}^n \frac{CF_t}{(1+k)^t} + \frac{S_n + W_n}{(1+k)^n} - \sum_{t=1}^n \frac{CO_t}{(1+k)^t}$$

Where,

- CF<sub>t</sub> = Cash inflows after taxes in year 1 to n (CFAT)
- S<sub>n</sub> = Salvage value (net of removal cost) in the terminal year
- W<sub>n</sub> = Working capital recovered in the terminal year
- CO<sub>t</sub> = Cash outflows required for investment
- K = Weighted average cost of capital

### **Decision Rule**

Decision rule for a project under NPV is to accept the project if the NPV is positive and reject if it is negative. However, in practice, it is rare that such a project is accepted as such a situation simply implies that only the original investment has been recovered. As a decision criterion this method can also be used to make a choice between mutually exclusive projects. On the basis of the NPV method, the various proposals are be ranked in the orders of the net present

values. The project with the highest NPV will be assigned the first rank, followed by others in the descending order. (Khan & Jain, 1996)

The advantages and disadvantages of NPV are as follows:

**Advantages:**

- ) Computes true interest rate
- ) Tells whether the investment will increase the firm's value
- ) Considers all the time value of money
- ) Considers all cash flows
- ) Considers the risk of future cash flows.
- ) Easy to apply because it does not require trial and error approach

**Disadvantages:**

- ) The target or minimum rate is difficult to determine
- ) Does not provide the true rate of return on investment
- ) Assumes that all net cash inflows from an investment are immediately reinvested at the target rate selected for discounting.

**Internal Rate of Return (IRR)**

When we have an investment that creates differing amounts of annual cash flow, we need to determine your rate of return using the Internal Rate of Return (IRR). The IRR is the discount rate often used in capital budgeting that makes the net present value of all cash flows from a particular project equal to zero. Generally speaking, the higher a project's internal rate of return, the more desirable it is to undertake the project. As such, IRR can be used to rank several prospective projects a firm is considering. Assuming all other factors are equal among the various projects, the project with the highest IRR would probably be considered the best and undertaken first.



The IRR is usually the rate of return that a project earns. It is defined as the discount rate, which equates the aggregate present value of the net cash inflows (CFAT) with the aggregate present value of the outflow of a project. In other words, it is that rate which keeps the project NPV zero. (Khan & Jain, 1996)

The project will be accepted only if IRR (r) exceeds the cost of capital (k) symbolically, r is determined as per the equation:

$$\sum_{t=1}^n \frac{CF_t}{(1+r)^t} + \frac{S_n + W_n}{(1+r)^n} - \sum_{t=1}^n \frac{CO_t}{(1+r)^t} = \text{Zero}$$

Where,

CF<sub>1</sub> = Cash inflows after taxes in year 1 to n (CFAT)

S<sub>n</sub> = Salvage value (net of removal cost) in the terminal year

W<sub>n</sub> = Working capital recovered in the terminal year

CO<sub>t</sub> = Cash outflows required for investment

K = Weighted average cost of capital

The IRR is of a project is the rate of discount, which produces a zero NPV.

### **Decision Rule**

The IRR decision rule is that only project with IRR greater than or equal to some predetermine cut- off rate should be accepted. All other investment opportunity should be rejected. The market interest rate reflects the opportunity cost of capital involved. Thus to be acceptable, a project must generate a return at least equal to the return available elsewhere in the capital market. (Khan & Jain, 1996)

The advantages and disadvantages of the IRR can be pointed out as follows:

**Advantages:**

- ) Properly adjusts for time value of money
- ) Uses cash flows rather than earnings
- ) Accounts for all cash flows
- ) Considers the risk of future cash flows
- ) Tells whether an investment increases the firms value

**Disadvantages:**

- ) It is complex when periodic net cash flows are unequal
- ) It is difficult to use risk and sensitivity analysis
- ) It requires an estimate of the cost of capital in order to make a decision
- ) It may not give the value maximization decision when used to compare mutually exclusive projects
- ) It cannot use in situations in which the sign of the cash flows of a project change more than once during the projects life
- ) In case of multiple IRR, there is no real solutions

**Modified Internal Rate of Return (MIRR)**

Modified internal rate of return (MIRR) is a variant of IRR that assumes that cash generated is re-invested at the cost of capital (usually the WACC). This is preferable because:

- ) Any series of cash flows has a single MIRR.
- ) It takes account of the rate at which cash generated is re-invested.

Consider the returns at the end of the life time of a project, including returns on cash generated and re-invested elsewhere. For the IRR to equal the total return the project has generated at that time, the cash inflows must be re-invested at the same rate as the IRR. This is unrealistic.

The MIRR does suffer from some of the other drawbacks of IRR. Relying on it can lead to an incorrect choice between mutually exclusive investments.

To calculate the MIRR, first find the total future value of the cash flows at the reinvestment rate, and then apply the formula:

$$MIRR = \sqrt[N]{\frac{FVCF}{IO}} - 1$$

Where,

FVCF = Future Value of Cash Flows

IO = Initial Cash Outlay

N = Life of the project

The following points give the idea about the Pros and Cons of MIRR:

**Advantages:**

- ) Tells whether an investment increases the firm's value
- ) Considers all cash flows of the project
- ) Considers the time value of the project
- ) Considers the risk of future cash flows through the cost of capital in the decision rule

**Disadvantages:**

- ) Requires an estimate of the cost of capital in order to make a decision
- ) May not give the value maximizing decision when used to compare mutually exclusive projects
- ) May not give the value maximizing decision when used to choose projects when there is capital rationing.

## **Profitability Index**

The profitability index or benefit cost ratio is a time-adjusted capital budgeting technique. It is similar to the NPV approach. The PI approach measures the present value of return per rupee invested, while the NPV is based on the difference between the present value of future cash inflows and the present value of cash outlays. Profitability index may be defined as a ratio, which is obtained by dividing the present value of future cash inflows by the present value of cash outlays.

An index that attempts to identify the relationship between the costs and benefits of a proposed project through the use of a ratio calculated as:

$$PI = \frac{\text{Present value of cash inflow}}{\text{Present value of cash outflow}}$$

This method is also known as the benefit-cost ratio because the numerator measures benefits and the denominator costs.

## **Decision Rule**

If the PI value exceeds one, the proposal is worth accepting. When profitability indeed equals one, the firm is indifferent to the projects. When the profitability index is greater, equal to, or less than one, the net present value is greater, equal or less than zero respectively. In other words NPV will be positive when the profitability index is greater than one; and will be negative when the profitability index is less than one. Thus, the NPV and profitability index approaches give the same results regarding the investments proposals. (Bhattacharya, Ojha, Goet & Sharma, 2005)

The Pros and Cons of the PI can be as follows:

**Advantages:**

- ) May be useful when available investment funds are limited
- ) Easy to understand and communicate
- ) Correct decision when evaluating independence projects

**Disadvantages:**

- ) Problems with mutually exclusive investments

**Discounted Pay Back Period (DPBP)**

Payback Period does not consider time value of money when providing an answer whereas with Discounted Payback Period we get to see the real value of cash inflows when they are measured in today's amount of money as these are discounted at an interest rate called the Discount Rate. We get to see the number of years required to recoup the initial cash outlay or our investment.

The advantages and disadvantages of the DPBP are as:

**Advantages:**

- ) Considers the time value of money
- ) Considers the risk of the projects cash flows through the cost of capital

**Disadvantages:**

- ) The discounted payback period solves the time value problem, but it still ignores the cash flows beyond the payback period
- ) Therefore, you may reject projects that have large cash flows in the outlying years that make it very profitable
- ) In other words, any measure of payback can lead to a focus on short-run profits at the expense of larger long-term profits

### **2.1.5 Capital Budgeting Under Risks and Uncertainty**

A capital budgeting decision is based on the benefits derived from the project. These benefits are measured in terms of cash flows. The estimation of future returns is done on the basis of various assumptions. The actual return in terms of cash inflows depends on a variety of factors such as price, sales volume, effectiveness of the advertisement campaign, competition, cost of raw materials, manufacturing costs and so on; each of these in turn depends on other variables like the states of the economy, rate of inflation, etc. The accuracy of the estimates of the future returns and therefore the reliability of the investment decision would largely depend upon the precision with which these factors are forecast. Whatsoever techniques are followed for forecasting precisely actual returns can never tally to the estimations? As a result actual results vary from the estimation. This variation is technically referred to as a risk. The term risk with an investment can therefore be defined as the variability in the actual returns emanating from a project in future over its working life in relation to the estimated return as forecast at the time of initial capital budgeting decision. (Horngren, Foster & Datar, 1999)

The decision situations with reference to risk analysis in capital budgeting decisions can be broken up into three categories.

- ) Uncertainty
- ) Risk
- ) Certainty

The risk situation with is one in which the probability of a particular events occurring are known. These probabilities are not known under the situation of uncertainty. The different between risk and uncertainty therefore lies in the fact that the variability is less than in uncertainty. (Luce & Raiffa, 1957)

In reality, risk generally is incorporated into capital budgeting decisions somewhat arbitrarily. The firm generally uses its normal or average, required rate of return to evaluate projects that have average risk, a few percentage points are added to the average required rate of return to evaluate projects that have above-average risk, and a few percentage points are subtracted from the average required rate of return to evaluate projects that have below-average risk. It is important that a project's risk be considered in capital budgeting analysis, because incorrect decisions might be made if risk is not considered. For example, if the firm's average rate of return is used to evaluate all capital budgeting projects, regardless of their risk, then projects with little (great) risk might be rejected (accepted) when they should be accepted (rejected).

Whenever we analyze a capital project, we must consider unique factors. A discussion of all of these factors is beyond the scope of this course. However, three common factors to consider are:

- ) Compensating for different levels of risks between projects.
- ) Recognizing risks that are specific to foreign projects.
- ) Making adjustments to capital budgeting analysis by looking at the actual results.

Capital budgeting analysis that incorporates consideration of risk may do so either traditional techniques or statistical techniques. They are described of follows.

### **1. Traditional Techniques**

Under these techniques, risk adjusted discount rate, certainty equivalent coefficient and sensitivity analysis are doing for analysis of risk.

### a) Risk Adjusted Discount Rate

The risk adjusted discount rate (RAD) approach is one of the simplest and most widely used methods for incorporating risk into the capital budgeting decision. Generally, under this method the riskiness of the project depends upon the discount rate. If the discount rate is high, that project is considered as highly risky project and if the discount rate is low that project is considered as a lower risky project. A risk premium rate may be added to risk free discount rate to find out the present value of future return from risky investment proposal.

#### Decision rule

- ) NPV should be positive by using the risk adjusted rates for acceptance of proposal.
- ) IRR should be greater than the risk adjusted rate of return for acceptance of proposal.

### b) Certainty Equivalent coefficient (CEC)

The certainty equivalent approach is an alternative to the risk adjusted rate method to incorporate risk in evaluating investment projects. Under the risk adjusted discount rate method; the risk of the project is taken into consideration by adjusting expected cash flows and not the discount rate. These methods eliminate the problem arising out of the inclusion of risk premium in the discounting process. (Khan & Jain,1993)

$$CEC = \frac{\text{Riskless cash flow}}{\text{Risky cash flow}}$$

#### Decision Rule

Higher the certainty equivalent coefficient denotes lower risk and lower the certainty equivalent coefficient denotes higher risk. The NPV of risk less cash



flows should be positive and IRR of risk less cash flows should be greater than risk free rate of return.

### **c) Sensitivity Analysis**

Sensitivity analysis provides information as to how responsive the estimated project cash flows the discount rate and the project life are to estimation errors. An analysis on these lines is important as the future is always uncertain and there will always be estimation errors. Sensitivity analysis takes care of estimation errors by using a numbers of possible outcomes in evaluating a project. The method adopted under sensitivity analysis is to evaluate a project using a number of estimated cash flows to provide to the decision maker an insight into variability of the outcomes.

