#### The Effect of Cost Management Strategy on the Financial Performance of the Public Companies of Tehran Stock Exchange

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**Abstract:** The rate of asset return and growth in sales is considered as an index for measuring the financial performance of companies in supplying their operational efficiency. The main goal of many companies is to access higher rate of asset return. Additionally, managers and analysts of the companies widely rely on the rate of asset return and the rate of the growth-in-sales as a criterion for measuring the performance of the companies. If the companies who adopt cost leadership strategy can be successful in using the least assets to reach their commercial results, then the performance of the company will be promoted [5]. As a survey, this study aims to investigate the selected strategy of the companies and its relationship with their financial performance in a period of 7 years (2005-2011). This research has been conducted on 30 companies out of the top 50 public companies of Tehran Stock Exchange. The results show that applying the cost management strategy has had a direct effect on the financial performance of the companies and has led to the improvement of their performance in short terms.

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### 1. Introduction

During the transition of human civilization to come to the post-industrial society, despite the resistance of the nations, globalization is moving forward and promises to generate great thought for global production and to enter into new arenas with lower costs and higher qualities [8]. The intensification of the global competition in an everchanging environment forces the productiveindustrial companies and organizations to adopt proper reactions and insists on their compatibility against the unstable international environment [2]. Indeed, several factors make many organizations lose their competitive advantages and suffer from organizational decline because they have failed to have a comprehensive understanding of their surrounding environment. These factors are mainly technological developments and exploiting information technology, the diversity of international markets, emergence of new economic powers, wide and transnational mergers, need to attention to the environment, reinforcement of international free trade zones due to the regional contracts, etc. [10]. Now we have to ask how the companies and organization must realize the environment changes and make themselves compatible with the situations of global environment and make the global markets their own potential target. In other words, what competitive strategies do the companies and organizations have to adopt in order to reach to the international markets?

This research investigates the relationship between the selected strategies of these companies with their financial performances. The main question in the literature of the management is to determine the origins of competitive advantages because the competitive advantage makes it possible for such companies to reach a better performance among their competitors and could be able to preserve that performance during the time.

# 2. Objectives and the Importance of the Research

Since the main key of successfulness in investments is to determine the competitive advantage of any company and the stability and durability of such an advantage, thus the results of experimental analysis of such strategic concepts can provide the professionals a useful understanding so that they also can analyze and predict the future of the companies. The current and coming necessary needs of the organization, compatibility and coordination for the durability of the organization, prevention of the waste of resources, and concentration of the needed actions can all be fulfilled through the organizational strategy. The strategy of any organization at different periods of time depends on the definition of the competition and competitiveness and the adopted approaches by that organization. Thus the existence of the strategies helps the organizations preserve their competitive advantage in today's advanced competitive environment and provide more desirable ways to improve their competitive situation. Since the two main factors of technological development and global competition have a significant effect on the

performance of today's organizations, hence if any organization cannot match itself with these two factors, in long term it will inevitably be dropped behind its competitors. Hence it is necessary for the organizations to pay special attention to the cost management in order to increase the profitability of their company and to survive in the competition arena [4]. Since the service parts are growing and developing rapidly in Iranian current economy, the management accounting technics have to be reevaluated considering the information needs of the active departments and to be matched with such needs [3]. The objective of this research is to investigate such an issue through the study of the relationship between the strategic situation of the companies and the durability of their performance to show that the companies who adopt cost management strategy can reach a high financial performance, but they will not be able to preserve such a performance in long term.

