

# A Study on Effect of Capital Budgeting Techniques on Financial Performance of Manufacturing Industry

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**Abstract** - This study aimed at establishing how various CBT had impacted on the financial performance of manufacturing industry in Sangli and Kolhapur district of Maharashtra, India. This research is subjective and adopted inductive approach in order to answering research questions.

The sample size for the study was 50 firms selected as per convenience sampling method from the targeted area. The researcher collected primary data using questionnaires. The collected data was checked for completeness, coded and captured into MS Excel for analysis. Descriptive and inferential statistics were used to analyze data by way of means (measure of central tendency) and standard deviation (measure of dispersion).

The study found out that manufacturing companies rely on capital budgeting techniques in decision making such as Replacement, Lease or Buy, Mutually Exclusive Projects, Independent Projects and Contingent Projects.

The study concludes that capital budgeting techniques have correlation with financial performance of companies.

**Keywords** — Budgeting, Capital, Lease, Mutually Exclusive, Return, Replacement.

## I. INTRODUCTION

Capital investment is a tricky affair considering the fact that the investment would take a while for recouping. In order to make wise investment decisions, it is important that organizations are availed with a way of evaluating various investment options at their disposal. Capital budgeting enables organizations to evaluate various investment options for optimal shareholders' wealth creation. For this purpose, it is important that future cash flows from a given project are estimated to help the management make a wise decision. Since capital project investment speculation is a key component in corporate execution, corporate administrators ought to see how capital venture choices are made on the off chance that they are to take an interest in enhancing corporate execution.

The study sought to analyze how various CBT have impacted on the financial performance of the manufacturing industry in Sangli and Kolhapur district of Maharashtra, India. Therefore, a number of CBT were selected and respondents were requested the extent to which each of this CBT is applied by their organizations in appraising investment projects.

### Analysis of Review

This literature review sort to address how capital budgeting has impacted financial performance of companies in study area. The review clearly distinguished between the various techniques which consider time value of money on impacting financial performance and those which don't put any emphasis in money value over time. Previous studies on

the relationship between the CBT and financial performance have been referenced just to expound on the balance between the two variables

## II. RESEARCH PROBLEM

The rate which is used in converting future cash flows into the present time is a key determinant of whether projects are undertaken or not (Meier, Christofides and Salkin, 2011). This compounding rate is applied by organizations to convert future streams of cash flows into the present for the purposes of reaching a final decision on what projects to undertake and what not to undertake.

## III. RESEARCH OBJECTIVES

- i. To know the use of capital budgeting techniques in manufacturing companies in study area.
- ii. To determine the extent of application of capital budgeting techniques for decision making.
- iii. To determine the extent of application of capital budgeting techniques on financial performance of the manufacturing industry.

## IV. RESEARCH DESIGN

The study applied descriptive research design using survey method as not all the target population elements were included in the study. It is usually concerned with describing a population with respect to important variables. Descriptive research according to Cooper and Schindler (2008), it tries to explain relationship among variables and fact finding enquiries of different kinds.

**V. SAMPLE SIZE AND PROCEDURE**

The researcher purposively picked 50 large capital intensive manufacturing companies which uses capital budgeting. The samples were selected as per convenience sampling method from the targeted area.

**VI. DATA COLLECTION, ANALYSIS AND INTERPRETATION**

The research data was gathered exclusively through questionnaires designed in line with the research objectives. This was sought to ascertain how the firm has performed with the various techniques and if any desire to change in future. The collected data was checked for completeness, coded and captured into MS Excel for analysis. Descriptive and inferential statistics were used to analyze data by way of means (measure of central tendency) and standard deviation (measure of dispersion). The data collected was then presented in form of tables, charts and graphs. The research was made using SPSS to estimate the result of the regression/correlation between the variables.

**VII. DATA COLLECTION, ANALYSIS AND INTERPRETATION**

The study sought to analyze how various CBT have impacted on the financial performance of the manufacturing industry in study area. Therefore, a number of CBT were selected and respondents were requested the extent to which each of this CBT is applied by their organizations in appraising investment projects.

**Table 1: Use of Capital Budgeting Techniques**

**Table 2: Extent of Use of CBT in Decision Making**

Capital Budgeting Techniques	Mean	Std. Dev
NPV	4.0526	.76925
IRR	3.1053	.83146
ARR	4.2105	.52802
PBP	3.1842	.83359
PI	3.6842	.47107
Benefit/Cost Ratio	2.6316	.78572

The study findings revealed that manufacturing companies rely on NPV in decision making as supported by a mean of 4.0526 and standard deviation of 0.76925. IRR was also found to be useful in decision making as supported by a mean of 3.1053 and standard deviation of 0.83146. The study further revealed that ARR is useful in decision making at companies for the mean was 4.2105 and standard deviation was 0.52802. The studies also revealed that manufacturing industry rely on PBP in decision making as the mean was 3.1842 and standard deviation was 0.83359. They are also on PI in making capital appraisal decision for the mean was 3.6942 and standard deviation was 0.47107. The study also revealed that benefit/cost ratio is applied by companies in making decisions as the mean was 2.6316 and standard deviation was 0.62259

**Extent of Use of CBT in Decision Making**

The study sought to establish the extent to which techniques of capital budgeting is applied in decision making.