The sensitivity analysis provides different cash flow estimates under these assumptions.

- The best (i.e. the most optimistic)

- The normal (i.e. the most likely/ moderate)

- The worst (i.e. the most pessimistic)

The large in the difference between the pessimistic and optimistic cash flow is considered as riskier is projects depend upon the attitude of decision maker towards the risk.

## **2. Statistical techniques**

Under this technique, assignments of probabilities, standard deviation, coefficient of variation and decision tree are doing for analysis of risk.

### **a) Assignment of Probability**

The concept of probability for incorporating risk in evaluating capital budgeting proposal. The probability distribution of each flows overtime provides information

about the expected value of return and the dispersion or the probability distribution of possible returns. On the basis of the information on accept- reject decision can be taken.

The application of this theory is analyzing risk in capital budgeting depends upon the behavior of the cash flows, from the point of view of behavioral cash being (a) Independent (b) dependent. The assumption that cash flows are independent over time signifies that future cash flows are not affected by the cash flows in the proceeding or following year.

### **Decision Rule**

- ) NPV must be positive to accept the project.
- ) IRR must be greater than cost of capital to accept projects.

### **b) Standard Deviation**

Standard deviation that measures of the tightness, or variability of a set of outcomes. Standard deviation is defined as square roots of the mean of the square deviation where is the difference between an outcomes and expected volume of all outcomes.

Greater the standard deviation is said the higher degree of risk and lower the standard deviation is said to the lower degree of risk. The project, which has higher degree of standard deviation, is not generally accepted and vice-versa.(Gyawali, Fago & Subedi,2006)

### **c) Co-efficient of variation**

Coefficient of variation (C.V) standardized measure of the risk per unit of return, calculated as the standard deviation divided by the expected return.

$$\text{C.V.} = \frac{\text{Standard Deviation}}{\text{Expected CASH FLOWS}}$$

Higher the coefficient of variation is considered as the higher degree of risk and lower the coefficient of variation is considered as the lowest degree of risk. (Weston,1996)

#### **d) Decision Tree**

The decision tree (DT) approach is another useful alternative for evaluating risky investment proposals. The outstanding feature of this method is that it takes into account the impact of all probabilistic estimates of potential outcomes. In other words, every possible outcome is weighted in probabilistic terms and then evaluated. The DT approach is especially useful for situations in which decisions at one point of time also affect the decisions of the firm at some later date. Another useful application of the DT approach is for projects which require decisions to be made in sequential parts. ( Gyawali, Fago & Subedi,2006)

A decision tree is a pictorial representation in tree form which indicates the magnitude, probability and inter relationship of an possible outcomes. The format of the exercise of the investment decision has an appearance of a tree with branches and, therefore, this method is deferred to is the decision-tree method. A decision tree shows the sequential cash flows and the NPV of the proposed project under different circumstances. (Bajracharya, Ojha, Goet & Sharma, 2005)

At last, another way to adjust for risk is to understand the impact of risk on outcomes. Sensitivity Analysis and Simulation can be used to measure how changes to a project affect the outcome. Sensitivity analysis is used to determine the change in Net Present Value given a change in a specific variable, such as estimated project revenues. Simulation allows us to simulate the results of a

project for a given distribution of variables. Both sensitivity analysis and simulation require a definition of all relevant variables associated with the project. It should be noted that sensitivity analysis is much easier to implement since sophisticated computer models are usually required for simulation.

### **2.1.6 Review of Management Accounting Tools**

Management accounting is an activity that is interwoven in the management processes of all organizations. Management Accounting refers to that part of the management process which is focused on adding value to organizations by attaining the effective use of resources by people, in dynamic and competitive contexts. The functions of management accounting may be said to include all activities connected with collecting, processing, interpreting and presenting information to management. The management accounting satisfies the various needs of management for arriving of appropriate business decisions. A short review of management accounting tools are mentioned bellow.

#### **2.1.6.1 Cost segregation**

Mixed cost should be separated into variable and fixed components before entering into financial planning, decision making and controlling. Mixed cost separation method are such as Graphic method, high low method, Analytical method, average method and least square method which are describe as follows:

##### **) Graphical Methods**

The graphical method of dividing mixed cost into their fixed and various components makes use of all relevant use of all relevant past data pertaining to cost volume relationship. The data are plotted in a scatter graph. Each point in a chart represents cost for a particular months/ days in relation to number of units produced or level of activity (Khan & Jain, 2000).

### ) **High Low Method**

High-Low Method (HLM) is an algebraic procedure that estimates the Constant (fixed cost element) and Slope (variable rate per unit of X) of an Equation by using only the highest and lowest pairs of the sample data. As Mixed Cost necessarily includes elements of both fixed and variable cost, the HLM analysis takes the mathematical form of the linear equation  $Y = a + bX$ , (Similar to Least Square Method, also called as Cost Formula).

The difference in cost between highest and lowest level of activities are divided by the difference in activity or output. The result of division is variable cost per unit. This method assumes that fixed cost trends remain constant and if there is any changes are only in variable cost (Dangol & Prajapati, 2001).

### ) **Analytical Method**

This method also known as "Degree of variability" techniques because the genesis of this method lies in measuring the extent of variability of costs on a careful analysis of each item to determine how far the cost varies with volume, variable overheads under this method computed as follows:

$$\text{Variable Overhead} = \text{Budgeted Mixed Overhead} \times \text{Degree of Variability}$$

### ) **Least Square Method**

Least Square is a procedure, requiring just some calculus and linear algebra, to determine what the "best fit" line is to the data. It follows regression equation to segregate mixed cost into variable. It is an accurate and trusted method of segregation fixed and variable cost from mixed cost. In this method, first of all, variable cost per unit is calculated. Then fixed cost is calculated (Dangol & Prajapati, 2001).

### **2.1.6.2 Cost-Volume-Profit Analysis (CVP Analysis)**

Cost-volume-profit analysis (CVP), or break-even analysis, is used to compute the volume level at which total revenues are equal to total costs. When total costs and total revenues are equal, the business organization is said to be "breaking even." The analysis is based on a set of linear equations for a straight line and the separation of variable and fixed costs. The financial information required for CVP analysis is for internal use and is usually available only to managers inside the firm; information about variable and fixed costs is not available to the general public. CVP analysis is good as a general guide for one product within the relevant range. If the company has more than one product, then the contribution margins from all products must be averaged together.

### **2.1.6.3 Standard Costing**

The standard cost is a predetermined cost which determines in advance what each product or service should cost under given circumstances. In the words of Fregmen (1976) "Standard cost is the amount the firm thinks a product or the operation of the process for a period of time should cost, based upon certain assumed conditions of efficiency, economic conditions and other factors."

The CIMA, London has defined standard cost as "a predetermined cost which is calculated from management's standards of efficient operations and the relevant necessary expenditure." They are the predetermined costs on technical estimate of material labor and overhead for a selected period of time and for a prescribed set of working conditions. In other words, a standard cost is a planned cost for a unit of product or service rendered.

Standard costing is a system of cost ascertainment and control in which predetermined standard costs and income for products and operations are set and periodically compared with actual costs incurred and income generated in order to

establish any variances. Standard costing is a management control technique for every activity. It is not only useful for cost control purposes but is also helpful in production planning and policy formulation. It allows management by exception. Standard costing is preparation of standard costs and applying them to measure the variations from standard costs and analyzing the causes of variations with a view to maintain maximum efficiency in production. This technique is complementary to the actual costing can be historical costing system. The system of standard costing can be used in all types of industries but it is more commonly used in industries producing standardized products, which are repetitive nature (Jain & Narang, 2000).

Standard costing systems are very expensive to develop and maintain; they were also designed for traditional manufacturing systems in which direct labor and direct materials are the most important costs. Recent years have seen a decline in the use of such systems as companies become less labor intensive.

#### **2.1.6.4 Master Budget**

The master budget is a summary of company's plans that sets specific targets for sales, production, distribution and financing activities. It generally culminates in a cash budget, a budgeted income statement, and a budgeted balance sheet. In short, this budget represents a comprehensive expression of management's plans for future and how these plans are to be accomplished.

It usually consists of a number of separate but interdependent budgets. One budget may be necessary before the other can be initiated. More one budget estimate affects other budget estimates because the figure of one budget is usually used in the preparation of other budget.

The usual master budget for a manufacturing and non- manufacturing company has the following components.

However a master budget can be divided into two groups. That is operational budget and financial budget.

#### **2.1.6.5 Zero Base Budgeting**

Zero Based Budgeting is a method of budgeting in which all expenses must be justified for each new period. A zero-based budgeting start from a “zero base” and every function within an organization is analyzed for its needs and costs. Budgets are then built around what is needed for the upcoming period, regardless of whether the budget is higher or lower than the previous one. ZBB allows top-level strategic goals to be implemented into the budgeting process by tying them to



specific functional areas of the organization, where costs can be first grouped, then measured against previous results and current expectations

#### **2.1.6.6 Activity Based Budgeting**

Activity based Budgeting is a method of budgeting in which the activities that incur costs in every functional area of an organization are recorded and their relationships are defined and analyzed. Activities are then tied to strategic goals, after which the costs of the activities needed are used to create the budget. Activity based budgeting stands in contrast to traditional, cost-based budgeting practices in which a prior period's budget is simply adjusted to account for inflation or revenue growth. As such, ABB provides opportunities to align activities with objectives streamline costs and improve business practices.

#### **2.1.6.7 Flexible Budget**

A flexible budget is an alternative that has some compelling advantages. It relates anticipated expenses to observed revenue. To illustrate, if a business greatly exceeded the sales goal, it is reasonable to expect costs to also exceed planned levels. After all, some items like cost of sales, sales commissions, and shipping costs are directly related to volume. How ridiculous would it be to fault the manager of the business for having cost overruns? Conversely, failing to meet sales goals should be accompanied by a reduction in variable costs. Certainly it would make no sense to congratulate a manager for holding costs down in this case. A flexible budget is one that reflects expected costs as a function of business volume; when sales rise so do certain budgeted costs, and vice versa.

The flexible budget responds to changes in activity, and may provide a better tool for performance evaluation. It is driven by the expected cost behavior. Fixed factory overhead is the same no matter the activity level, and variable costs are a direct function of observed activity. When performance evaluation is based on a

static budget, there is little incentive to drive sales and production above anticipated levels because increases in volume tend to produce more costs and unfavorable variances. The flexible budget-based performance evaluation provides a remedy for this phenomenon.

#### **2.1.6.8 Ratio Analysis**

Ratio Analysis is a tool used by individuals to conduct a quantitative analysis of information in a company's financial statements. Ratios are calculated from current year numbers and are then compared to previous years, other companies, the industry, or even the economy to judge the performance of the company. Ratio analysis is predominately used by proponents of fundamental analysis. There are many ratios that can be calculated from the financial statements pertaining to a company's performance, activity, financing and liquidity. Some common ratios include the price-earnings ratio, debt-equity ratio, earnings per share, asset turnover and working capital.

