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An Analysis and Explanation of the Relationship between Techniques of Capital Budgeting and the Performance of Companies Admitted to Tehran Stock Exchange (Iran)

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ABSTRACT

Methods of capital budgeting and manners of choosing them as prevalent techniques in the discipline of accounting can be considered as a management instrument for achieving the most important goal (maximization of the wealth of the shareholders). This shows that companies can increase or even maximize the capital of their shareholders with the help of sophisticated techniques of capital budgeting. So from the view point of classical financial theory, a positive relationship between sophisticated methods of capital budgeting and performance is expected. . In this research we want to know if there is any relationship between the capital budgeting techniques and the performance of the companies admitted to Iran Stock Exchange. To answer this question in this paper, the required information was, firstly, gathered using questionnaires about methods of budgeting capital projects in the companies under study. Then the criteria for evaluating performance were extracted from circulated reports of the companies, and the data were analyzed using statistical tests. The results of this research shows that in companies admitted to Iran's Stock Exchange, there is a significance relationship between capital budgeting techniques and performance, and that the companies which use sophisticated techniques have better performance in comparison to companies which use naïve techniques.

KEY WORDS: Capital budgeting, Sophisticated techniques, Naïve techniques of capital budgeting, Company performance.

INTRODUCTION

The managers of the economic units are closely concerned with investment in merchandise and service market on the one hand, and with the provision of financial resources on the other. Therefore, to fulfill these two tasks, the managers always seek the cheapest financial resources to perform the most efficient investments. Such investments, which provide the opportunity of growth and survival for the organization, play an important role in the success of the organization. Decision making on long-term investments (investment plans) is, therefore, an important part of the responsibilities of the managers. It will improve the performance of the company and hence, increases the wealth of the shareholders.

From a traditional viewpoint of financial theory, the correlation between sophisticated techniques of capital budgeting and the performance of the commercial unit is expected to be positive. Former studies on the relationship between sophisticated techniques of capital budgeting and the performance have presented few reasons for this correlation and, to a great extent, have taken it for granted. Nevertheless, there are different reasons which show that this relationship is complicated. For the one thing, the execution of sophisticated techniques of capital budgeting can be considered as a device for confronting the scarcity of resources. The theoretical relationship is, therefore, rather complicated and can be analyzed more deeply. For this reason, the main goal of the present study is to describe the relationship between sophisticated techniques of capital budgeting and the performance from a theoretical viewpoint and eventually, to empirically experiment this relationship in the companies admitted to Iranian Stock Exchange.

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REVIEW OF LITERATURE

The surveys performed on the American and British markets give mixed results. In his study, Kapon (1990) showed that there is a positive empirical correlation between the performance and capital need of the commercial units on the level of industry, but this relationship on the level of company is negative. Christy (1966), Klammer (1972), Pike (1984), Haka et al., (1985) and Farragher et al., (2001) found a negative relationship between capital budgeting sophistication and performance, which in most cases was insignificant. Only Kim (1982) established a significant positive relationship in his study on American, Korean and Japanese companies,.

A number of studies have been done in Iran on the methods used in different industries for making decisions about capital projects and plans. In some cases these studies have lead to different results. But none of them has dealt with the question "What will be the effect of adopting different techniques of capital budgeting on the performance of the companies?" or "Is there a correlation at all?"

Kamaly (2006) carried out a research on "the application of management accounting techniques in the evaluation of capital plans in Iran's automobile industry". According to the results of the study, most of the plans and projects in the country's automobile industry are capital plans, which are largely assessed by management accounting techniques.

Maasumian (1999) did a study about "the analysis of long-term investment methods (capital projects) in Tehran Stock Exchange" by sending questionnaires. The results indicated that the companies admitted to the Stock Exchange mostly use NPV and ARR methods to assess investment plans.

Sanaaty (1998) carried out "an analytical study of long-term investment decisions in Iranian agro-industrial units. He concluded that agro-industrial units prefer naïve techniques of evaluating capital projects, like payback period method, to accurate techniques of capital budgeting.

Research Hypothesis

This study has a major and two minor research hypotheses as follows:

Major Hypotheses:

There is a significant correlation between capital investment methods and company performance.

