Advances in Mathematical Finance & Applications, 6(1), (2021), 29-42
DOI: 10.22034/amfa.2020.1867187.1215

Published by IA University of Arak, Iran
Homepage: www.amfa.iau-arak.ac.ir

The Power Indexes of the CEO and the Performance of the Company Under Pressure Based on Product Market Competition

Majid Aliabadi, Fatemeh Sarraf *, Roya Darabi
Faculty of Economics and Accounting, Islamic Azad University Tehran South Branch

ARTICLE INFO

Article history:
Received 07 July 2019
Accepted 04 March 2020

Keywords:
CEO power indicators
Pressured companies
Product market competition

ABSTRACT

The purpose of this study was to "Identify and explain the relationship between the power indicators of the CEO and the performance of the company under pressure based on the product market competitiveness in the companies listed in the Tehran Stock Exchange". According to this research, the 10-year period of companies listed in the Tehran Stock Exchange was investigated in 2007-2016. The data of 135 companies were analyzed using regression test using SPSS 20 and Eviews 7. The results show that the efficiency of management & integrity of management Is effective on the performance of the company in the companies under pressure on the basis of product market competition, but the effect of management conservatism was not confirmed.

1 Introduction

The objective of any entity is to increase shareholder wealth by increasing the value of the company, and all the activities of the company are directed toward that goal. Investors evaluate the performance of a company to decide whether to invest in a company, sell shares, or withdraw its capital from the company or hold stocks. To achieve this, managers' rewards are often associated with firm performance. In the late 1980s and early 1990s, most large international corporations allowed managers to exercise their right to buy shares of the company at a basic cost to establish a relationship between the rights of their senior executives and if their performance resulted in as the company grew, managers could share the same profits as shareholders. For over a decade, this method was popular because the securities market flourished for several years and brought great profits to managers and investors, but after the collapse of the stock markets in 2000, large companies came to the conclusion. This system is not always desirable. In general, company executives have two basic tasks: overseeing other employees' core activities and providing strategic suggestions [1-4]. However, high performance in one area may lead to success in other areas. A review of the supervisory role of managers by Fali et al. [5], showed that in firms with a stronger supervisor, there is a greater correlation between change in CEO and its performance. In addition, the CEOs of these companies received the lowest remuneration and the lowest earnings management. However, the strategic performance of these companies' executives is relatively weak. Two types of managers may be appointed by shareholders, one being paid managers and the other being non-paid managers. Payroll managers appointed by shareholders often provide strategic management advice and either participate in consulting or are responsible for managing the company. Such

* Corresponding author. Tel.:09122182747
E-mail address: f_sarraf@azad.ac.ir

managers are not only independent, but are also more susceptible to influence by other managers, making it difficult for them to perform the tasks and tasks required by the company's shareholders. In contrast, non-remunerated directors appointed by shareholders are those who receive remuneration directly from shareholders and work to enhance their interests by participating in governance and supervising executive conduct. Such managers are less influenced by other managers of the company and therefore more independent [6]. In short, when executives appointed by shareholders receive remuneration from the corporation, they gain greater influence over the constraints when the corporation has executive power and decision-making. So, they share the interests and priorities of company executives. These executives may pursue shareholder interests to further private equity, which ultimately increases the payoff gap of the company. In contrast, when directors appointed by shareholders receive remuneration from shareholders, they have no direct relationship with managers and are more likely to seek shareholder benefits by reinforcing their executive supervisory behavior, which ultimately reduces company pay costs From a management science perspective, agency theory is the contractual relationship between the members of a company from the management perspective of the owners (shareholders) and the representatives, namely the managers of the company [7]. The owner is the person who delegates responsibility for the decision making and running the company, both parties think rationally and pursue their own interests, but each has different ideas, beliefs and information. The powers, duties, and responsibilities of the owner and agent are specified in a bilateral agreement, the employment contract. From the science point of view, managing managers' remuneration and pay is a part of their performance. Owners, in their contract with the manager or managers, entrust the company with the management of the company, while retaining the right of accountability regarding the managers' performance. Management's commitment is to strive to optimize corporate governance for greater productivity, and shareholders' commitment to compensate managers for the payment of salaries and benefits has been agreed. The reward criterion for the manager is part of the outcome of his work, both the owner and the agent being risky and desirable [8-9]. The agent's personal interests affect his performance. Therefore, in management science, the agency model can be searched for in an employment contract. This contract includes a reward for positive work. It is important that the agent, during his management of the company, take steps to increase the capital of the company and the desirability of the shareholders and what the shareholder is pursuing. Managers' remuneration is based on earnings from management activity. Corporate governance has focused on management as well as the principle of accountability and the remuneration of managers. Because the leadership system must be able to change the circumstances of a company and design appropriate conditions for how it behaves and behaves. Many corporate governance regulations have focused on rewarding and encouraging managers to increase productivity and reduce the agency crisis through the remuneration system. The Corporate Governance System of the Australian Stock Exchange developed the Corporate Governance System in 2002, one of the most important management aspects of which is the creation of a remuneration committee. According to agency theory, organization is a set of contracts. The existence of a business unit is based on its contracts. These contracts can be written and written (such as managers' remuneration contracts, borrowing contracts, productivity remuneration contracts, etc.) or unwritten (such as unpublished working methods, shareholder remuneration plans, etc.). A contract or remuneration scheme between major shareholders and company executives is one of the most important [10]. Corporate finance strategy is one of the most important issues for financial and accounting scientists. An important goal of financing is investing in companies for greater profitability. There are various ways of financing, including domestic and foreign financing or a combination of these two types. Due to the constraints of financial resources, especially