The financial ratios can be categorized into the following ways:

- ) Liquidity Ratios
- ) Leverage Ratios
- ) Activity Ratios
- ) Profitability Ratios

#### **2.1.6.9 Breakeven Analysis**

Breakeven is that point where the company just recovers all of its costs or there is no profit or no loss. In other words, where the total cost equals the total revenue is called the breakeven revenue. It will just be able to recover its cost. To put breakeven point in other words, that is point at which a company breaks the loss (minus) zone and enters into profit zone. Break even analysis is the managerial tools that shows the relationship between cost and profit with sales volume i.e.

revenue in banks. Breakeven analysis helps the management to know which revenue level will only recovers its cost and after which it starts giving profit. Therefore, it can provide management some insight into decision making (Goet, Gautam & Bhattarai, 2006)

#### **2.1.6.10 Cash Flow Analysis**

All business activities are carried with cash and all profitable activities must result in net inflows of cash. It is therefore useful to establish activities must result in a net inflow of cash. The quantum of the flows of cash into business is as a result of operations and other transactions. It should be remembered that cash inflow and profit are often different. It is possible that in a business suffering a loss, there may be still an increase in cash because of trading operation (Goyal & Mohan, 1997).

Cash flow is determined by looking at three components by which cash enters and leaves a company: core operations, investing and financing. Cash flow analysis is done through preparing cash budget. Cash as important current asset should be managed carefully. Though it is zero earning assets, it is held by the firm with different purposes such as: transaction motive precautionary motive, speculative motive.

#### **2.1.5.6 Management Control Systems and Responsibility Accounting**

Management Control Systems (MCS) theory is a useful integrative tool for organizing, explaining, and understanding the jargon and concepts of performance measurement. Management consists of the basic functions of planning decision-making and control. Control is the function of the management that ensures the proper implementation of plans and policies to achieve the organizational objectives. Management control systems focuses on motivating managers for the sake of enhancing total profitability of the organization. A management control system is logical integration of techniques to gather and use information to make

planning and control decisions, to motivate employee behavior and to evaluate performance.

Responsibility accounting is an underlying concept of accounting performance measurement systems. The basic idea is that large diversified organizations are difficult, if not impossible to manage as a single segment, thus they must be decentralized or separated into manageable parts. These parts or segments are referred to as responsibility centers that include: 1) revenue centers, 2) cost centers, 3) profit centers and 4) investment centers. This approach allows responsibility to be assigned to the segment managers that have the greatest amount of influence over the key elements to be managed. These elements include revenue for a revenue center (a segment that mainly generates revenue with relatively little costs), costs for a cost center (a segment that generates costs, but no revenue), a measure of profitability for a profit center (a segment that generates both revenue and costs) and return on investment (ROI) for an investment center (a segment such as a division of a company where the manager controls the acquisition and utilization of assets, as well as revenue and costs). (Munakarmi, 2002)

## **2.2 A Brief Review of the Previous Research Work**

Researches on the area of capital budgeting practices in Nepalese context are not made in remarkable number. Many researches were in the area of profit planning and control in Nepalese context. As profit planning and control covers some of the aspects of capital budgeting, researches made on these areas are taken into consideration for the sake of review to examine the position of profit planning and control practice in Nepalese company. An attempt is made here to review some of the researches, which have been submitted in profit planning and control in the context of Nepal.

**Khagendra Prasad Ojha (1995)** had conducted a research in the topic “*profit planning in manufacturing public enterprise; A case study of Royal Drugs Limited and Herbal Production and Processing Company Limited*”. This research of was mainly centered with the current practice of profit planning and its effectiveness in RDL and HPPCL.

The time period covered by this research was six years from F/Y 046/47 to F/Y 051/52. The data and other necessary information were collected by using secondary as well as primary source of data. In his research Mr. Ojha has pointed out various findings and recommendations some remarkable findings were as follows:

- ) Inadequate planning of profit due to lack of skilled planner
- ) Inadequate authority and responsibility to planning department.
- ) Failure in achievements due to inadequate evaluation of internal and external varieties.
- ) Failure due to inadequate forecasting system.
- ) Lack of Entrepreneurship and Commercial concepts in overall operation of the enterprises.

**Prem Prasad Acharya (2000)** had submitted a dissertation on the topic “*Profit Planning in Nepalese PEs (A case study of Herbs Production and Processing Co. Ltd.)*”. The basic objectives of this research were to see how far the different functional budgets are being applied as a tool for profit planning in manufacturing and business enterprise. Other objectives are as follows:

- ) To show profits plans and examine the practice and effectiveness of comprehensive Profit plans and control system of Herbs production processing Ltd.

- ) To examine the present planning provision adopted by HPPCL on the basis of budgeting.
- ) To access the BEP analysis of HPPCL.

This research was concluded with some findings, and recommendations. His major findings were:

- ) The company has been suffering at loss since established to now due to unscientific and imperfect budgets prepared.
- ) The company has facing marketing problem in international markets as well as Indian Market.
- ) Achievements and the analysis of CVP and flexible budgeting shows the HPPC has been suffering with various internal and external problems in the process of formulating and implementing profit plan.

The study recommended various suggestions to improve the profit planning system of HPPCL, which are as follows:

- ) Profit planning system should be systematic with a clear objective executives should be well versed with business knowledge.
- ) Profit planning manual should be communicated from top level to lower level.
- ) The company should hire trained and qualified manpower of budgeting and planning and present manpower should be developed.
- ) Marketing specialist should be appointed to develop effective marketing policies for sales expansion and for availability and regular supply of raw material.
- ) The company should develop sales strategy in domestic and international market.

- ) The company should try to reduce investment in current assets to avoid idle working capital.

**Sagar Sharma (2002)** had conducted a research on "*Management Accounting Practice in the Listed Company of Nepal*". For this study Sharma classified the different companies listed in Nepal Stock Exchange to the different groups according to their nature of service i.e. manufacturing, trading, service, financial etc. He collected the data required for the study from primary sources. Questioners and discussion with the stakeholders was the base of study.

The prime objectives of the study were:

- ) To find out how far the Nepalese companies practice the management accounting tools and techniques.
- ) The management accounting tools not in use and the difficulties on application.
- ) To recommend the areas and measures for the application of management accounting tools and techniques.

In his study, he pointed out various findings and recommendations.

Major findings of the research works were:

- ) From the study it was clear that 100% of the banking companies practiced NPV criteria of capital budgeting, 50% practiced PBP and 25% practiced ARR and IRR to make the long term decisions.
- ) In case of manufacturing companies, it was found that 67% Practiced NPV and IRR while 44% practiced ARR tools of capital budgeting while making decision on purchasing fixed assets. Likewise, 78% of them practiced sensitive analysis, 33% of the companies practiced increasing the required rate of return and shortening the pay back period and 33% practiced

- estimating probability distribution of cash flows for risk adjustment while evaluating capital investing decision.
- ) While preparing budgets most of the companies based on actual expenses, 26% of companies used past estimates to prepare budgets. There is no practice of Zero Base Budgeting due lack of information and cognizance about the format and the way of developing it.
  - ) On budget preparation, there is no practice of taking consultancy services.

Some remarkable recommendations of the study were:

- ) A separate management accounting dept should be established and furnished with the experts.
- ) Companies can be improved by allowing greater autonomy and more accountability.
- ) It should hire the professional experts for the budget preparation and other planning activities.
- ) Enterprises should be motivated for the application of new advance and modern management accounting tools.

**Dilip Kumar Dhakal (2003)** had conducted research in "*PPC in manufacturing sectors of Nepal A case study of Herbs Production & Processing Company Ltd.*" The research was centered in and on, the perfect use of tools of PPC and awareness of the system.

The major findings of the study revealed that "HPPCL lacks professional managers: there is a lack of skilled planners and budgeting experts. This is clearly visible in the operation of the company. Budgets are irrationally, unsystematically and unscientifically as well as there would be lack of follow up of action performed."



**Tenzin Namdak (2005)** had submitted the thesis on the topic “*CVP analysis of Dairy Development Corporation*”. These are to determine the relationship between cost volume and profit and profitability of the DDC. His sub objective to achieve the main objective is as follows:

- ) To study the relationship between cost volume and profit as a tool of budgeting.
- ) To evaluate the profitability and sensitivity of DDC in relation to sales.
- ) To analyze the productivity of the labor by using different productivity ratios.
- ) To analyze the CVP of the corporation and its impact on its profit planning.
- ) To provide necessary suggestions and recommendations .whatever necessary, base on findings.

The major findings of the research are as follows:

- ) DDC has been planning only on short –term basic.
- ) The practice of CVP analysis has not been used yet.
- ) There is no practice of segregating cost into fixed and variables.
- ) Over utilization of capacity resulting in increasing operation and maintenance cost every year.
- ) DDC has low contribution margin with high variable cost.
- ) DDC has also high fixed cost with low contribution margin, resulting in high BEP sales.
- ) The profitability of the DDC is also very poor.
- ) All the levels of management are not involved in profit planning and decision making of the corporation.

**Narayan Prasad Acharya (2006)** has conducted a research entitled “*Management Accounting Practice in Nepalese Public Enterprise*”. The study has

focused to study and examine the contemporary practice of management accounting in Nepalese Public Enterprises. Acharya's research is based on primary data collected on the basis of stratified sampling technique. In his study 38 Nepalese public enterprise, Industries, and financial Institutions including RBB and NBL, are included. He has pointed out various findings and recommendation in his study. Out of them, some remarkable findings are:

- ) Traditional approaches of concerned, authorities are becoming a prime barrier for proper application of management accounting tools in Nepalese public enterprises.
- ) Role of government on pricing decision is significant.
- ) Practicing process of management accounting tools in manufacturing and service enterprises are slightly different and major MA related decision are not depending upon the MA tools and techniques.

**Pawn Chandra Adhikari (2006)** had conducted research in the topic “*A Study on the Effectiveness of Profit Planning & Control of Unilever Nepal Ltd.*” The researches were centered in and on, the perfect use of tools of PPC and awareness of the systematic approach of developing the budget.

The key findings of the research revealed that “Unilever Nepal Ltd. does not prepare strategies and policies for long term. Even it has mentioned the objectives of servicing people to every where and everyday. It has no proper systematic use of overall profit plan. UNL is also carrying to achieve social needs if the common people by organizing various programs.”

Production of UNL is not segmented to various products and departments. There is lack of effective coordination among various departments. It is not able to prepare raw materials requirement and purchase budget systematically nor, it has proper records of raw material consumed. There is no optimal inventory policy.

The company ignored the environmental factors and it has not adequately considered controllable and uncontrollable variables affecting the company. Moreover the company has no in depth analysis.

**Bajaya Raj Adhikari (2007)** had presented a dissertation on the topic of “*Cost volume Profit analysis of Nepal Lube Oil Limited*”. The main objective of his study is to examine the use of CVP analysis to plan the profit in Nepal Lube Oil Limited. The other specific objectives of this study are:

- ) To produce and refine oil and chemical in the country itself, substitute import of refined goods and purchase necessary new materials from other countries.
- ) To make necessary contract and agreement with different national and international governments deterrments, office and bodies to increase production, Capabilities and improve quality.
- ) To study the relationship between cost volume and profit as a tools of budgeting.
- ) To manage the non-technical and technical manpower from outside or inside the company and given necessary training inside on outside the company.
- ) To sell the product in direct part of the company.
- ) To provide necessary suggestion and recommendation wherever necessary base on finding.

Based on different analysis, observation and informal discussion, the followings are major findings at the study:

- ) Company has usually very low margin of safety and also negative in some fiscal year.

- ) Sales amount of the company are fluctuating and in increasing trend.
- ) The budgeted sales are more than actual sales inequality.
- ) BEP is in increasing trend due to decrease in PV ratio.
- ) Correlation coefficient between budgeted sales quantity and actual sales quantity is negative; this shows that is moderate degree at negative correlation coefficient.
- ) In flexible budget the company suffers from loses below 100% capacity utilization. Here % capacity indicates current utilized capacity is average.

**Deleshwar Paudel (2008)** had presented a dissertation on the topic of “*Cost volume Profit analysis tool used to projected profit by Salt trading corporation Limited*”. The main objective of his study is to examine the use of CVP analysis on the Salt Trading Corporation Limited. The other specific objectives of this study are:

- ) To analyze the cost and profit and loss of STCL.
- ) To study the relationship of cost volume profit.
- ) To analyze the impact of CVP of the corporation on Productivity.
- ) To provide suggestion and recommendation for improving the condition of STCL for further improvement.

