

The study of impact the management ability on the performance of the listed companies in Tehran stock exchange

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Abstract: The purpose of the study is to examine the management ability on the performance of the listed companies in Tehran stock exchange. Management ability, and return on assets, return on equity, Tobin's Q and earning per share are considered as dependent and independent variables of the study, respectively. To measure management ability, Data Envelopment Analysis (DEA) is used in this research. The statistical population of the research includes all listed companies in Tehran stock exchange during 2009 to 2013 which 83 firms were selected based on systematic omission. Also, statistical analyses were performed through EXCEL and EVIEWS 7 software. The results suggested that management ability significantly impact on return on assets. Also, management ability has significant impact on Tobin's Q. Furthermore, management ability significantly influence on earning per share.

Key words: Return on assets (ROA); Return on equity (ROE) Tobin's Q; Earning per share (EPS); Management ability

1. Introduction

Managerial ability, especially human resources management is often considered as a firm's intangible assets. Higher Managerial ability may relate to more efficient management of daily operations, especially when managerial decisions should majorly impact on firms' performance during crisis periods. Furthermore, it is possible that higher managerial ability may related to projects with higher net current value for given scale and powerful performances. During a crisis period with limited funding, higher managerial ability positively related a successful confirmation of a firm value to external factors, so it increases information asymmetry and enables firms to take more loans for their investments (Malekzadeh et al., 2011).

Financial crisis causes running out all liquidity of financial institutions, because it is increased indefinitely and financial institutions' conservatism display higher internal control which highlight the importance of managerial ability in decreasing firms' financing problems (Chang et al., 2013). Financing problems possibly create underinvestment condition for companies. Kamplo et al. (2012) and Watt and Zoo (2014) argued that global financial crisis has serious consequences for firms' investment. If managerial ability decreases financing problems, it is expected from that to positively correlate with investment. Managerial ability is increased when managers produce higher incomes for each given level of resources, or when they minimize their used

resources for each given level of resources (Fakhari et al., 2007).

What we really looking for is examining the impact of managerial ability on the performance of the listed companies in Tehran stock exchange. It seems the answer for this question can be effective for firms' managers, investors and independent investors, because they can facilitate the enhancing of firms performance through realizing each effective factors on their performance, especially for firms' managers.

2. Research background

(Erkans et al., 2012) examined 2008 financial crisis in 30 financial companies and concluded that management effectively impact on crisis effect volume. The results also suggest that higher the level of organizational maintenance and board independence, lower the stock return during crisis period, because firms are more risky and return on equity will be increased during the period.

(Demirjan et al., 2012) investigated the relation between management ability and earning quality. They found that there is a positive correlation between earnings quality and management ability. If managers are more capable, it will lead to decreased financial statement rework, earnings sustainability and increased accruals, decreased error in providing debts and higher quality of accruals estimation.

(Aebi et al., 2012) investigated the impact of financial institutions' chairman of a board risk and other risk management related to corporate governance mechanism on the performance during crisis period. The results indicated that banks in

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which their risk managers directly reports to chairman of the board have significantly performance than other sampled banks.

(Panayotis et al., 2013) examined the correlation between management ability and firm performance during global financial crisis in 2008. They realized that there is a positive correlation management ability and firm performance. Firms with highly capable managers have more investment and better profitability during a crisis period. Finally, there is a positive correlation between management ability and information asymmetry.

3. Research methodology

3.1. Research's hypotheses

- Management ability significantly impact on return on assets.
- Management ability significantly impact on return on equity.
- Management ability significantly impact on Tobin's Q.
- Management ability significantly impact on earnings per share.

3.2. Research population and statistical sample

The statistical population of the current research includes all listed companies in Tehran stock exchange during 2009 to 2013. The following conditions are considered for accepting companies:

1. The samples companies should be listed in Tehran stock exchange since 2009 to 2013.
2. They should not be part of Banks and Financial institutions (investment companies, financial intermediary, holding, banks and leasing firms).
3. They should not be loss firms.
4. They should not change their fiscal year during the research.

It should be noted that systematic sampling method is used in this research, namely the firms which don't qualify for the above condition would have been ignored the sample and the remaining firms (83 firms) would have been examined as samples.