### 3. **Problem statement**

During two past decades, in the field of management accounting studies, several researches have focused on the strategic approaches with emphasis on the understanding, measuring, and managing key stimuli of the value generation for the shareholders. Moreover, in order to create more and longer term value for the shareholders, the companies increasingly use the management structure based on the comprehensive and inclusive value. Thus to make the value-based management successful it seems necessary to define and apply the strategies that are the potential factor for creating the value for the shareholders. The primary focus of this research is to create some concepts and variables in order to apply the cost management strategy and then to use such concepts and variables to investigate whether the mentioned strategy can lead to a stable and durable financial performance. According to Porter's theory, any company that adopt and apply the cost management strategy will be stand in a situation where it can behave effectively against the competitive pressures and this shows the successfulness of any company in its relevant industry. However, an important question is that whether such successfulness can be continued during the time? In other words, does the competitive advantage can be continued or its continuity depends on the competitors' ability in imitating and repeating the mentioned competitive situation? The previous studies show that if a competitive advantage can be easily imitated by the competitors, then such an advantage cannot survive during the time. Hence, the companies will have a better performance than their competitors only if they can create durable and stable differentiations.

# 4. **Professional terms and concepts defined**

Cost Management: Cost management system is a sort of planning and control system on the basis of the comprehensive information of the planning and it follows the following goals [3]:

To estimate and determine the final cost of the resources that are to be used for main activities of the economic unit;

To detect and remove those items that don't create added value;

To identify the efficiency and effectiveness of the main activities of the economic unit;

To identify and evaluate new activities that can improve the future performance of the organization.

Management Strategy: The companies that accept and adopt cost management strategy will be able to increase their market share through a lower final price of their products than the products of their competitors [3].

Efficiency: A system in which the input of any unit is lower than its output. It is necessary to continuously improve the operational efficiency in order to reach a higher profitability at different periods of time, although the rapid distribution of the activities makes the competitors able to promptly imitate the management activities and technics rapidly.

# 5. Literature Review

Dess and Davis (1984) and Miller and Segev (1987) have conducted most of their researches on the basis of the perceptual criteria of the strategy concepts. Kothaand Nair (1995), Berman (1999), and Nair & Filler (2003) have conducted their researches on the small samples of limited data [4]. Mintzberg (1987) has distinguished the target strategies and real strategies. Traditionally, strategy is a matter of target and plan, but the real strategies are patterns for the moment of decision making that are used practically [1]. Simons's researches (1987) have focused on the relationship between the management control systems and strategy [4]. Investigating the questionnaires filled by the top managers of 76 companies, he has operationalized the strategy per the discoverers and advocates.

Hambrick (1983) has studied the characteristics of the strategies of successful companies in productive industries and has concluded that the combination of the assets and the way of their optimal usage is a very important factor in the profitability of the companies. Additionally, he founded out that the characteristics of the strategies of successful companies are very similar to the Porter's theory of general strategy. In this research, long and short term effects of the application of cost management strategy on the index of financial performance of the companies have been tested and investigated.

## 6. Hypotheses of the research

H1: The application of cost management strategy has a direct effect of the financial performance of the companies.

H2: The application of cost management strategy will not lead to the durable economic performance over the time.

# Statistical population and sample Statistical population

Statistical population of this research includes some desirable items that have at least one characteristic trait. Characteristic trait is a trait that is common among all elements of the statistical population and is the distinctive feature of the statistical population from other populations [1]. The study population of this research includes all popular companies of Tehran Stock Exchange that have the related information of the model's variables in the 7years interval of 2005 to 2011.

### 7.2. Statistical sample

In this research the companies were selected on the basis of non-contingent method with the condition of having the variables of the model. Moreover, those observations that lacked any relevant variable were deleted from the sample. These variables include total assets, net sale, total number of the employees, and capital expenditure. In order to test any company in the selected sample, it must have the sufficient data for calculating the variables of cost leadership strategy for the selected 7-years interval. Besides, to test the effect of the variables of financial performance on the future outputs of the shares of the company, the related information of the shares output for each of the years was needed. This research has removed the observations that have a benefit before the unexpected items. Thus the final sample includes 200 annual observations of the companies. To do the sampling among the statistical population during the mentioned years, we used the information of 50 top public companies of the stock exchange that their rate of asset returns and rate growth in sales and their model data were available as the companies that have applied the mentioned strategy.