Based on different analysis, observation and informal discussion, the followings major findings are:

- ) Total sales of the corporation were unstable.
- ) The company sold different products among them agricultural material and Machine equipment on total sales were found nominal. But other products made highest contribution on total sales.
- ) Expenses of Salt Trading Corporation Limited were fluctuated.
- ) Variable cost as well as fixed cost increased or decreased during the period.

- ) The corporation has no details of systematic expenses plan. The fixed, variable and mixed expenses planning are essential for profit planning and control.
- ) Variable cost volume ratio of the Salt Trading Corporation is nearly 85% on average. It means that the contribution margin of the company is about 15% of total sales.
- ) Contribution margin of the corporation were not satisfactory. Low contribution margin may be problem to the corporation.

**Manohar Majhi (2009)** had conducted research in the topic “*A study on CVP analysis as a managerial tool of profit Planning of Unilever Nepal Limited*” . The research had the following objectives:

- ) To study relationship of cost, volume and profit as an applicable tools of budgeting.
- ) To evaluate the profitability, financial position and sensitivity analysis of UNL.
- ) To analyze the cost, volume and profit of the Manufacturing Company and its impact in profit planning.

The major findings of that research are:

- ) The company produces Detergent/sources/laundry, Toilet Soaps, Personal Products, Soap Noodles and Tea etc. Soap Noodles and Tea were dropped after the fiscal year 2060/61.
- ) Total variable cost ratio was not constant. High portion of variable cost includes cost of materials. Variable cost covers nearly 80% on an average of sales.
- ) Fixed cost did not remain constant in the different fiscal year.
- ) Semi-variable cost also fluctuated each year.

- ) Profit of the company increased every year. Though sales decreased in the same year profit increased due to decrease in fixed cost.

The recommendations made on that research study are as follows:

- ) Classification of expenses into variable and fixed or controllable and non-controllable must be made. The effective and scientific method should be used to segregate cost.
- ) UNL should establish a separate cost control and planning department for effective management of cost.
- ) Preparation of sales plan, production plan and settling price of its products should be on BEP analysis.
- ) As a multi-product Company, UNL should produce for the product high with CVP to generate huge profit. Systematic approaches should be following towards comprehensive profit planning.
- ) Some portion of income should be allocated to research and development program so that new technology could be found which provide more competitiveness in the market field.

### **2.3 Research Gap**

Most of the prior research works conducted on accounting was on Profit Planning & Control, Revenue planning and Cost Volume Profit Analysis. Those studies have pointed the similar findings and conclusions. Very few research works were done in the sector of capital budgeting practices in manufacturing companies. The study focused on the capital budgeting practices in manufacturing companies of Nepal. The main objective of the study was to find out how far the Nepalese manufacturing companies practices the capital budgeting tools and techniques to their business for better performance and results. This study also tries to find Long-term capital investment decision in manufacturing companies. The findings of these studies were mainly based on primary data.

## **CHAPTER - III**

### **RESEARCH METHODOLOGY**

Research methodology is concerned with various methods and techniques, which are used in the process of research studies. It includes wide range of methods including quantitative technique for data analysis and presentation. It facilitates the research work and provides reliability and validity to it. The main objective of this study is to analyze, examine and interpret capital budgeting practices in manufacturing companies of Nepal. The research methodology is followed to achieve the basic objectives and goals of research work. The major components of research methodology followed in this research study are discussed below.

#### **3.1 Research Design**

Research design is the plan, structure, and strategy of investigation conceived so as to obtain answer to research question and to control variance. The plan is the overall scheme or program of the research like the structure of research is more specific. It is the outline, the scheme, the paradigm of the operation of the variable and strategy implies how the research objective will be reached and how the problem encountered in the research will be tackled. Research design is an analytical as well as descriptive approach to achieve the objective. Thus research design is a plan to obtain the answer of research questions through analysis of data.

This research design will follow a descriptive design that attempts to measure the capital budgeting practices in manufacturing companies of Nepal.

Descriptive design is a fact finding operation searching for adequate information. It is a type of study, which is generally conducted to assess the opinions, behaviors or characteristics of a given population and to describe the situation and events

occurring at present. Descriptive research is a process of accumulating facts. It does not necessarily seek to explain relationship, test hypothesis, make predictions or get at meanings and implications of the study.

### **3.2 Sources of Data**

The data were collected from the primary sources. Primary data were collected through questionnaire survey.

### **3.3 Population and Samples**

For the purpose of the study of the capital budgeting practices of the manufacturing companies of Nepal, the samples of the manufacturing companies are taken by the judgment and convenient sampling method. It is difficult to study the population of manufacturing companies. Hence only five companies are chosen as the sample for the analysis, interpretation and representation of the population of the manufacturing companies. The samples of five manufacturing companies, which are judged for the convenience, are as follows:

- ) Panchakanya Group Pvt. Ltd.
- ) Chaudhary Group Pvt. Ltd.
- ) Himalayan Snax & Noodles Pvt. Ltd
- ) Gorkha Brewery Pvt. Ltd.
- ) Dairy Development Corporation Ltd.

### **3.4 Data Collection Procedure**

This study is mainly based on primary sources of data, information collected by developing a structured question. The main target respondents were the financial Directors and Accountants of the manufacturing companies. Altogether 11 questions were included in the questionnaire and analyzed for study.



### **3.5 Data Processing Procedure**

Data collected information from questionnaires was in raw form. The data are tabulated into various tables according to the subject's requirement. Processing of data has. Simple arithmetic percentage tool is used for analysis. The data has been processed using the sophisticated SPSS program; version 17. Major findings are based on the analysis and the interpretation of data

### **3.6 Research Variable**

Simple percentages analyses were used to interpret data. The capital budgeting tools like NPV, IRR,PI, ARR, PBP, MIRR were the major research variables Similarly the management accounting tools like budgeting, Zero base budgeting, capital budgeting, cost volume profit analysis, ratio analysis, cash flow analysis, decision making Procedure, Preparation of financial documents, short term and long term planning were also the research variables.

## **CHAPTER - IV**

### **DATA PRESENTATION AND ANALYSIS**

#### **4.1 Introduction**

The main objective of this study is to examine the present practice of capital budgeting tools and techniques in Nepalese Manufacturing Companies. The other objectives are to identify the areas where capital budgeting tools can be applied to strengthen the companies and to scrutinize the major difficulties in the application of capital budgeting tools in Nepalese Manufacturing Companies. To make recommendations to overcome the difficulties in applying capital budgeting tools in Nepalese manufacturing companies are the specific objectives of the research study this chapter included the data presentation and analysis.

#### **4.2 Tabulation and Graphical Presentation of Practices of Capital Budgeting Tools**

In this part, it has been attempted to analyze the data collected through questionnaire. The data are presented in table and pie chart/ bar diagram and for the help of data analysis the SPSS programming has been used.

##### **4.2.1 System of Budgeting Practices in Manufacturing Companies of Nepal**

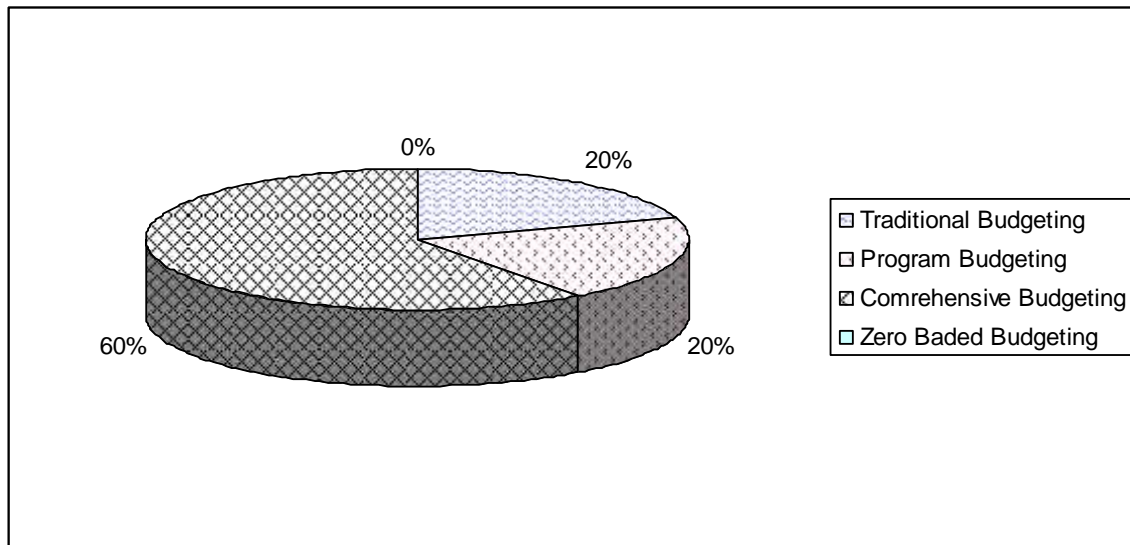
System of budgeting practices play an important role in questioning, visualizing, analyzing, and measuring implemented strategies. It also helps to manager in overall managerial activities by providing information and helping in planning, controlling, and decision making. The following table and chart shows the current status of budgeting system practices of Nepalese manufacturing companies.

**Table 4.1**  
**System of Budgeting Practices**

| <b>Budgeting System</b> | <b>Frequency</b> | <b>Percent</b> |
|-------------------------|------------------|----------------|
| Traditional Budgeting   | 1                | 20             |
| Program Budgeting       | 1                | 20             |
| Comprehensive Budgeting | 3                | 60             |
| Zero Based Budgeting    | 0                | 0              |
| <b>Total</b>            | <b>5</b>         | <b>100</b>     |

*Source: Field Survey*

**Figure 4.1**  
**System of Budgeting Practices**



The above table and figure exhibit the system of budgeting practice in manufacturing companies of Nepal. Regarding the response of sample Nepalese organizations, there is significant practice of comprehensive budgeting i.e. 60 percent. 20 percent of the sample companies have been practicing traditional budgeting system and 20% percent have been using programme budgeting. Although ZBB is a justified budgeting system of every activity in the budget, none of the sample manufacturing companies has applied zero based budgeting.

#### 4.2.2 Basis of Budget Preparation

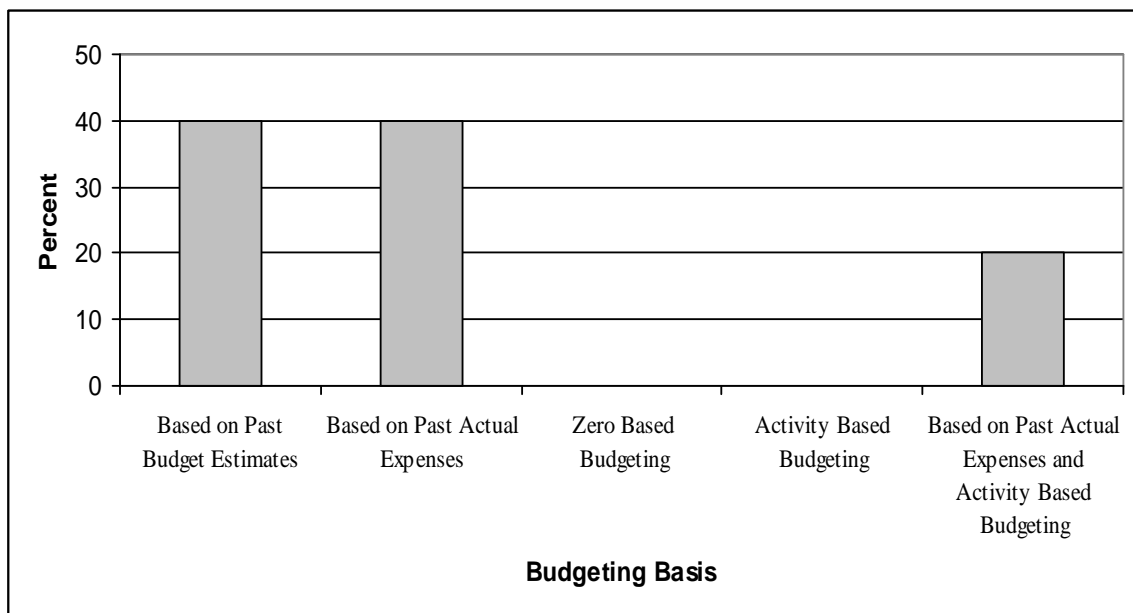
Budgeting summarized the estimated result of future transactions for the entire company in much the same manner as the accounting process records and summarizes the result of completed transactions. For assisting the management in the functions of planning and control budgeting techniques is applied. Budget can be used as benchmark that allows manager to compare actual performance with estimated or desired performance. The following table gives the manufacturing companies' response regarding the basis of budget preparation.