in the field of world trade and tightening competition, business managers are under increasing pressure to reduce operating costs and cost. They choose the least costly type of capital structure for doing business activities in order to increase the value of the firm, timely pay off debt, continue operating and be more present in the domestic and overseas markets, usually by various groups such as shareholders, consumers and others. Beneficiaries reach out to enterprise managers to make donations the aforementioned strategies managers, favorable financing cost for the economic development activities of businesses, increase profits and shareholder wealth maximization, is. So, what are the indicators of CEO power that influence firms' performance based on product market competition?

2 Theoretical Foundations and Research Background

2.1 Theoretical Foundations

The competitiveness of the product market means that different companies are in competition with the production and sale of goods, and their goods are not superior to the other, because otherwise, the market tends to become monopolized or monopolized. In other words, competitiveness means that the company has not been able to adopt a production method that produces better-quality goods or sells its products at a lower price than other competitors, and thus takes the market for sale. Therefore, the competitiveness of the product market in the direction of the image of the exclusivity of the product market is raised. A company that has been able to produce better-quality goods or products with lower prices by optimizing production methods has come to a near monopoly. It is expected that the competitiveness of the market for the following reasons has affected the Agency costs:

1. In a competitive market, the number of companies active in the market is high, and so companies must be aware of each other's actions in order to maintain themselves in the market. This will lead to a part of the regulatory process by the companies themselves operating in the market. In fact, companies act as a monitoring mechanism for each other.

2. The existence of market competition will increase transparency and reduce information asymmetry, because similar and comparable information can be obtained from other active.

players in the market and used to verify the accuracy of the claims and information provided by the company's management.

3-Managers of companies which are active in a competitive market place their business position more at risk than the other, because shareholders and stakeholders of such companies can lessen the mistakes and inefficiencies of managers. Therefore, managers are trying to operate more efficiently and effectively, which leads to a reduction in agency costs.

From the point of view of management, a financial organization or a corporation is a set of contracts written or non- written between the owners, the agents of production, and customers. In other words, the entity has based on its contracts. These contracts will evaluate the wages of each party in the company and the benchmark of the parties' performance, and ultimately discuss the settlement and payment instructions. In other words, the company is a network of contracts, and the parties to the contract are shareholders, employees, creditors, lenders and consumers, each one linked to each other, and management science regulates these contractual relationships. The corporate governance system has focused on management issues, as well as on the principle of accountability, salaries and rewards of managers. Because the management system must be able to transform the circumstances of a company and design appropriate conditions for behaviors. In many corporate governance codes, the managerial dimension has been focused on rewarding and encouraging managers, the degree of productivity, and the reduction

of representation crisis through the reward system. The goal of corporate executives is to create value for landlords according to the new financial paradigms. Value and value creating for owners and shareholders are aimed at gaining and maximizing their wealth. In this regard, performance evaluation is one of the key issues in the management process and value creation. Logical evaluation of performance depends on the recognition and application of financial and non-financial indices [19]. Managers of enterprises in the current era are facing increasing pressure due to limited financial resources, especially in the field of world trade and competition, to reduce operating expenses and cost and choose the least costly capital structure to conduct firm activities to increase firm value, timely payment of debts, continued activity and presence on domestic and foreign markets. These pressures often come from corporate groups, such as shareholders, consumers, and other stakeholders. In order to achieve the above objectives, managers' strategies are to provide optimal financial resources with the lowest cost for economic growth and development of company activities, increase profits, and optimizing shareholders' wealth. Therefore, the main aim of this research is to determine which indicators of power of the CEO influence the performance of pressured companies Based on product market competition.