Fist Minor hypotheses:

There is a significant correlation between sophisticated capital budgeting techniques and the company performance.

Second Minor Hypotheses:

There is a significant correlation between naïve capital budgeting techniques and the company performance.

METHODOLOGY

The statistical population of this study is the companies admitted to Tehran Stock Exchange The sample chosen from this population only involved manufacturing companies. The study deals with the period between 2006 and 2011. In order to collect the data concerning the independent variable of the study (Capital budgeting techniques), and since such information is not usually circulated, a questionnaire was prepared and sent to the subjects under study. This was done to detect the way they used different capital budgeting techniques in these companies. In order to calculate the dependent variable of the study (performance), the ROA ratio as the most important performance index was calculated by means of the available information bank of the companies admitted to Tehran Stock Exchange. Finally, after examining the statements and receiving the returned questionnaires, we only got access to the information of 54 companies. With regard to Central Limit Proposition (in a normal distribution, each group must include at least 25 companies) these 54 companies were considered as the sample population of the study.

The statistical analysis used to test the hypotheses is the regression model at the significance level of %95. To examine the research hypothesis we can also use a regression with several independent binary variables, in which case, the significant line gradient will verify the research hypothesis. Of course if the dependent variable is normal, we may also use the T-test 2 of the independent sample; otherwise, we can use non-parametric Mann – Whitney Test.

To check the normality which is a prerequisite for the validity of T-test2, we use Kolmogorov-Semiror formula.

- **Summary of the Findings**:

A summary of the statistical tests of the hypotheses follows:

Hypotheses	Statistical Analysis	Results of the Analysis	Result Interpretation
Major Hypotheses	Simple linear regression model & Mann-Whitney Test	H0 is rejected.	There is a significant correlation between capital budgeting techniques and company performance.
First Minor Hypothesis	Simple linear regression model & Mann-Whitney Test	H0 is rejected.	There is a significant correlation between sophisticated capital budgeting techniques and company performance.
Second Major Hypothesis	Simple linear regression model & Mann-Whitney Test	H0 is rejected.	There is a significant correlation between naïve capital budgeting techniques and company performance.

DATA ANALYSIS AND RESULT INTERPRETATION

Discussing the Major Hypotheses: There is a significant correlation between capital budgeting techniques and company performance.

To test this hypothesis, firstly, Simple linear regression model was used. The results of the test indicated a correlation coefficient of 0.644 and model determination coefficient of 0.416, which means that %42 of the variations of the response variable (ROA) is justified by the independent variable (capital budgeting techniques). The value of probability related to the hypothesis of the inadequacy of model (H0 : $\beta 1 = 0$) equals 0.014 which is smaller than 0.05. This hypothesis is, therefore, rejected by a significance of %95. As a result, the model enjoys the required adequacy for the test. The probability value of the null hypotheses concerning the lack of correlation between the independent variable (capital budgeting techniques) and the response variable (H0 : $\beta 1 = 0$) is 0.014 which is smaller than 0.05. This hypothesis is, therefore, rejected by a significance of %95. So there is a significant correlation between the dependent and independent variables. On the other hand, since in the regression run, the independent variable (capital budgeting techniques) is binary and the dependent variable (ROA) is continuous, in this situation, the significance test of the regression line gradient (H0 : $\beta 1 = 0$) equals doing the hypotheses test H0 : $\mu 1 = \mu 2$. As it is observed in the section on descriptive statistics, the mathematical average of ROA in companies which use the naïve technique equals 0.1601, and in companies which use sophisticated techniques, it equals 0.1724. Consequently, with regard to the significance of the regression line gradient, we can claim that the ROA average is higher in companies which use sophisticated techniques.

In view of the fact that the independent variable is disjointed and binary and the response variable (ROA) is continuous and that the independent variable (ROA) was not normal, Mann-Whitney Test was used to compare the performance of the two groups of companies. The probability value of the test was 0.028 which is lower than 0.05. So the null hypothesis that there is no significant correlation is rejected with %95 of significance. This result verifies the research hypothesis. On the other hand, the average rank in companies using the sophisticated technique is 817 and the average rank in companies using naïve technique is 614. Therefore, companies using the sophisticated technique have better performance. AS it is observed, both analyses applied verify the research hypotheses and both showed that companies using sophisticated techniques have better performance.