**Table 4.2**  
**Basis of Budget Preparation**

| <b>Basis of Preparing Budget</b>                           | <b>Frequency</b> | <b>Percent (%)</b> |
|--|------------------|--------------------|
| Based on Past Budget Estimates                             | 2                | 40                 |
| Based on Past Actual Expenses                              | 2                | 40                 |
| Zero Based Budgeting                                       | 0                | 0                  |
| Activity Based Budgeting                                   | 0                | 0                  |
| Based on Past Actual Expenses and Activity Based Budgeting | 1                | 20                 |
| <b>Total</b>   | <b>5</b>         | <b>100</b>         |

*Source: Field Survey*

**Figure 4.2**  
**Basis of Budget Preparation**



The above table and figure reflect the budget estimation technique practiced by sample manufacturing companies. It is seen in the table and Fig. that 40 percent of Nepalese manufacturing companies have been preparing their budget only on the basis of past budget estimates and 40 percent companies have been preparing their budget based only on past actual expenses. Similarly, 20 percent of them have been preparing budget on the basis of on past actual expenses and activity based budgeting. None of the manufacturing company have practiced modern useful technique zero based budgeting due to lack of time and manpower. It seems that, in Nepal must of the companies do not have trained manpower for budgeting and planning.

#### 4.2.3 Method of Investment Plan in Nepalese Manufacturing Companies

Investment plan helps to get maximum return from the prospective investment for the manufacturing companies. Systematic plan is necessary for capital fund management of the organization. On the basis of management perception different method of investment planning can be used. Following are the methods of analysis for investment plan undertaking by the sample manufacturing companies:

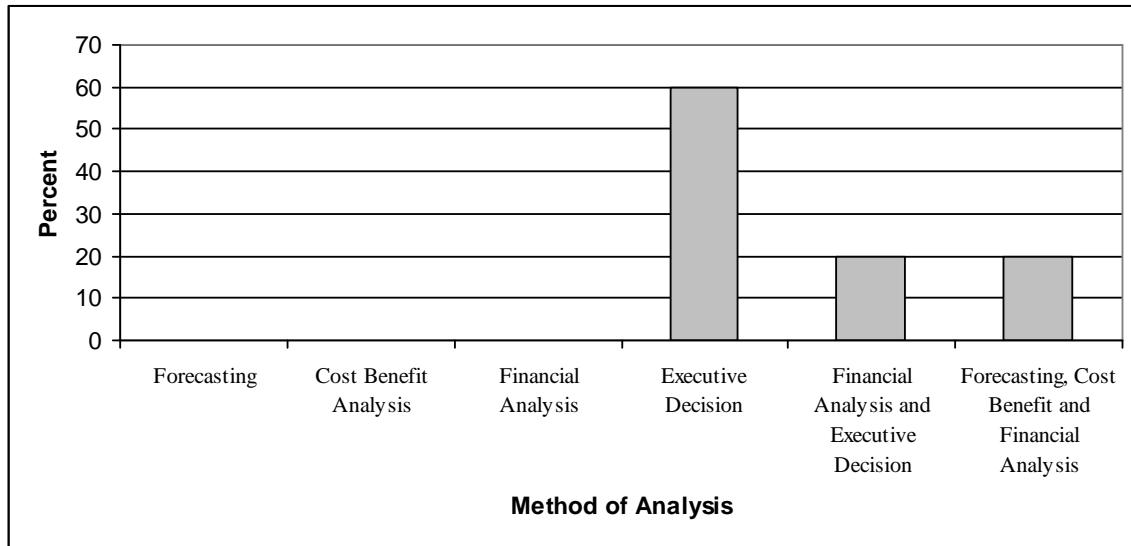
**Table 4.3**  
**Method of Investment Plan Analysis**

| Methods  | No. of Companies | Percent    |
|--|------------------|------------|
| Forecasting                                      | 0                | 0          |
| Cost Benefit Analysis                            | 0                | 0          |
| Financial Analysis                               | 0                | 0          |
| Executive Decision                               | 3                | 60         |
| Financial Analysis & Executive Decision          | 1                | 20         |
| Forecasting, Cost Benefit and Financial Analysis | 1                | 20         |
| <b>Total</b>                                     | <b>5</b>         | <b>100</b> |

*Source: Field Survey*

**Figure 4.3**

**Method of Investment Plan Analysis**



The above table and figure show the method of investment plan analysis by the sample Nepalese manufacturing companies. 60 percent of the companies have been using executive decision for investment plan analysis. 20 percent of the companies have been practicing both financial analysis and executive decision for investment plan analysis. In the same way 20 percent of the them have been applying all three forecasting, cost benefit analysis and financial analysis, to plan their investment. Although there are many effective techniques available to analyze investment plan, executive decision dominated in the Nepalese manufacturing companies. It seems that in the Nepalese companies there is still lack of practicing modern approach like participatory in decision making.

**4.2.4 Sources of Fund for Investment Projects**

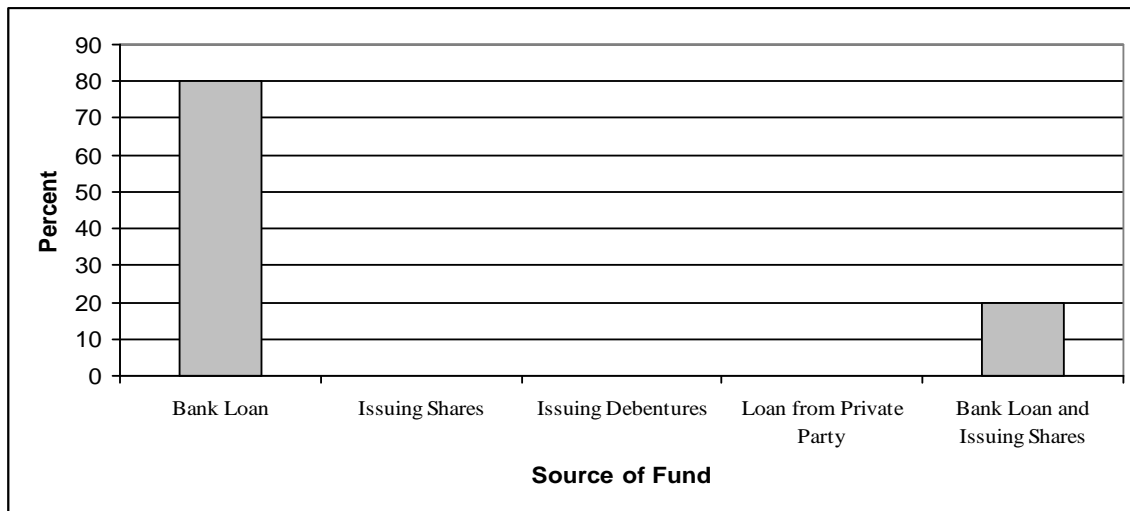
A company has different sources available to raise fund to invest in projects. Raising fund involves additional cost for the company and has long term effect in the life of project. Company policy and financial structure & position play a vital role in selecting source of fund. So, the below table tries to find out the preference given by manufacturing companies in selecting the source of fund.

**Table 4.4**  
**Sources of Fund for Investment Projects**

| <b>Source of Fund</b>        | <b>Frequency</b> | <b>Percent</b> |
|------------------------------|------------------|----------------|
| Bank Loan                    | 4                | 80             |
| Issuing Shares               | 0                | 0              |
| Issuing Debentures           | 0                | 0              |
| Loan From Private Party      | 0                | 0              |
| Bank Loan and Issuing Shares | 1                | 20             |
| <b>Total</b>                 | <b>5</b>         | <b>100</b>     |

*Source: Field Survey*

**Figure 4.4**  
**Sources of Fund for Investment Projects**



The above table and figure reveal the source of fund for investment projects by the sample Nepalese manufacturing companies. 80 percent of the manufacturing companies have been collecting their fund from banks for their investment projects. Both bank loan as well as issuing share were used for fund collection by 20 percent of the manufacturing companies. None of the companies have been using issuing debentures and loan from private party for their fund collection. Collection of fund plays a major role in investment decision which determines the cost of project. Every business organization require to choose the optimal source

of fund which minimize the cost. Bank loan is the most common and economic source of fund which has been selecting by Nepalese companies.

#### 4.2.5 Method Follows While Analyzing Investment Project

Selecting investment project is not a easy task. Investment project involves huge amount. So, it requires analysis by using different methods with the help of available information. There are different methods developed for analyzing the investment projects. The following table presents the responses acquired from the sample Nepalese manufacturing companies regarding the method follows while selecting investment project.

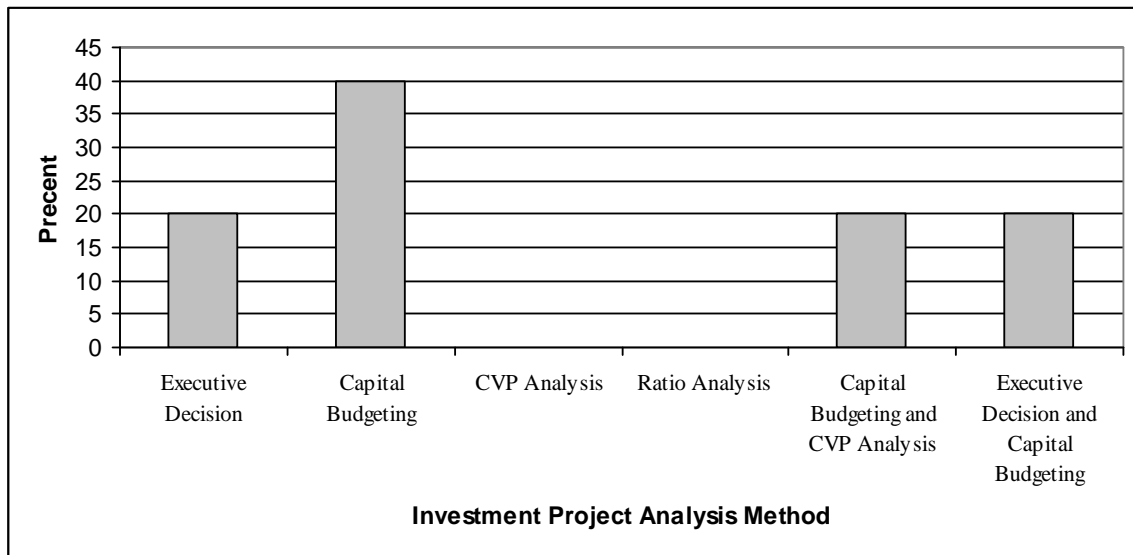
**Table 4.5**  
**Investment Project Analysis Method**

| <b>Methods</b>                           | <b>No. of Company</b> | <b>Percent</b> |
|--|-----------------------|----------------|
| Executive Decision                       | 1                     | 20             |
| Capital Budgeting                        | 2                     | 40             |
| CVP Analysis                             | 0                     | 0              |
| Ratio Analysis                           | 0                     | 0              |
| Capital Budgeting and CVP Analysis       | 1                     | 20             |
| Executive Decision and Capital Budgeting | 1                     | 20             |
| <b>Total</b>                             | <b>5</b>              | <b>100</b>     |

*Source: Field Survey*



**Figure4.5**  
**Investment Project Analysis Method**



The above table and figure exhibit the methods of investment project analysis practicing by sample Nepalese manufacturing companies. 40 percent of the companies have been practicing capital budgeting technique and 20 percent of them used executive decision while analyzing investment projects. Similarly, 20 percent of the company used both capital budgeting and CVP analysis while 20 percent of them have been practicing both executive decision and capital budgeting. None of the manufacturing companies have been practicing ratio analysis as a investment project analysis tools.