2.2 Research History

Safari Gerayli et al. [18] studied "CEO power and firm performance under pressure". Focus on power is based on quick decision-making, checking the performance of companies with powerful executives when the industry is in bad shape and focused on stagnation reflects an external shock to the company, companies active in the competitive industries, and companies. Active in specific industries with more management powers, relatively more. Rashidi Baqhi [12], in review the board's accountability, financial disclosure and internal control, shareholder rights, CEO and board fees, external control, and value of the company showed a meaningful positive relationship between all features. Radenovic and Hasani [13], examined the relationship between product competition and agency conflict. They showed that competition in the product market will reduce the cost of the agency. Companies operating in low-competitive industries are less productive than companies in high-tech industries. They also showed that market competition is a substitute for other corporate governance mechanisms, and companies in less competitive industries are likely to utilize a stronger corporate governance mechanism to balance management benefits with other stakeholders. Schmid et al. [14], found that firms with poor corporate governance operating in non-competitive industries have low returns, high operating performance, and low company value. They also showed that companies with poor corporate governance lead to a decrease in labour productivity and higher consumption costs in non-competitive industries. Serguieva and Hunter [15], investigated the relationship between capital structure and market production competition, i.e., the structure of Chinese company market has examined. They use a non-balanced panel model and utilizing the control variables of profitability, company size, asset value, growth, assets, non-debt tax shield, internal resource capability and current ratio, to analyze the relationship between capital structure and market structure Static and dynamic. The research findings indicate that there is a contingent relationship between capital structure and market structure. They use a non-balanced panel model and utilizing the control variables of profitability, company size, asset collateral value, growth, asset unity, non-debt tax shield, ability to create internal resources and current ratio, to analyze the relationship between capital structure and market structure in a static and dynamic way. The research findings show that there is a contingent relationship between capital structure and market structure. Syau [16], examined the relationship between product market competition and corporate governance. They found

that companies in a competitive or weak market power industry tend to have a weak corporate governance structure. They also showed that the quality of corporate governance only has a significant effect on performance when competition in the product market is weak. Finally, they argued that the competition of a controlling force on management, in the product market, and the cost of the outcome of the fear of dissolution. Safari et al. [17], recent accounting and management literature shows that demographic characteristics of top management and corporate performance are related. Accordingly, using a two-stage least squares regression model (2SLS), this study examines the relationship between some management demographic characteristics including CEO tenure, gender and level of education with earnings quality and auditor choice. Sample includes the 420 firm-year observations from companies listed on the Tehran Stock Exchange during the years 2013 to 2017 and research hypothesis was tested using multivariate regression models. The results show a significant and positive association between manager's education level and higher auditor quality choice. In addition, we find that firms with female directors in the composition of the board of directors and with higher education levels, have higher earnings quality. The current study is almost the first study which has been conducted in Iran, so the findings of the study not only extend the extant theoretical literature in developing countries including emerging capital market of Iran, but also help investors, capital market regulators and accounting standard setters to make in-formed decisions.

Taherinia [20] in a study investigated the relationship between corporate governance and firm performance based on fuzzy regression. Today, there is no doubt about the importance and position of corporate governance for corporate success. In this study, the relationship between corporate governance and firm performance based on fuzzy regression among 151 companies was investigated. In this study, linear regression with fuzzy coefficients was used to fit the research model and error reduction, also considering the fuzzy output values that are ambiguous and symmetric triangular fuzzy numbers using gravity center or COA method. They have output. Based on the results of this study, the hypothesis of the relationship between non-executive board members and institutional owners with firm performance was confirmed. Also, there was no significant relationship between the dual role of CEO and firm performance. Therefore, according to the results of this study, special attention is paid to corporate governance mechanisms in order to improve company performance. Marrakchi Chtourou et al. [3] examined "the impact of customer focus on corporate financial performance." The impact of customer focus on company performance can be viewed from two perspectives: the first view focuses on customer focus as a factor in the pressure on the seller, and the second view is a factor in increasing the coordination of production, inventory management and information sharing in the supply chain. Increasing customer focus reduces sales costs and improves corporate financial performance. This research is designed to investigate the effect of customer focus on improving corporate financial performance. For this purpose, multivariate regression models are estimated for hybrid data. The data were collected from 79 companies during the period of 2011-2002. The findings show that customer focus has a positive correlation with financial performance, which is statistically significant. Therefore, increasing customer focus improves corporate financial performance. Companies with high customer focus also experience more optimal inventory management. The findings of this study support the importance of the presence of major customers in the market.