-The First Minor Hypotheses: There is a significant correlation between sophisticated capital budgeting techniques and company performance.

With regard to testing this minor hypothesis, based on the results of the test of the major hypotheses, we can conclude that there is a significant correlation between the independent variable (sophisticated capital budgeting techniques) and the dependent variable (company performance).

-The Second Minor Hypotheses: There is a significant correlation between naïve capital budgeting techniques and company performance.

Also, with regard to testing this minor hypothesis, based on the results of the test of the major hypotheses, we can conclude that there is a significant correlation between the independent variable (naïve capital budgeting techniques) and the dependent variable (company performance).

RESULTS AND DISCUSSION

Although the results of the study showed a significant correlation between the independent variable (capital budgeting techniques) and the dependent variable (ROA), but the effect of the independent variable on the dependent variable was about %42, which indicates that in the real world, a phenomenon may be affected by numerous factors and variables. Some of these factors and variables are known to the researcher and he can, to some extent, detect their effect on the phenomenon. But there are other factors which are unknown to the researcher or it is impossible to determine their effect on the dependent variable quantitatively in the case under study. We can, therefore, study only a limited number of the independent variables in every study. In this study, also, other factors like economic and political factors, the efficiency of the managers, kind of industry, profit distribution policies, expectation of investors, information management systems and market conditions may affect the dependent variable. On the other hand, the results of the study showed that the companies which use sophisticated techniques have higher ROA. But the results of former studies indicated that most managers used naïve techniques to assess their capital projects. Therefore, considering the results of this study and other studies in this field, emphasis must be put on the application of scientific methods in the evaluation of capital projects, which will lead to the efficiency expected by investors or managers. Consequently, the managers should choose suitable plans for investment to increase the value of the company and the wealth of the shareholders.

- Suggestions:

With regard to the importance of the subject and considering the results of this study, some suggestions can be made to improve the present conditions of the organizations:

1. Before the financial provision of the capital projects of the companies, it should be checked what methods have been used for the plans and how, because this can be important from the viewpoint of paying future financial pledges.
2. Seminars and conferences should be held to train and familiarize decision making managers, especially those with no financial expertise, with sophisticated techniques of capital budgeting.
3. One of the obstacles to the application of assessment methods of capital plans is the inability of management accounting information system in providing useful, adequate, relevant and timely information. So it is suggested that a study be done on the application of management accounting information systems and some procedures be defined to increase the capability of management accounting information system in providing useful and adequate information.

REFERENCES

1. Christy, George A. (1966). *Capital Budgeting – Current Practices and their Efficiency*, Bureau of Business and Economic Research, University of Oregon.

2. Copeland, Thomas E. & J. Fred Weston (1992) *Financial Theory and Corporate Policy*, Reading: Addison-Wesley Publishing Company Inc, Third Edition.

3. Kim, Suk H. (1982). An Empirical Study on the Relationship between Capital Budgeting Practices and Earnings Performance. The Engineering Economist, 27, 3: 185-195.

4. Klammer, Thomas (1973). The Association of Capital Budgeting Techniques with Firm Performance. The Accounting Review, 48: 353-364.

5. Pike, Richard & Bill Neale (1999). *Corporate Finance and Investment*. Barcelona: Precntice Hall Europe. Third Edition.

6. Pinches, George E. (1994) Financial Management, New York: arper Collins College, New York.

7. Azar, Adel & Momeni, Mansoor. 1998, Statistics and its Application in Management, SAMT Publication, Two Volumes. First Eddition, Tehran.

8. Jahankhany, Ali. & Parsaeeyan, Ali. 1999, Financial management. The Organization for Studying and Compiling University Textbooks for Humanities. Vol. 1, Fifth edition, Tehran.

9. Shbahang, Reza. 2006. Financial Management, the Center for Specialized Studies of Accounting and Auditing of the Auditing Organization. Vol. 1, Eighth edition, Tehran.

10. Shbahang, Reza. 2002. Management Accounting, the Center for Specialized Studies of Accounting and Auditing of the Auditing Organization. Seventh edition, Tehran.