# 8. Data collection method

The needed data for the variables of performance and strategy were extracted from the data files of the library of Tehran Stock Exchange and the Pars Portfolio and TadbirPardaz softwares. Additionally, to limit the analyses to the companies who are sufficiently big, we selected the companies who were among the top 50 companies of the stock exchange. In this research, the annual observations of the active companies of financial and investment services were removed due to the difference of the interpretation of their financial reports. Thus the final sample included 200 annual observations of the companies.

## 9. Data analysis method

In order to extract the needed dependent and independent variables for the test of the model we relied on the archival data of Tehran Stock Exchange [5]. Then the collected data for the 30 selected companies were classified by EXCEL software and the financial ratios were calculated as well.

### 10. Methodology

In this research, the 5-years average of the mentioned variables was studied in order to extract the long term strategic tendencies of the companies. The criterion of the assessment of the financial performance of the companies was the rate of asset return and the rate of growth in sales for three years after extracting the explanative variables of the model. Moreover, in order to study the durability of the financial performance of the companies who have adopted the efficiency strategy, we considered a model in which the periodic regression of each period is used to estimate the parameters. Second step includes averaging the periodic regression to obtain final evaluations for the parameters and t statistic. In this research we have used descriptive statistics in the data analysis of the samples.

# 10.1. Validity test of the research

In this research the arithmetic average of the 5 years of the effective variables in applying the cost management strategy including the ratios of

a. Sales/ capital expenditure of properties, machineries, and equipment

b. Sales/ book value of properties, machineries, and equipment; and

c. Number of employees/ book value of properties, machineries, and equipment

were used by accessing the data files of financial statements and other reports of top 50 public companies of Tehran Stock Exchange to obtain their long term strategic tendencies. Considering the accessibility to the data, collectively the data of 30 companies was extracted for the mentioned 5 years. Accordingly, 600 variables were extracted for the mentioned companies and these amounts of the variables were reduced to 200 variables by 5-years averaging. Then the researcher used the normality test of deviations to study the validity of the variables that are being added to the dimensions of the expected strategy. The results confirmed the suitability of the measuring model including the measures for validity of the strategy test. Normality of the deviations (test remains) show that these deviations follow a relatively normal distribution. Thus the test variables have a suitable validity for testing the model.

## 10.2. Reliability test of the research

In this research we have used the data of an 8years period of top public companies of Tehran Stock Exchange. Since we have not used sampling method in selecting the data and we have relied on the accessible data of 30 public companies out of the 50 public companies of the stock exchange, and since more than half of the sample companies have been studied in the selected sample, thus it is possible to generalize the results of the research to other samples and populations. In other words, the research has been reliable.

# 11. Introduced criteria for performance evaluation

Relying on the vision that the organizations have multiple goals, Woo and Willard (1986) and Venkatramanand Ramanujam claimed that the performance is a multi-dimensional concept. Such a claim offers that the higher profitability can be just one dimension of the performance, while some companies attempt to reach a higher rate of sales. Hambrick, et al. (1982) and Dess and Miller (1993) used the stability of the performance as a predictive criterion for the financial performance of the those companies that are not just looking for higher outputs but are going to have stable resources for creating the output. In order to reach the multiple goals of the organizations, we first analyzed the data considering the rate of growth in sales as the criterion for the performance of the company and then extended it to come to the following model:

Equation 3:

Sales Growth I,t+j = a 0 + a 1 Efficiency I,t + s I,t 11.1. Variables: Access to the rate of asset return is the main objective of many countries. In this research, we have used the rate of asset return as the index for measuring the performance of the company. In order to test the hypotheses of the research we have presented an experimental model that explains the relationship between the mentioned strategies and the financial performance of the companies:

Equation 1:

ROA i,t= a 0 + a 1Efficiency I,t+ r I,t

Thus, the above equation tests the effects of the application of cost management strategy on the performance of the company. The variables of this equation are as follow:

ROAi,t: (net profit/ total assets) the return of the assets of company i in year t.