Garcıa and Sanchez [6] have found that the conservative indices have a significant correlation with the performance of firms, and have a significant role in the separation of firms with weak and strong performance, while the corporate governance variables do not have a significant effect on the segregation of firms with high or weak performance and can not to be used to improve the accuracy of the company's

performance prediction model. Machuga and Teitel [9] studied the effects of product market competition on the earnings management of listed companies in Tehran Stock Exchange. For this purpose, adjusted Herfindahl-Hirschman, Lerner and Lerner indices have been used as criteria for measuring competition in the product market. Optional accruals have also been used as a measure of earnings management. The statistical population of this study consists of 67 companies listed in Tehran Stock Exchange which were surveyed during 2004 to 2011. Multivariate linear regression statistical analysis was used to test the research hypotheses. The results of testing the research hypotheses show that there is a significant inverse relationship between Herfindahl-Hirschman, Lerner and Lerner indices with corporate earnings management. Amirhosseini and Hadipour [1] studied the companies' effectiveness and performance relationship with stock market liquidity in Tehran Stock Exchange during 2010-2015. Simultaneously, in the study, the three indicators: return on assets, return on investment and Tobin's Q ratio were applied as a measure of the performance and bid-ask spread as a measure of liquidity, bid-ask spread to the stock market. This research has a practical purpose and descriptive correlation in research nature and also post-event research. The under-study population comprises all companies accepted in Tehran Stock Exchange during the intended period, 198 companies selected with systematic elimination sampling to be studied and analyzed. The results show a positive and significant association between companies' performance and Stock market liquidity. Ravanshad et al. [11] investigated the relationship between managerial ability and firm performance. First, they introduced a new two-stage DEA model with a fuzzy multi-objective programming approach for evaluating the performance of companies listed on the Tehran Stock Exchange. In this regard, the stable operation of companies, into two sub-process, have divided, which includes the profit-ability (first phase) and the value, creativity (the second phase), that is, the outputs of the first stage are inputs for the second stage, which can be used to identify the status of the company's operations and potential for future growth. Second, in order to measure the ability of managers, we use the model provided by Demerging. Finally, the relationship between managerial ability and firm performance are also investigated by means of the truncated-regression model. The results show that there is appositive relationship between the ability of man agement and firm performance. It means that managerial ability to be significantly related to the performance of the company. In this sense, the performance of the company improves by increasing managerial ability to better use resources and consequently increase overall efficiency

3 Proposed Methodology and Variables

Research hypotheses include 1 main hypothesis and 3 sub hypotheses:

The main hypothesis: The power indicators of the CEO influence on the company's performance in pressured firms on the basis of product market competition.

Research sub-hypotheses

To study the main hypothesis of the research, 3 sub-hypotheses are examined as follows:

Sub-hypothesis 1: Management conservatism affects the performance of companies in stressed companies based on product market competition.

Sub-hypothesis 2: Management effectiveness affects the company's performance in pressured firms based on product market competition.

Sub-hypothesis 3: Integrity management affects the performance of companies in pressured firms based on product market competition.

3.1 Research Variables

This research contains four kinds of variables.

Company Performance:

In order to measure the company's performance from the company's value index and the M / B ratio, according to studies such as Kaplan [7], the following relation has been used:

M / B = market value / company's book value of the company (1)

ΔM / B = M / Bt-M / Bt-1 (2)

Δ M / B: changes in the company's market value / market value (3)

M / Bt: market value of the current year/ Company value / company's book value (4)

M / Bt-1: market value of the company last year/ company's book value (5)

CEO Power Indicators:

Management conservatism: A cautious management response to existing ambiguities. This variable is measured as follows:

$$= (-1/3) \times \sum_{i=1}^{2} \left(OP_{t-j} + DEPR_{t-j} - CFO_{t-j} \right) / TA_{t-j}] MACO_{i,t} \quad (1)$$

here in:

OP: Operating profit

DEPR: Cost of depreciation of invisible and invisible fixed assets

CFO: Cash Flow from Operations

TA: Total assets.