#### **4.2.6 Capital Budgeting Practice**

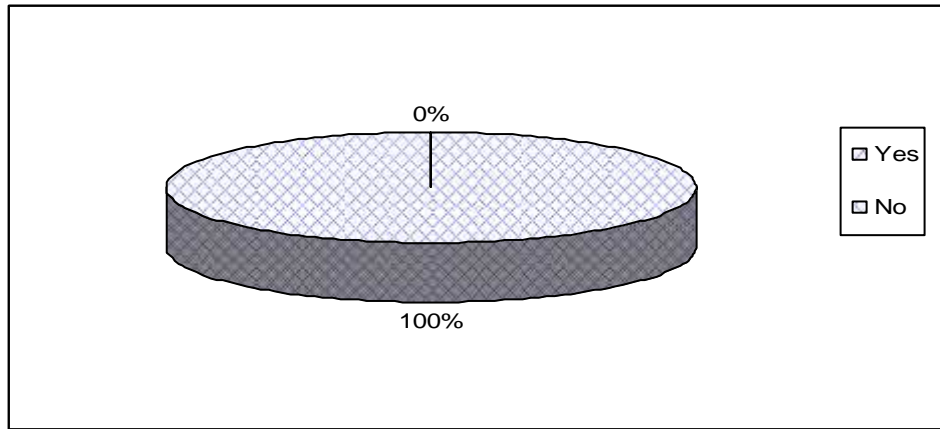
Capital budgeting as the decision making is the process by which firms evaluate the purchase of major fixed assets including building machinery and equipment. It is also covers decision to acquire other firms either thought the purchase of their common stock or groups of assets that can be used to conduct an ongoing business. So, the below table tries to find out the preference given by manufacturing companies to the capital budgeting.

**Table 4.6**  
**Capital Budgeting Practice**

| <b>Response</b> | <b>Frequency</b> | <b>Percent</b> |
|-----------------|------------------|----------------|
| Yes             | 5                | 100            |
| No              | 0                | 0              |
| <b>Total</b>    | <b>5</b>         | <b>100</b>     |

*Source: Field Survey*

**Figure 4.6**  
**Capital Budgeting Practice**



According to the above table and figure it can be concluded that all the Nepalese manufacturing companies have been practicing capital budgeting for the long term investment project. Capital budgeting is one of the most important and useful technique to evaluate investment project for each company. It minimizes the cost of the project.

#### **4.2.7 Capital Budgeting Tools Practice in Nepalese Manufacturing Companies**

More purposes for project are at the threshold of the business firm comparing to its ability and wiliness to finances some proposals good, other are different and at others poor. A screening has to be devised for finding out the real content of such

proposal. Methods of differentiating them should be developed. For this purpose, numerous methods of measuring the economic value of an investment can be found. The following table presents the responses acquired from the sample Nepalese manufacturing companies regarding the capital budgeting tools practiced.

**Table 4.7**

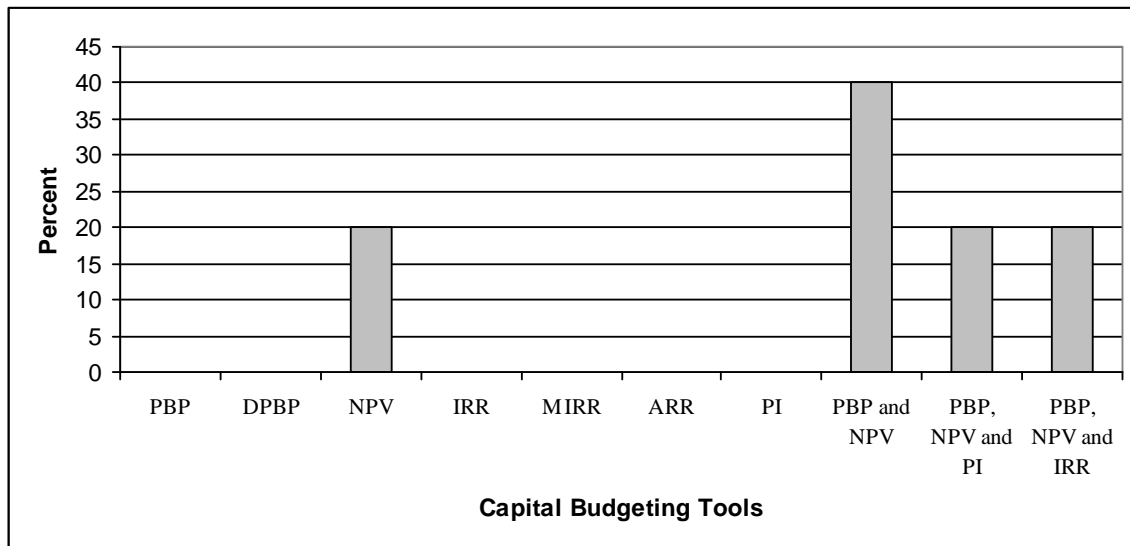
**Capital Budgeting Tools Practice in Nepalese Manufacturing Companies**

| Tools            | Frequency | Percent    |
|------------------|-----------|------------|
| PBP              | 0         | 0          |
| DPBP             | 0         | 0          |
| NPV              | 1         | 20         |
| IRR              | 0         | 0          |
| MIRR             | 0         | 0          |
| ARR              | 0         | 0          |
| PI               | 0         | 0          |
| PBP and NPV      | 2         | 40         |
| PBP, NPV and PI  | 1         | 20         |
| PBP, NPV and IRR | 1         | 20         |
| <b>Total</b>     | <b>5</b>  | <b>100</b> |

*Source: Field Survey*

**Figure 4.7**

**Capital Budgeting Tools Practice in Nepalese Manufacturing Companies**



The above table and figure show the capital budgeting tools practiced by the Nepalese manufacturing companies. All of the manufacturing companies have been practicing net present value to analyze project as common method. 20 percent of the companies used NPV only whereas 60 percent used both PBP and NPV. Similarly, 20 percent of the company have been practicing all PBP, NPV & PI and next 20 percent practiced PBP, NPV & IRR for long term investment project. None of the company practice DPBP, MIRR & ARR for long term investment. Time value of money is also the important factor which should be considered in the calculation of expected cash flows. Every business houses need to considered this factors while making decision to minimize risk.

#### 4.2.8 Major Difficulties for Practicing of Capital Budgeting

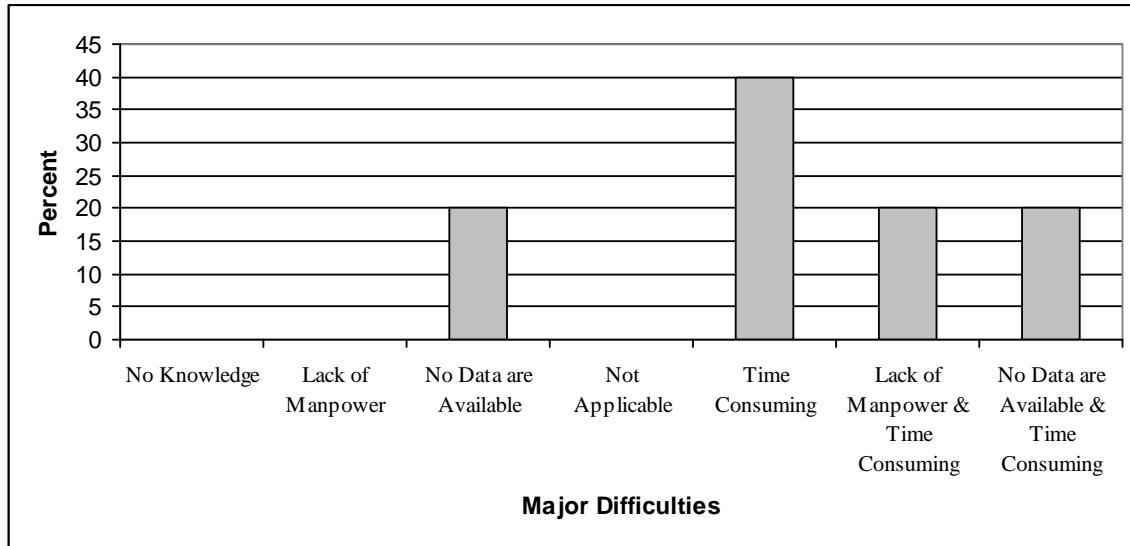
Capital budgeting is investment decision-making as to whether a project is worth undertaking. Capital budgeting is basically concerned with the justification of capital expenditures. Although, capital budgeting is an important decision making tool for investment project, some companies were not practicing it till now. The table below presents the difficulties in practicing capital budgeting by sample Nepalese manufacturing companies.

**Table 4.8**  
**Difficulties for Practicing of Capital Budgeting**

| Reason                                   | Frequency | Percent    |
|--|-----------|------------|
| No Knowledge                             | 0         | 0          |
| Lack of Manpower                         | 0         | 0          |
| No Data are Available                    | 1         | 20         |
| Not Applicable                           | 0         | 0          |
| Time Consuming                           | 2         | 40         |
| Lack of Manpower and Time Consuming      | 1         | 20         |
| No Data are Available and Time Consuming | 1         | 20         |
| <b>Total</b>                             | <b>5</b>  | <b>100</b> |

*Source: Field Survey*

**Figure 4.8**  
**Difficulties for Practicing of Capital Budgeting**



The above table and fig. illustrate the major difficulties faced by sample manufacturing companies while applying capital budgeting techniques. 40 percent of Nepalese manufacturing company faced time consuming difficulty in using capital budgeting . It was seen in the figure that 20 percent of the company assumed that not availability of the data. 20 percent of them faced lack of manpower & time consuming difficulties and another 20 percent assumed not availability of data & time consuming were the major difficulties felt by manufacturing companies in applying capital budgeting. Although all the respondent have mentioned that they are practicing capital budgeting to analyze investment project but there is lack of expertise and trained manpower.