Efficiency i,t: refers to the strategy that the company i adopts in the time period t. According to the hypotheses of the research, it is expected that although the cost management strategy affects the performance of the company, but its durability in long term is low. This research has assessed the following equation to test the mentioned strategy on the future performance of the company that includes future ROA as the dependent variable for controlling the performance.

Equation 2:

ROA I,t+j= a0 + a1 ROA I,t +a2 Efficiency I,t + r I,t

Equation 2 tests the scale of the ability of the companies in preserving the ROA performance in future on the basis of the applied strategy in the time period t. In this equation, ROA i, t+j has been the asset return of the company i in the time periods t+1, t+2, and t+3 respectively. The coefficient ROA i, t tests the stability of the profitability from the period t to the period t+j. The coefficients of the variables of strategy has measured the ability of the company to reach a higher performance in the time periods t+1, t+2, and t+3 as well.

Table 1. Linear relationship between the variables of cost strategy and return of assets in 2008

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.602	0.363	0.289	13.2556893

A Predictors: (constant), m3, m1, m2 P Dependent Variable: POA 83

B Dependent Variable: ROA83

The application of cost management strategy will gradually lose its management effects in long term. Thus it is expected that the time has an inverse relationship with the correlation between dependant and independent variables. In other words, the scale of the linear correlation will decrease by passing the time. As shown in tables 2 and 3, the linear correlation coefficient between the independent and dependent variables for the years 2009 and 2010 are 57% and 46% respectively.

	Table 2. Linear	relationship between	the variables of cost strategy a	and return of assets in 2009
dal	D	D Cauara	A directed D Square	Std Error of the Estimate

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate		
1	0.575	0.331	0.253	9.911945		
A Predictors: (constant), m3, m1, m2						

B Dependent Variable: ROA84

B Dependent Variable. ROA84

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Moreover, the reduction of the scale of ROA determination by the variables of the strategy (33% for the year 2009 and 21% for the year 2010) and the reduction of adjusted determination coefficient (0.25

and 0.12) confirm the claim. The reducing procedure of the amount of linear correlation with time has confirmed the inefficiency of this strategy in long term.

Table 3. Linear relationship be	tween the variables of cost strategy and return of assets in 2008
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	Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	
	1	0.466	0.217	0.127	9.9068521	
A Dradictory (constant) m2 m1 m2						

A Predictors: (constant), m3, m1, m2

B Dependent Variable: ROA83

# 11.2. Testing the relationship between cost management strategy and the rate of return of the assets

In order to study the relationship between the variable of the return of assets (ROA) of the company and the variables of cost management strategy, and in order to study the explanation of the outputs by the variables of the strategy we have used linear regression test [6, 7 & 8]. The coefficient correlation between the three variables of cost leadership strategy and the rate of the return of assets is 60% for the year 2008 (R=60%). Moreover, 36% of the changes in the ROA variable are explained by the variables of cost management strategy and the adjusted determination coefficient 1 indicates 28% of the explanation if the changes of assets return by the variables of the strategies. As shown in tables 1, 2, and 3, the relationship between the dependent variables of the model (variables of application of cost management strategy)and the independent variable of the model (ratio of return of assets) for each of 2008, 2009, and 2010 has been a positive and significant relationship. Thus the first hypothesis of the research is confirmed and we realize that the application of cost management strategy directly affects the financial performance of the public companies of Tehran Stock Exchange. Moreover, the results of the above tables show that the correlation coefficients of the dependent and independent strategies are being reduced gradually with the time passing. Thus the second hypothesis of the research is confirmed as well and we realize that the application of the cost leadership strategy will not lead to a durable economic performance in long term.