Management Effectiveness:

Ability to manage limited resources to meet company goals. This variable is measured using data envelopment analysis as follows:

$$= [\mathrm{SALE}_{i,t} / (\mathrm{COGS}_{i,t} + \mathrm{SG\&}A_{i,t} + \mathrm{DEPR}_{i,t} + R\&\mathrm{D}_{i,t}] MAEF_{i,t} \quad (2)$$

where in:

COGS: The cost of sales
SG & A: Public, Office, and Sales Expense
DEPR: Cost of depreciation of invisible and invisible fixed assets
R & D: is the cost of research and development.

Integrity Management:

True presentation of information in financial reports. This variable is measured using the abnormal accruals of financial statements and through the modified Jones index as follows

$$= \mathrm{B}_1 (1/\mathrm{A}_{i\,t-1}) + \mathrm{B}_2 (\Delta\mathrm{REV}_{i,t} - \Delta\mathrm{REC}_{i,t}) + \mathrm{B}_3 PPE_i + \mathrm{B}_3 R\&\mathrm{D}_{i,t} \varepsilon_{i,t}] TA_{i,t} \quad (3)$$

where in:
TA: Total Accruals
A: total assets
∆ REV: Change in sales revenue
∆ REC: Changes in Commercial Receivables
PPE: Gross fixed assets
ε : Estimated error

$$TA_{i,t} = \mathrm{OP}_{i,t} - CFO_{i,t}$$

where in:
OP: Operating profit
CFO: is the cash flow generated by the operation.
Abnormal accruals are defined as the absolute value of accruals regression models and are defined as a reciprocal indicator of management integrity in financial reporting.

Control Variables is the Size of Company and in this study, the size of a company is calculated as the natural logarithm of total assets
Size i,t = Ln(total asseti,t
SIZEi, t: size of company i in year t
Ln (asset i, t): logarithm of the company's assets in the year.
3-2-2Financial leverage:
Levi, t = total debt I, t / total assets I, t
Levi, t: Corporate leverage i in year t
total debt i, t: total debt of company i in year t
total asset i, t: total assets of i company in year t.
Modifier Variable is the Product Market Competition and to calculate this variable, the Lerner index is used in accordance with research by Machuga and Teitel [9]

LI = (Sale - Cogs - SG & A) / Sale
where in:
LI: represents the Lerner index

Cogs: represents the cost of the sold product

Sale: represents sales

SG & A represents general, administrative and sales costs.

Under the pressure of the company:

According to Machuga and Teitel [9], a firm is under pressure that the company's sales would decrease by “5%” this year compared to the previous year's sales, and will consider the change in domestic and foreign financing that increases Take it

The net change in domestic financing (∆ IFin) :,

Funds from Operations + Funds from Sale of Assets

- Net change in foreign financing (∆ XFin) (same source)

Net change in the capital provided from external sources + net change in debt created for financing.

In this formula:

The net change in the capital provided from the source of external resources is equal to:

Bringing Cash Owners - Paid Profit

Net change in debt created to finance is equal to

Net increase in cash from the debt position of the financing activities section - Payable taxes.

4 Analysis and Findings

The purpose of the present study is to apply because it can be used in the decision-making process. The purpose of applied research is the development of applied knowledge in a particular context. The present study is based on the classification of research based on the method and nature of correlation research, because the goal is to determine the relationship between variables.

4.1 Study Population and Statistical Sample

The statistical population of the study includes all companies admitted to the stock exchange for the period of 2007 to 2016, and the following conditions are considered in order to determine the statistical society of the research:
It is not part of banks, financial institutions, investment, holding and leasing. Because of the nature of their particular activity, the relationship between the components studied in this research is different for such institutions and cannot be generalized to others. The company has been admitted to the Stock Exchange by the end of 2006 and has not been removed from the Stock Exchange during the years 2007 to 2016. For compliance, the fiscal year of the company will end on March 29th each year.
The company will not change the fiscal year over the years under review. At least two consecutive years in the research period. There are no more than three months of trading interruptions during each year on the exchange. Corporate info available. As a result of applying the conditions in a systematic knock-out sampling, 135 companies were selected from the statistical community to conduct the tests.