#### **4.2.9 Decision Body for Investment**

Capital budgeting is an important managerial tool. Every business houses need to take decision. Here the concerned is that who takes the decision to invest on project. To do this, a sound procedure to evaluate, compare, and select projects is needed. It is crucial to select the investment project for each company which requires huge investment. Therefore, decision maker must be able to decide

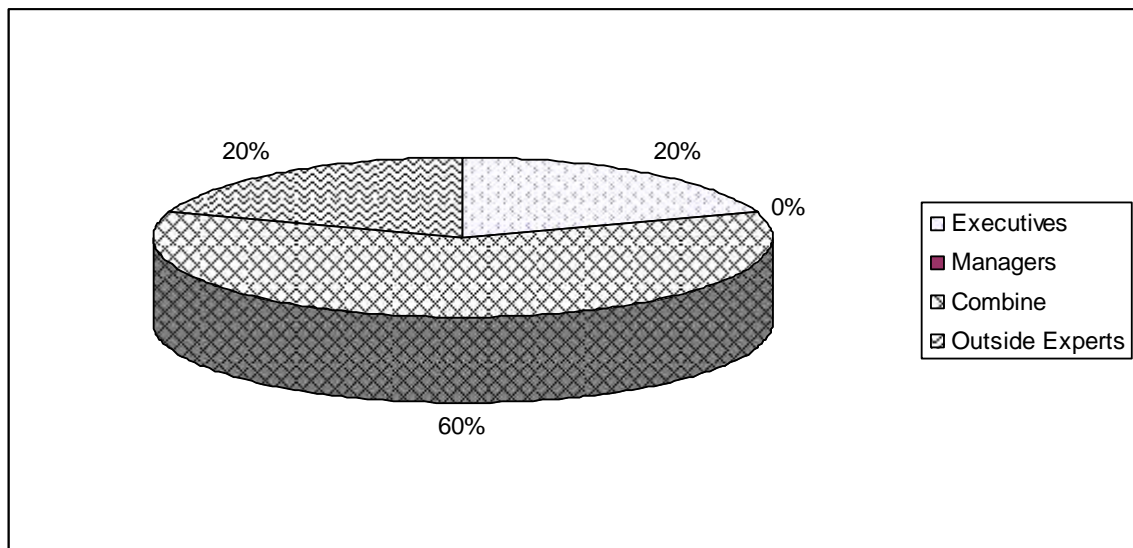
whether an investment is worth undertaking and be able to choose intelligently between two or more alternatives. There are modern approaches like participatory approach came in to practice which includes all employees in decision making process. The approaches may save the cost for the organization and help to reach in the best alternative. The table below presents the state of decision taking body on capital investment.

**Table 4.9**  
**Decision Body on Investment**

| <b>Decision Body</b> | <b>No of Respondent</b> | <b>No. of Practicing Company</b> | <b>Percent</b> |
|----------------------|-------------------------|----------------------------------|----------------|
| Executive            | 5                       | 1                                | 20             |
| Managers             | 5                       | 0                                | 0              |
| Combine              | 5                       | 3                                | 60             |
| Outside Experts      | 5                       | 1                                | 20             |

*Source: Field Survey*

**Figure 4.9**  
**Decision Body on Investment**



The above table and figure verify the decision body on investment. In most of the manufacturing companies i.e. 60 percent decision on investment projects are taken by combination of executive and managers. Only the 20 percent of

companies decisions are taken by executives and outside experts each. Although hiring outside experts to make decision is useful but it might be costly. Every business houses should train and develop their employees for analytical purpose while making decision. So, they should be focused on modern participatory approach in decision making process..

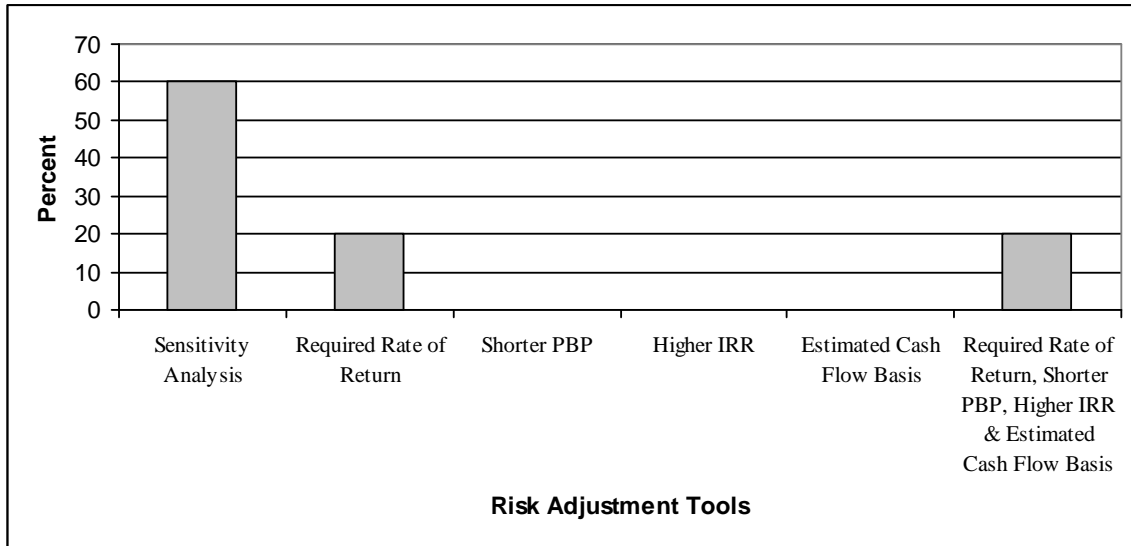
#### **4.2.10 Method of Risk Adjustment While Evaluating Capital Investment**

The capital budgeting decision is based on the benefits to be derived from the project in future. The benefits are measured in terms of cash flows. The estimated future cash flows are based on various assumptions. The accuracy of the estimates of future return largely depend upon the accuracy with which these factors are forecast. The actual return will not precisely correspond to the estimate. In other words, the actual returns will vary from the estimate. This is technically referred to as risk. The firm generally uses its normal or average, required rate of return to evaluate projects that have average risk, a few percentage points are added to the average required rate of return to evaluate projects that have above-average risk, and a few percentage points are subtracted from the average required rate of return to evaluate projects that have below-average risk. It is important that a project's risk be considered in capital budgeting analysis, because incorrect decisions might be made if risk is not considered.

**Table 4.10**  
**Method of Risk Adjustment While Evaluating Capital Investment**

| <b>Method</b>  | <b>No of Respondent</b> | <b>No. of Company</b> | <b>Percent</b> |
|--|-------------------------|-----------------------|----------------|
| Sensitivity Analysis   | 5                       | 3                     | 60             |
| Required Rate of Return  | 5                       | 1                     | 20             |
| Shorter Pay Back Period  | 5                       | 0                     | 0              |
| Higher IRR   | 5                       | 0                     | 0              |
| Estimated Cash Flow Basis  | 5                       | 0                     | 0              |
| Required Rate of Return,<br>Shorter PBP, Higher IRR and<br>Estimated Cash Flow Basis | 5                       | 1                     | 20             |

**Figure 4.10**  
**Method of Risk Adjustment While Evaluating Capital Investment**



The above table and figure show the risk adjustment tools while practicing capital budgeting. 60 percent of the manufacturing companies have been practicing sensitivity analysis to adjust risk in capital budgeting. Similarly, 20 percent of them used required rate of return as risk adjustment tool. Likewise, 20 percent of the company used all four required rate of return, shorter payback period, higher IRR and estimated cash flow which might be the biasness in answering questionnaire.

#### **4.2.11 Management Accounting Tools Practices in Nepalese Manufacturing Companies**

Management accounting for manufacturing companies has to contribute to focusing the process of strategic planning and provide information to facilitate decision making and financial control of the different business units involved. Different management accounting tools are needed to be carried out for planning, controlling and decision making process. Management accounting tools are applied discipline used in various industries. The following table presents the response acquired from the Nepalese manufacturing companies regarding the management accounting tools practiced.

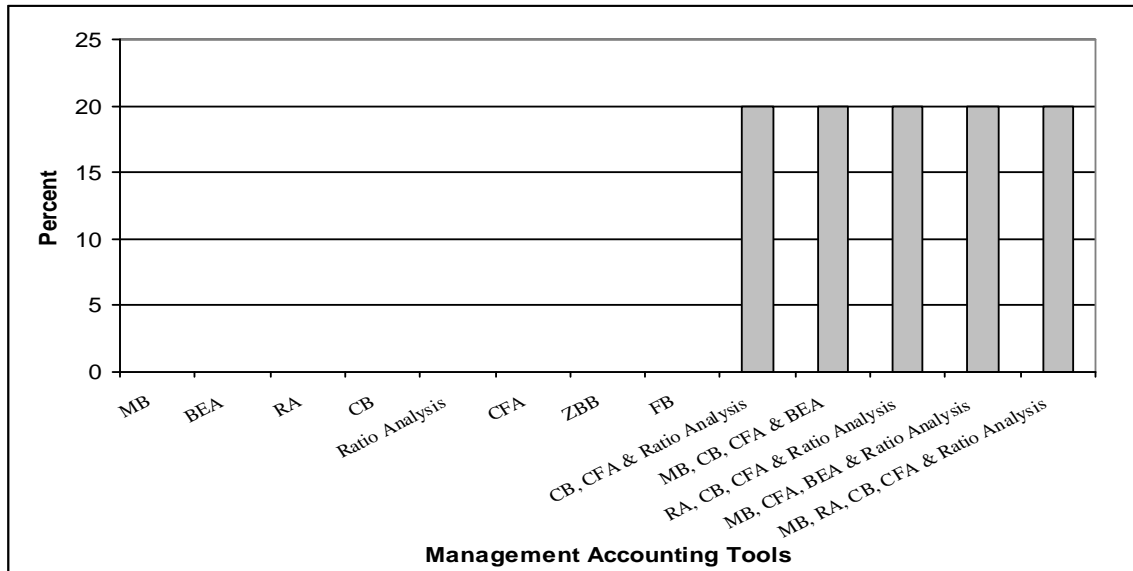


**Table 4.11**  
**Practice of Management Accounting Tools**

| <b>Tools</b>                     | <b>No of Respondent</b> | <b>No. of Company</b> | <b>Percent</b> |
|----------------------------------|-------------------------|-----------------------|----------------|
| Master Budget (MB)               | 5                       | 0                     | 0              |
| Breakeven Analysis (BEA)         | 5                       | 0                     | 0              |
| Responsibility Accounting (RA)   | 5                       | 0                     | 0              |
| Capital Budgeting (CB)           | 5                       | 0                     | 0              |
| Ratio analysis (RA)              | 5                       | 0                     | 0              |
| Cash Flow Analysis (CFA)         | 5                       | 0                     | 0              |
| Zero Based Budgeting (ZBB)       | 5                       | 0                     | 0              |
| Flexible Budgeting (FB)          | 5                       | 0                     | 0              |
| CB, CFA & Ratio Analysis         | 5                       | 1                     | 20             |
| MB, CB, & BEA                    | 5                       | 1                     | 20             |
| RA, CB, CFA & Ratio Analysis     | 5                       | 1                     | 20             |
| MB, CFA, BEA & Ratio Analysis    | 5                       | 1                     | 20             |
| MB, RA, CB, CFA & Ratio Analysis | 5                       | 1                     | 20             |

*Source: Field Survey*

**Figure 4.11**  
**Practice of Management Accounting Tools**



The above table and figure exhibit the practice of management accounting tools in sample manufacturing companies of Nepal. All the manufacturing companies have been practicing more than one management accounting budgeting tools. 20 percent of respondents used capital budgeting, cash flow analysis & ratio analysis. Similarly Master budget, capital budgeting, cash flow analysis & break even analysis, Responsibility accounting, capital budgeting, cash flow analysis & ratio analysis, Master budget cash flow analysis, break even analysis & ratio analysis and Mater budget responsibility accounting, capital budgeting, cash flow analysis & ratio analysis, all these combinations were practiced by 20 percent of the manufacturing companies. None of the Nepalese manufacturing company practiced flexible and zero base budgeting.

Nepal is proceeding towards globalization and got the membership of WTO, Nepalese business enterprises should adopt themselves to the global environment. Managers should think in a global perspective. Information should be updated. For better utilization of the limited resources and for achieving goals under the

circumstances of ruthless competition, application of advanced managerial accounting tools can be of great help.