According to the logic of equation 2 (ROA i,t+j = a0 + a1 ROA i, t + a 2 Efficiency i, t + r i,t) the output (returns) of the year 2009 was added to the independent variables of the model as a separate variable, and the dependent variable is the output of the year 2009. Table 4 shows that the coefficient correlation between the dependent and independent variables will reach to 89% by adding the output of the year 2008. Additionally, 72% of the changes in the return of assets of the year 2008. The increase of the scale of explaining the changes due to the normality of the deviations, confirms the testing abilities of the model.

Table 4. The effect of the variables of cost management strategy and output effects of the year 2008 on the outputs of the year 2009

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.853	0.727	0.684	6.3072444

A Predictors: (constant), m3, m1, m2

B Dependent Variable: ROA84

As shown in table 5, by doing the similar test for the year 2010 (adding the asset return of the year 2008 to the independent variables) the linear dependency of the variables reaches to 75% and the explanation of the dependent variables by the independent variables reach to 56%. Accordingly, adding ROA t as a control variable whose coefficient assesses the stability of the profitability from the time period t to the time period t+j will improve the results of the model and will

increase the explanatory power of the model.

Table 5. The effect of the variables of cost management strategy and output effects of the year 2008 on the ou	tputs
of the year 2010	

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.794	0.561	0.491	7.5664296
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A Predictors: (constant), m3, m1, m2

B Dependent Variable: ROA85

# 11.2. Testing the relationship between cost management strategy and the rate of growth in sales

In order to test the effects of the variables of cost management strategies on other measuring criteria of the performance, we tested the index of growth in sales for the years 2008, 2009, and 2010. Sales growth is a criterion that can indicate the increase and improvement of the financial performance of the company. Thus in long term, it is expected that the application of cost management strategies have a positive and reducing relationship with the sales growth of the company.

Equation 3: Sales Growth I,t+j=a0 + a1Efficiency I, t+S I,t

where "Sales Growth I,t+j" indicates the percent of the sales growth for each of the years 2008, 2009, and 2010.

Table 6. Linear relationship between the variables of cost management strategy and sales growth in 2008
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Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.556	0.309	0.198	0.3121380

A Predictors: (constant), m3, m1, m2

As mentioned before, the application of the cost management strategy will gradually lose its management effects in long term. Thus we expected that through the time, the correlation between dependent and independent variables has an inverse relationship, i.e. the scale of the linear correlation reduces over the time. As shown in tables 7 and 8, the linear correlation coefficient has reached to 41% for the year 2009 and to 37% for the year 2010. Moreover, the reduction of the scale of sales growth determination by the variables of the strategy (17% for the year 2009 and 12% for the year 2010) and the reduction of adjusted determination coefficient (0.04 and 0.01) confirm the claim. The reducing procedure of the amount of linear correlation with time has confirmed the inefficiency of this strategy in long term.

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate		
1	0.419	0.176	0.044	0.2240794		
A Predictors: (constant) m3 m1 m2						

A Predictors: (constant), m3, m1, m2

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.372	0.127	0.019	0.1725508

A Predictors: (constant), m3, m1, m2

As shown in tables 6, 7, and 8, the relationship between the dependent variables of the model (variables of application of cost management strategy) and the independent variable of the model (growth in sales) for each of 2008, 2009, and 2010 has been a positive and significant relationship. Thus the first hypothesis of the research is confirmed and we realize that the application of cost management strategy directly affects the financial performance of the public companies of Tehran Stock Exchange. Moreover, the results of the above tables show that the correlation coefficients of the dependent and independent strategies are being reduced gradually with the time passing. Thus the second hypothesis of the research is confirmed as well and we realize that the application of the cost leadership strategy will not lead to a durable economic performance in long term.