4.2 Method of Data Analysis

To analyze the data of this research in the first stage, the data are analyzed descriptively. This section contains statistics on the centralization and dispersion of data. To test the hypotheses, the means comparison test has been used. All tests were performed by software such as MATLAB, SPSS 20, EViews 7 and Lingo. The main central indicator is the mean, which represents the equilibrium point and the distribution center, and is a good indicator of the centrality of the data. In general, the scattering parameters are a criterion for determining the degree of dispersion from one another or their dispersion rate relative to the average. The most important parameter of dispersion is standard deviation.
The rate of asymmetry of the curve is called skewness. If the skewness coefficient is zero, the society is completely symmetric, and if this is a positive coefficient, then the skewness is right and, if it is negative, the skewness to the left has a skewness. It is true that the distribution of the chute is to the right. Scattering parameter, the amount of stretch or bursts of the curve is called protrusion or stretching relative to the standard normal curve. If the stretch is about zero, that is, the tensile curve is normal and normal, if this value is positive, the curve is prominent and if it is negative, the curve is broad. The last level also shows the observations. Descriptive Analysis of Research Variables can be seen in Table 1.

Table 1: Results of descriptive analysis of research variables in the total level of observations

Appearance					
Integrity of Management	Effectiveness of Management	Conservatism of Management	product market competition	Financial per-formance	variable
TA	MAEF	MACO	LI	M/B	Abbreviation
2.8809	3.7667	-0.1732	-1.0665	1.08702	mean
61481.	1.2258	0.0102	0.2818	0.76208	Middle
9.0526	78.0455	0.6318	1	5.3553	maximum
46024.	0	-16.4005	-49.5065	0	minimum
9.5937	8.1792	1.2902	4.7151	0.9486	Standard deviation
6.4510	4.6403	-9.2251	-5.4712	1.5059	Skewed to
48.1999	30.2431	97.7440	41.7989	5.3955	Elongation
1350	1350	1350	1350	1350	observations

Results of testing hypotheses:

The main hypothesis: The power indicators of the CEO influence on the company's performance in pressured firms on the basis of product market competition.

The first hypothesis is statistically formulated as follows:

H0: The CEO's power indices do not affect the company's performance in pressured firms based on product market competition.

H1: Managing power indicators impact on firm performance in pressured firms based on product market competition.

Table 2: Descriptive statistics table

MTB i,t+1 = α0 + α1 MACO i,t + α2 MAEF i,t+ α3 TA i,t +α4 Lev i,t+ α5 Size i,t + εit				
Variables	Estimated coefficient	Standard error	T test statistics	Probability test t
LEV	-0.067895	0.026858	-2.527937	0.0119
MACO	0.012222	0.037134	0.329133	0.7422
MAEF	0.015290	0.006232	2.453399	0.0146
SIZE	0.006395	0.035936	0.177951	0.8589
TA	-9.11E-09	5.00E-09	-1.823240	0.0690
R2 .0.073901		F statistics 3.519972		Durbin-Watson 1,534,432
Adjusted R2 0.052906		F probability 0.000327		

The probability of F statistics, which is less than 5%, indicates that the whole model is statistically significant, And according to the hypothesis because variables of integrity management, conservatism management, does not remain in the model the assumption of H0 is not ruled out; that is, the CEO's power indices do not affect the performance of a company in pressure-driven companies based on product market competition.

Sub-hypothesis "(1)," Management conservatism affects the performance of companies in pressured firms on the basis of product market competition.

Which is statistically compiled as follows:

Management conservatism does not affect the performance of companies in pressured firms based on product market competition.

Table 3: Estimation of statistical model

MTB i,t+1 = α0 + α1 MACO i,t + α2 Lev i,t+ α3 Size i,t + εit.				
Variables	Estimated coefficient	Standard error	T test statistics	Probability test t
C	0.755691	0.455931	1.657468	0.0982
Lev	-0.060398	0.027186	-2.221633	0.0269
Maco	0.027521	0.037002	0.743766	0.4574
SIZE	0.027353	0.032781	0.834404	0.4045
R2 0.015741		F statistics 2.185689		Durbin-Watson 1.984,951
Adjusted R2 0.008539		F probability 0.039147		

The results of the estimation show that the probability of the t test for the constant coefficient and the invariant conservatism of management and the control variables is greater than 5%, so the relationship is not statistically significant. Therefore, with a confidence of 95%, the hypothesis for these variables is not confirmed. The determination coefficient shows the explanatory power of the independent variables that can explain about 2% of the variation of the dependent variable. Because Durbin-Watson is between 1.5 and 2.5, so there is no self-correlation in the model. The probability of F statistic which is less than 5% indicates that the whole model is statistically significant, and according to the hypothesis management conservatism does not remain in the model, the assumption H0 is not ruled out so management conservatism dos not affect the performance Participation in pressured Firms product market competition.

Sub-hypothesis 2: Management effectiveness affects the company's performance in pressured Firms based on product market competition.