Decisions	NPV		IRR		PI		PBP		ARR	
	x	S.D.	Mean	S.D.	Mean	S.D.	Mean	S.D.	Mean	S.D.
Replacement	3.8	.39	3.6	.58	3.1	.81	3.1	.83	3.0	.92
Lease or Buy	3.8	.83	3.1	.82	2.6	.58	3.2	1.4	3.1	1.4
Mutually Exclusive Projects	3.9	.78	2.6	1.14	2.2	1.05	2.3	.94	4.2	.44
Independent Projects	4.3	.58	3.55	.50	3.7	.68	3.5	1.0	3.1	.83
Contingent Projects	3.05	.76	2.94	.76	3.6	.58	2.7	.73	2.3	1.07
Average of Means	3.78	0.66	3.19	0.76	3.04	0.74	2.96	0.98	3.14	0.93

Above table revealed that manufacturing companies apply CBT in making various decisions. NPV is used in making all above decisions supported by mean of 3.78 and Standard deviation 0.66. Internal rate of Return technique also used to take replacement, lease or buy and independent project decision. Pay-back period method used to evaluate investment in independent projects with mean of 3.5 and S.D. 0.98.

**Effect of Capital Appraisal Method on Performance (Return on Assets)**

The study sought to investigate the effect of the identified CBT on financial performance of real estate firms. Financial performance was determined by the return on assets.

**Table 3: Effect of Capital Appraisal Method on Performance (Return on Assets)**

Capital Budgeting Techniques	Mean	Std. Dev
NPV	3.8947	1.18069
IRR	3.9211	1.02355
ARR	3.5526	.50390
PBP	2.6053	.49536
PI	4.0789	1.04962
Benefit/Cost Ratio	2.6842	.47107

The study found out that NPV affects financial performance of manufacturing companies as the mean was 3.8947 and standard deviation was 1.18069. It was revealed that IRR affects financial performance of real estate companies as the mean was 3.9211 and standard deviation was 1.02355. There is also an effect of ARR on financial performance of manufacturing companies for the mean was 3.5526 and standard deviation of 0.50390. The study also revealed that PBP also effects financial performance of manufacturing companies for the mean was 2.6053 and standard deviation of 0.49536. The study found out that PI has an effect on financial performance as the mean was 4.0789 and standard deviation of 1.04962.

It was also revealed that benefit/costs ratio affects financial performance as the mean was 2.6842 and standard deviation was 0.47107. The study established that other capital budgeting techniques affect financial performance of manufacturing companies for the mean was 3.1579 and standard deviation was 0.82286.

**Regression Analysis**

Multiple regression analysis was conducted to establish relation between variables of the study. Findings are summarized in subsequent tables

**Table 4: Model Summary**

R	R Square	Adjusted R Square	Std. Error of the Estimate
.791	.626	.567	.89660

From the above findings, the value of R is 0.791, R square is 0.626 and adjusted R squared is .567. This therefore implies that 62.6% changes in firm financial performance is contributed by the NPV, IRR, PI, PBP and ARR.

**Table 5: ANOVA**

Model	Sum of Squares	Df	Mean Square	F	Sig.
Regression	24.876	5	4.975	10.694	.000
Residual	14.888	32	.465		
<b>Total</b>	<b>39.764</b>	<b>37</b>			

The ANOVA findings at 95% confidence level and 5% significant level indicate that F calculated is 10.694 while F critical from the F Table is 2.51. Since the value of F calculated is greater than F critical (10.694 > 2.51), this is a good indicator that the overall model was significant in establishing the relationship between variables.

**Table 6: Regression Coefficients**

	Un standardized Coefficients		Standardize d coefficients Beta	t	Sig.
	B	Std. Error			
(Consta nt)	.003	.127		.024	.981

NPV	.630	.564	.988	1.117	.027
IRR	.463	.572	.646	.809	.042
PI	.719	.256	.887	2.809	.008
PBP	.355	.494	.383	.719	.047
ARR	.699	.416	.821	1.682	.010

The resultant equation becomes:

$$Y = 0.003 + 0.630X_1 + 0.463 X_2 + 0.719X_3 + 0.355X_4 + 0.699X_5 + \epsilon$$

Where Y = Firm's Financial Performance (Return on Assets), X1= NPV, X2 =IRR, X3=PI, X4=PBP, X5=ARR and ε is an error term.

Therefore, when all the variables are held constant, financial performance of manufacturing companies would be at 0.003, a unit increase in NPV holding other variables constant would increase financial performance by 0.630, a unit increase in IRR holding other variables constant would increase financial performance by 0.463, a unit increase in PI holding other variables constant would improve financial performance by 0.719, a unit increase in PBP holding other variables constant would improve financial performance of real estate companies by 0.355 and a unit increase in ARR holding other variables constant would increase financial performance by 0.699.

These findings concur with Wokabi (2014) who found out that taking all other independent variables at zero, a unit increase in capital budgeting techniques will lead to an increase in the scores of return on investment. However, all the p values were significant since they were all lower than 0.05.

**VIII. FINDINGS**

1. The study found that more capital intensive Manufacturing companies in study area are practicing capital budgeting techniques.
2. The study revealed that manufacturing companies rely on capital budgeting techniques in decision making such as Replacement, Lease or Buy, Mutually Exclusive Projects, Independent Projects and Contingent Projects.
3. The study found that the use capital budgeting techniques affects financial performance of manufacturing companies in study area.
4. Researcher found that taking all other independent variables at zero, a unit increase in capital budgeting techniques will lead to an increase in the scores of return on investment.

**IX. RECOMMENDATION FOR THE STUDY**

The study recommends that management of manufacturing firms in Sangli and Kolhapur district should adopt Capital Budgeting techniques for evaluation of large capital intensive decisions. Manufacturing companies should ensure that a selected method of capital budgeting considers all incomes in the project's life. There is also need to adopt techniques that are easy to calculate. The study recommends

that manufacturing companies ought to adopt other techniques of capital budgeting in making lease or buy, mutually exclusive project and independent project decision.

The capital budgeting techniques in manufacturing companies in study area are not likely to be representative of all sectors. Thus, it is recommended that another study be done in other sectors of the industries.

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