### 12. Results of the research

Correlation efficient between the three variables of the cost leadership strategy and the scale of the asset return for the year 2008 has been equal to 60%

(R=60%). Moreover, 32% of the changes of ROA variable are explained by the variables of the cost management strategy, and adjusted R square 1 indicates 29% of the changes in the asset return by the variables of the strategy. As the results show, the linear correlation coefficient between the independent and dependent variables for the years 2009 and 2010 are 57% and 47% respectively. The reducing procedure of the amount of linear correlation with time has confirmed the inefficiency of this strategy in long term. The relationship between the dependent variables of the model (variables of application of cost management strategy) and the independent variable of the model (ratio of return of assets) for each of the years 2008, 2009, and 2010 has been a positive and significant relationship. Thus the first hypothesis of the research is confirmed and we realize that the application of cost management strategy directly affects the financial performance of the public companies of Tehran Stock Exchange. According to the Equation 2, the output of the year 2008 was added to the independent variables of the model as a separate variable and the independent variable, will be the output of the year 2009. According to the obtained results (Table 4) the coefficient correlation between the dependent and independent variables will reach to 89% by adding the output of the year 2008. Additionally, 72% of the changes in the return of assets of the year 2008 are explained by the variables of the cost management strategy and the return of assets of the year 2008. The increase of the scale of explaining the changes due to the normality of the deviations, confirms the testing abilities of the model. By doing the similar test for the year 2010 (adding the asset return of the year 2008 to the independent variables) the linear dependency of the variables reaches to 75% and the explanation of the dependent variables by the independent variables reach to 56% (Table 5). Accordingly, adding ROA as a control variable whose coefficient assesses the stability of the profitability from the time period t to the time period t+j will improve the results of the model and will increase the explanatory power of the model.

As shown in tables 6, 7, and 8, the relationship between the dependent variables of the model (variables of application of cost management strategy) and the independent variable of the model (growth in sales) for each of 2008, 2009, and 2010 has been a positive and significant relationship. Thus the first hypothesis of the research is confirmed and we realize that the application of cost management strategy directly affects the financial performance of the public companies of Tehran Stock Exchange. The results of the regression analysis test confirm the hypotheses of the research. This research used deviation normality test to investigate the probable inconsistencies in the assessments. The results show that there is no inconsistency in the regression analysis, while the above-mentioned results indicate that the cost management strategy has a positive and significant effect on the performance but in long term, the effects of such a strategy on the financial performance of the companies will not be durable.

Tables 5 and 6 showed the durability of the financial performance of the cost management strategy and the stability of the profitability. These coefficients was obtained by the Equation 2 to measure the effects of such strategies on the performance of the company in time periods t+1, t+2, and t+3. As the researchers expected, the assessed coefficient for ROA i,t that measured the profit flow was positive and significant in all models.

Generally these results are compatible with the hypotheses H1 and H2 of the research because the two hypotheses claim that the cost management strategy has a positive effect on the current and future performance of the companies. Regarding the future performance of the companies, these hypotheses express that the cost management strategy will gradually lose its effects on the future performance of the company, and its application is mainly effective in short term. Such a fact is compatible with the logical assumption that the efficiency strategy has a positive effect on the current performance of the company but such an effect will be lost in future terms. Moreover, the above results show that the correlation coefficient between the dependent and independent strategies has been reduced gradually with the passing of the time. Thus the second hypothesis of the research is confirmed and we realize that the application of the cost leadership strategy will not lead to a durable economic performance in long term.

Based on the results of the first hypothesis test (linear regression test) we can claim that according to the indexes of the cost management strategy, the application of this strategy has had a direct effect on the financial performance of the companies and it will lead to the improvement of their performance.

The results of the second hypothesis test show that although the application of the mentioned strategy leads to the improvement of the performance of the companies, but it will lose its advantage in long term because the competitor companies will imitate the applied strategies of the company.

Thus, considering the global competition environment of today whose main feature is its ever changing nature, the organizations can apply the cost management strategy to have a suitable flexibility against the unsure and unstable international environment subsequently improve their performance and enjoy its advantages; but they have to note that the results of the application of such a strategy is not durable and it is just applicable in short term. Hence the organizations can benefit from the achievements of the application of cost management strategy as a powerful tool to gain the competitive advantage in short term.

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