Which is statistically compiled as follows:

Management efficiency does not affect the performance of the company in pressure firms based on product market competition. The results of the estimation show that the probability of the t-test for the constant and variable coefficient of management efficiency is less than "(5%)," so the relationship is not statistically significant. Therefore, with "(95%)," confidence, the hypothesis is confirmed for these variables. The determination coefficient shows the explanatory power of independent variables that can explain about "(23%),"of the variations of the dependent variable. Because Durbin-Watson is between "(1.5) and (2.5)", so there is no self-correlation in the model. The probability of F statistic is less than "(5%)," so, it's indicates that the whole model is statistically significant, and given the hypothesis that

the management efficiency remains in the model and the assumption "(H0) is "rejected; That is, the effectiveness of management affects the performance of companies in pressured firms based on product market competition.

Table 4: Estimation of statistical model

MTB i,t+1 = α0 + α1 MAEF i,t + α2 Lev i,t+ α3 Size i,t + εit.				
Variables	Estimated coefficient	Standard error	T test statistics	Probability test t
C	1.199211	0.469575	2.553820	0.0110
Lev	-0.066403	0.026973	-2.461864	0.0142
Maef	0.018909	0.006123	3.088043	0.0022
SIZE	-0.009881	0.034445	-0.286847	0.7744
R2 0.236723		F statistics 5.197364		Durbin-Watson 1,984,951
Adjusted R2 0.229657		F probability 0.001562		

Sub-hypothesis 3: Management integrity affects the performance of companies in pressured firms based on product market competition.

Which is statistically compiled as follows:

Integrity of management does not affect the performance of companies in pressured firms based on product market competition.

Table 5: Estimation of statistical model

MTB i,t+1 = α0 + α1 TA i,t + α2 Lev i,t+ α3 Size i,t + εit.				
Variables	Estimated coefficient	Standard error	T test statistics	Probability test t
C	0.556967	0.447147	1.245601	0.2136
Lev	-0.059795	0.027121	-2.204758	0.0280
TA	-1.28E-08	4.90E-09	-2.615036	0.0093
SIZE	0.043894	0.032357	1.356559	0.1757
R2 0.230783		F statistics 4.277125		Durbin-Watson 1,980,738
Adjusted R2 0.223586		F probability 0.005465		

The results of the estimation show that the probability of the t-test for the constant coefficient and the integrity of management is less than (5%), so the relation is statistically significant. Therefore, with "(95%)," confidence, the hypothesis is confirmed for this variable. The determination coefficient shows the explanatory power of independent variables that can explain about "(24%)," of the variation of the dependent variable. Since the Durbin-Watson is between "(1.5) and (2.5)", so there is no self-correlation in the model. The probability of F statistics, which is less than "(5%),"indicates that the whole model is statistically significant and given the hypothesis that integrity of management remains in the model,

the assumption of "(H0) is" rejected; that is, integrity of management affects the performance of the company in pressured companies on the basis of product market competition.

5 Discussion and Conclusion

The tendency to invest in high-liquidity capital markets and diversify investments is another characteristic of institutions. All of these investments and, in principle, the approach that institutions take to investing, are backed by an information system that enables information to be acquired and processed. And small shareholders place institutions above the power of market analysis and the performance of the companies in which they invest. Based on the results of the research hypotheses, it was found that efficiency and integrity of management affect the performance of companies in pressured firms based on product market competition, but the effect of management conservatism on the performance of the company in pressured firms based on product market competition confirms is ineffective and in the study and evaluation of the effect of CEO power indicators on firm performance in pressure companies based on product market competition, the results of the tests indicate that the power indicators of the CEO do not affected on the performance of the company in the under pressure firms the market competitiveness of the product which contradicts the results of other researches.

References

[1] Amirhosseini, Z., Hadipour, S., Evaluation of the Association between Company Performance and Tehran's Stock Market Liquidity, Advances in mathematical finance & applications, 2018, **3**(2), P. 59-68, Doi:10.22034/amfa.2019.582367.1158.