#### **4.2.12 Comment**

The study was done with an objective to study and examine the present practice of capital budgeting tools in the manufacturing companies of Nepal, and to identify the areas where capital budgeting tools can be applied to strengthen the manufacturing companies through saving cost.

Although universities and government have put greater effort on practices of capital budgeting for investment project but in some company there is lack of its practice. One of the respondent mentioned that in case of private limited company, most of the major decision are taken by executive body. So all these theoretical concept of capital budgeting does not fully implemented in practical scenario. Which might represents the actual situation of capital budgeting practices.

#### **4.3 Major Findings**

On the basis of above analysis, examinations and information discussion the following key findings have been drawn.

- ) There is significant practices of capital budgeting.
- ) Regarding the response of Nepalese manufacturing company there is significant practice of comprehensive budgeting i.e. 60% and 20% of the companies are practicing traditional and program budgeting. None of the manufacturing companies are applying zero based budgeting.
- ) 40% of Nepalese manufacturing companies are preparing their budget on the basis of past actual expenses. Similarly, 40% percent of them are preparing budget on the basis of the past budget estimates and 20% of them are preparing on the basis of both past actual expenses and activity based

- budgeting. None of the manufacturing company are practicing modern useful tool zero based budgeting.
- ) Most of the Nepalese manufacturing companies are making investment plan through executive decision (60%) and 20% of the companies are practicing both financial analysis & executive decision. Whereas 20 percent of the manufacturing companies are applying all three methods, forecasting, cost benefit analysis as well as financial analysis to plan their investment. Executive decision dominated in planning investment.
  - ) All of manufacturing companies collect their fund from banks for their investment projects. 80% of manufacturing companies are using bank loan only and 20 % are using both bank loan and issuing shares to raise fund. None of the companies are using issuing debentures and loan from private party for their fund collection.
  - ) To evaluate investment project 80% of the companies are practicing capital budgeting technique only and 20% are using executive decision only. 20 percent of the companies are using both capital budgeting and CVP analysis. Similarly, 20% of them are using both executive decision and capital budgeting to analyze project whereas none of the manufacturing company are practicing ratio analysis as an investment project analysis tools.
  - ) All of the manufacturing companies are practicing net present value as one of the common analysis tool. 20 percent of the companies are using NPV only whereas 40 percent of them are using both NPV and pay back period. Similarly, 20 percent of the company are practicing PBP, NPV & PI as well as 20 percent of them are practicing PBP, NPV & IRR all tools for long term investment project. None of the companies are practicing DPBP, MIRR and ARR for long term investment.
  - ) Most of the Nepalese manufacturing companies are facing time consuming difficulty in using capital budgeting following by none availability of data

and lack of men power. 60 percent of the companies are facing time consuming difficulty only for implementing capital budgeting tools and 20 percent of them are feeling data were not available to analyze investment project. Similarly, each 20 percent of the respondents are facing lack of manpower & time consuming and no data are available & time consuming difficulties.

- ) 60 percent of the manufacturing company are practicing sensitivity analysis to adjust risk in capital budgeting. Similarly, 20 percent of them are using required rate of return as risk adjustment tool. Likewise 20 percent of the companies are using required rate of return, shorter pay back period, higher IRR and estimated cash flow.
- ) Most of the manufacturing companies are practicing more than three management accounting tools. All the tools master budget, capital budgeting, cash flow analysis & ratio analysis; master budget, capital budgeting, cash flow analysis & break even analysis; responsibility accounting, capital budgeting, cash flow analysis & ratio analysis; master budget, cash floe analysis, break even analysis & ratio analysis and mater budget, responsibility accounting, capital budgeting, cash flow analysis & ratio analysis are practicing by 20/ 20 percent of the manufacturing companies. None of the Nepalese manufacturing companies are practicing flexible and zero base budgeting.

## **CHAPTER - V**

### **SUMMARY CONCLUSION AND RECOMMENDATION**

#### **5.1 Summary**

Capital budgeting decisions are involved with the use of cash now and get back the investment over a period longer than a year. Evaluating such decisions requires determining the investment and its resulting cash flows. Investments provide future cash flows through additional revenues and costs, and through cost saving critical to capital budgeting is that most, if not all, of the numbers used in the analyses are estimates.

The company's circumstances in terms of available funds and investment opportunities should be considered before selecting a single capital budgeting technique for general use. Capital investments must earn returns on both working capital and plant investments. Investments that reduce inventories are especially desirable because the payoff is very high. Capital budgeting decisions involve many estimates, so managers perform sensitivity analysis to alert themselves to areas where they might face problems.

Capital budgeting decision requires recognizing the time value of money. The two most popular approaches, called discounted cash flow techniques, are the net present value (NPV) and the internal rate of return (IRR) methods. The traditional methods-payback period and accounting rate of return are often used, but are conceptually inferior because they fail to consider the time value of money. Yet, such methods, particularly payback, might be useful as rough screening devices. The source of financing a particular investment is not considered in it.

Risk is only one condition a decision maker may face. Uncertainty and risk describe the conditions most financial managers face. Probability and statistics provide useful methods for describing such situations. If only one outcome is

possible, the situation can be described as certainty. If more than one outcome is possible but the probabilities of these states of nature are unknown, decisions are made under conditions of uncertainty. Different decisions rules are followed in each decision situation. Decision making under risk is different from decision making that considers the degree of risk or uncertainty.

Industrial sector plays an important role in the economic development of the country. Manufacturing companies are one of the vital aspects of this sector. About 10% share in the GDP has contributed by manufacturing sector. Out put value, value added and fixed capital investments are increasing in manufacturing sectors.

The major capital budgeting tools are PBP, NPV, PI, IRR, ARR, DPBP, MIRR etc. The research was conducted to find out the facts that the Nepalese Manufacturing companies are getting benefits from using those capital budgeting tools or not?

The study was done with an objective to study and examine the present practice of capital budgeting tools in the manufacturing companies of Nepal, and to identify the areas where capital budgeting tools can be applied to strengthen the manufacturing companies through saving cost.

As per the nature and demand of the study, survey type research design was adopted with descriptive and analytical approach. The research is mostly based on primary source of information. Surveys of 5 manufacturing companies of Nepal were made through questionnaires. All together 11 questionnaires were distributed and analyzed. The raw data was applied to analyze and interpret the findings.

## **5.2 Conclusion**

On the basis of the major findings of study, some conclusion has drawn about the capital budgeting tools practice in manufacturing companies of Nepal. Most of the manufacturing companies adept the tools like PBP and NPV. The tools not in well practice were DPBP and MIRR. It can also be concluded that the major difficulties applying for capital budgeting are time consuming process and no availability of data.

Although universities and government has put greater effort on practices of capital budgeting for investment project but in some company there is lack of its practice. One of the respondent argues that in case of private limited company, most of the major decision are taken by executive body. So all these theoretical concept of capital budgeting does not fully implemented in practical scenario. Which might represents the actual situation of capital budgeting practices.

Capital budgeting in Nepalese manufacturing companies is still evolving and will continue to do so in the future. So far, they are trying to adopt such tools and techniques to cope with the future expected opportunities and challenges to be faced due to the accession of globalization

## **5.3 Recommendation**

In the light of the study following are the recommendation for the further managerial actions to the manufacturing company.

- ) Practice of development of invest plan for capital investment programme has to be developed by the business houses.
- ) For each investment in fixed assets each and every company should develop the practice of feasibility analysis by using capital budgeting.
- ) For budget preparation, Nepalese manufacturing companies have been practicing based on the basis of past actual expenses and past budget



- estimates. Those are traditional methods and can not adjust the future uncertainty because past will not happen in the future. So, it is recommended to use activity based budgeting and zero based budgeting for budget preparation.
- ) Participatory system of decision making should be implemented for effective implementation and participation of all members effected by the decision. It helps to motivate the personnel of organization.
  - ) To strengthen the competitiveness of Nepalese manufacturing companies and to carry out the managerial activities, the use of management accounting tools is recommended.
  - ) Academicians should put effort to bring management accounting tools into the light by the help of books, journals, articles and campaigns such as seminar, workshop and training. It is helpful to get more information about the tools and techniques. Long term as well as short term training packages should be offered for the managers about the techniques of management accounting and to update the knowledge and skill.
  - ) Hiring the outside experts to analyze the long term investment plan may increase the cost burden for the organization. So it is recommended to develop the expert internally by providing training and development programme.
  - ) It is recommended to Nepalese business houses for the risk adjustment while purchasing fixed assets or making long-term investment through the tools like shorter payback period and sensitivity analysis.
  - ) Combine efforts of all Nepalese business houses is recommended to stand in the global environment through providing training and development programme to their staffs and make familiar about the tools and techniques not only of capital budgeting but also the on other modern management accounting tools.

## Appendix -1

### Questionnaire

The questionnaires are base line to conduct a research work entitled “**CAPITAL BUDGETING PRACTICES IN MANUFACTURING COMPANIES OF NEPAL.**” in partial fulfillment of the requirement for the Master Degree of Business Studies (MBS). All the alternatives are equally important.

Name (Optional) :

Position (Optional) :

Company :

1) What system of budgeting do you practice in your company?

- a) Traditional Budgeting [ ]
- b) Program Budgeting [ ]
- c) Comprehensive Budgeting [ ]
- d) Zero Based Budgeting [ ]
- e) Others.....

2) What is the basis for budgeting in your company?

- a) Based on past budget estimates. [ ]
- b) Based on past actual expenses. [ ]
- c) Zero based budgeting. [ ]
- d) Activity based budgeting. [ ]

e) Others .....

3) How do you plan your investment in your company?

a) Forecasting. [ ]

b) Cost Benefit Analysis. [ ]

c) Financial Analysis. [ ]

d) Executive Decision. [ ]

e) Others.....

4) What are the sources of fund in your company?

a) Bank Loan. [ ]

b) Issuing Shares. [ ]

c) Issuing Debentures. [ ]

d) Loan from private party. [ ]

5) While selecting investment project, what practice do you follow?

a) Executive Decision. [ ]

b) Capital Budgeting. [ ]

c) CVP Analysis. [ ]

d) Ratio Analysis. [ ]

6) Do you practice capital budgeting?

a) Yes.[ ]

b) No. [ ]

7) If yes, what are the tools do you practice in Capital Budgeting?

- a) Pay Back Period. [ ]
- b) Discounted Pay Back Period. [ ]
- c) Net Present Value. [ ]
- d) Internal Rate of Return. [ ]
- e) Modified Internal Rate of Return. [ ]
- f) Accounting Rate of Return. [ ]
- g) Profitability Index. [ ]

8) Which of the following difficulties your company face in implementing capital budgeting?

- a) No knowledge. [ ]
- b) Lack of manpower. [ ]
- c) No data are available. [ ]
- d) Not applicable. [ ]
- e) Time Consuming [ ]

9) Who does the decision on Investment in your company?

- a) Executive. [ ]
- b) Managers. [ ]
- c) Combine. [ ]
- d) Outside Experts [ ]
- e) Others.....

10) Which methods your company follows risk adjustment while evaluating capital investment?

- a) Sensitivity Analysis. [ ]
- b) Required Rate of Return. [ ]
- c) Short Pay Back Period. [ ]
- d) Higher IRR. [ ]
- e) Estimated for cash flow basis. [ ]

11) Which of the following management accounting tools do you practice in your company?

- a) Master Budget [ ]
- b) Breakeven Analysis [ ]
- c) Responsibility Accounting. [ ]
- d) Capital Budgeting. [ ]
- e) Ratio Analysis [ ]
- f) Cash Flow Analysis. [ ]
- g) Zero Based Budgeting. [ ]
- h) Flexible Budgeting [ ]

12) Any comment?

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