[2] Aliakbarpoor, Z., Izadikhah, M., Evaluation and ranking DMUs in the presence of both undesirable and ordinal factors in data envelopment analysis, International Journal of Automation and Computing, 2012, 9 (6), P. 609-615, Doi: 10.1007/s11633-012-0686-5

[3] Marrakchi Chtourou, S., Bédard, J., Courteau, L., *Corporate Governance and Earnings Management*, SSRN, 2001, Doi: 10.2139/ssrn.275053

[4] Dibachi, H., Behzadi, MH., Izadikhah, M., *Stochastic multiplicative DEA model for measuring the efficiency and ranking of DMUs under VRS technology*, Indian Journal of Science and Technology, 2014, **7** (11), P. 1765–1773,
Doi: 10.17485/ijst/2014/v7i11.19

[5] Fali, IM., Ibenre, NA., Mustapha, LO., *Leverage and Financial Performance of Islamic Banking in Nigeria*, The International Journal of Business and Management, 2019, **7**(7), Doi: 10.24940/theijbm/2019/v7/i7/BM1907-036

[6] Garcıa, M. E., Sanchez, B., *Firm value and ownership structure in the Spanish capital market. Corporate Governance*,2012, **11**(1), P.41-53, Doi: 10.1108/14720701111108835.

[7] Kaplan, S, *Appointment of outsiders to Japanese boards, Determinants and implications for managers*, Journal of Financial Economics,1998, **36**, P. 225–57, Doi: 10.1016/0304-405X(94)90025-6.

[8] Lin, F., *A panel threshold model of institutional ownership and firm value in Taiwan*, International Research Journal of Finance and Economics, 2012, **42**(14), P.120-135.

[9] Machuga, S., Teitel, K., *Board of Director Characteristics and Earnings Quality Surrounding Implementation of a Corporate Governance Code in Mexico*, Journal of International Accounting, Auditing and Taxation, 2008, **18**, P.1–13, Doi: 10.1016/j.intaccaudtax.2008.12.002.

[10] Natchtmann, H., Needy, K, *Fuzzy Activity Based Costing: A Methodology for Handling Uncertainty in Activity Based Costing Systems*, The Engineering Economist, 2001, **46**(4), P. 245-273, Doi: 10.1080/00137910108967577.

[11] Ravanshad, M, R., Amiri, A., Salari, H., *Application of the two-stage DEA model for evaluating the efficiency and investigating the relationship between managerial ability and firm performance*, Advances in mathematical finance & applications, 2018, **3**(2), P.59-68., Doi:10.22034/amfa.2019.582206.1160.

[12] Rashidi Baqhi, M., *CEO Risk-Taking Incentives based on Environmental Sustainability*, Advances in Mathematical Finance and Applications, 2020, **5**(3), P. 261-270, Doi: 10.22034/amfa.2020.1888002.1348

[13] Radenovic, S., Hasani, P., *Impact of Financial Characteristics on Future Corporate Risk-Taking Behavior*, Advances in Mathematical Finance and Applications, 2020, **5**(2), P. 129-147, Doi: 10.22034/amfa.2019.562157.1104

[14] Schmid, M., Oesch, D., Ammann, M., *Corporate governance and firm value: International evidence*. Journal of Empirical Finance,2014, **18**(3), P. 36- 55, Doi: 10.1016/j.jempfin.2010.10.003.

[15] Serguieva, A., Hunter, J., *Fuzzy Interval Methods in Investment Risk Appraisal*, Fuzzy Sets and Systems, 2004, **142**, P. 443-466, Doi: 10.1016/S0165-0114(03)00166-0

[16] Syau, Y., *Fuzzy Numbers in The Credit Rating of Enterprise Financial Condition*, Review of Quantitative Finance and Accounting, 2001, 17, P. 351–360, Doi: 10.1023/A:1012783613875.

[17] Safari, M., Hassanpour, D., Valiyanc, H., *Management Demographic Characteristics, Auditor Choice and Earnings Quality: Empirical Evidence from Iran,* Advances in mathematical finance & applications, 2019, **4** (3), P.95-106, Doi:10.22034/amfa.2019.582367.1162.

[18] Safari Gerayli, M., Hassanpour, D., Valiyan, H., *Management Demographic Characteristics, Auditor Choice and Earnings Quality: Empirical Evidence from Iran*, Advances in Mathematical Finance and Applications, 2019, **4**(3), P. 95-106, Doi: 10.22034/amfa.2019.582367.1162

[19] Tavana, M., Izadikhah, M., Di Caprio, D., Farzipoor Saen, R., *A new dynamic range directional measure for two-stage data envelopment analysis models with negative data*, Computers & Industrial Engineering, 2018, **115**, P. 427-448, Doi: 10.1016/j.cie.2017.11.024

[20] Taherinia, M., *The Impact of Investment Inefficiency and Cash Holding on CEO Turnover*, Advances in Mathematical Finance and Applications, 2020, **5**(4), P. 469-478, Doi: 10.22034/amfa.2020.674945