3.3. Regression model

3.3.1. The first hypothesis model

$$ROA_{it} = \alpha_0 + \alpha_1 DEA_{it} + \alpha_2 SIZE_{it} + \alpha_3 LEV_{it} + \epsilon_{it}$$

3.3.2. The second hypothesis model

$$ROE_{it} = \alpha_0 + \alpha_1 DEA_{it} + \alpha_2 SIZE_{it} + \alpha_3 LEV_{it} + \epsilon_{it}$$

3.3.3. The third hypothesis model

$$QT_{it} = \alpha_0 + \alpha_1 DEA_{it} + \alpha_2 SIZE_{it} + \alpha_3 LEV_{it} + \epsilon_{it}$$

3.3.4. The fourth hypothesis model

$$P/E_{it} = \alpha_0 + \alpha_1 DEA_{it} + \alpha_2 SIZE_{it} + \alpha_3 LEV_{it} + \epsilon_{it}$$

Table 1: Operational definition of the research's variables

Management ability	DEA method is used to measure management ability. This method is a mathematical programming model which is used for estimating decision making unit (DMU) and have several inputs and outputs (net income and firms' sale growth are output and input, respectively).
ROA	Total assets divided by (financial costs+ net income)
ROE	Book value of a share divided by net income
QT	Book value of assets divided by (stock market value+ book value of debts)
P/E	Price to earnings ratio
Size	Natural logarithm of firm's book value of total assets
Leverage	Total debt to firms' total assets ratio

3.4. Data analysis method

In this research, F-Limer test is used for selecting between common effects and fixed effects methods. If fixed effects model is selected, Hausman test would be used to select among fixed effects or random effects models. Also, model's error term autocorrelation, heteroskedasticity and data normality would have been examined. To illustrate the description power of descriptive variables, to examine the significance of variables and to investigate the adequacy of whole model, adjusted coefficient of determination, T-statistics and F-Fisher test are used, respectively. As well, statistical analyses are done through EVIEWS 7 and EXCEL software.

4. Results

4.1. Examination of heteroskedasticity

To examine heteroskedasticity, Arch error terms test (LM) is performed. The obtained results are as follow:

Regarding Table 1, due to the significance level of f-statistics is not significant in 5% error level, homogeneity of variance is confirmed and heteroskedasticity of error terms are rejected.

Table 2: The results of Arch error term test (LM)

Description	Statistics amount	Probability
F-statistic	0.826521	0.1145
Obs*R-squared	1.141558	0.1145

* 5% error level

4.2.1. F-statistics test

4.2. Significance test of fixed effects method

Table 3: The results of F-statistics test

Description	Statistics amount	Freedom degree	Probability
Cross-section F	1.226528	82	*0.012
Cross-section Chi-square	142.220696	82	*0.015

* 5% error level

4.2.2. Hausman test

Table 4: The results of Hausman test

Description	Statistics amount	Freedom degree	probability
Cross-section F	6.096552	23	*0.036

* 5% error level

Due to the results of both tests (F and Hausman), the obtained probability is less than 5%, fixed effects method should be used in related regression model.

4.3. The first hypothesis test

Table 5: The first hypothesis regression test

Variable	Estimated coefficient	Deviation of estimation	t-statistics	Significance level
Fixed	0.624	0.114	5.473	*0.008
Management ability	2.336	0.416	5.615	*0.002
Firm size	3.487	0.594	5.871	*0.000
Financial leverage	0.516	0.123	4.195	*0.013
Adjusted coefficient of determination	0.608			
Durbin-Watson	1.663			
f-statistics	82.142			
Significance level	**0.000			

* 5% error level and ** 1% error level

Regarding the Table 5, impact factor of firm size on return on assets is 3.487, indicating positive and direct impact of firm size on return on assets. Impact factor of financial leverage on return on assets is 0.516, indicating positive and direct impact of financial leverage on return on assets. On the other hand, regarding significance level (0.002) of t-statistics management ability on return on assets, H_0

is rejected in 95% confidence level due to it is less than 5% error level, and it can be said that management ability significantly impact on return on assets. The empirical model of the research is:

$$ROA_{it} = 0.624 + 2.336 DEA_{it} + 3.487 SIZE_{it} + 0.516 LEV_{it} + \epsilon_{it}$$

4.4. The second hypothesis test

Table 6: The second hypothesis regression test

Variable	Estimated coefficient	Deviation of estimation	t-statistics	Significance level
Fixed	0.523	0.117	4.471	*0.031
Management ability	0.417	0.092	4.532	*0.027
Firm size	2.946	0.438	6.726	*0.000
Financial leverage	0.682	0.124	5.528	*0.015
Adjusted coefficient of determination	0.554			
Durbin-Watson	1.729			
f-statistics	74.021			
Significance level	**0.000			

* 5% error level and ** 1% error level

Regarding the Table 6, impact factor of firm size on return on equity is 2.946, indicating positive and

direct impact of firm size on return on equity. Impact factor of financial leverage on return on equity is

0.682, indicating positive and direct impact of financial leverage on return on equity. On the other hand, regarding significance level (0.027) of t-statistics management ability on return on equity, H_0 is rejected in 95% confidence level due to it is less than 5% error level, and it can be said that

management ability significantly impact on return on equity. The empirical model of the research is:

$$ROE_{it} = 0.523 + 0.417 DEA_{it} + 2.946 SIZE_{it} + 0.682 LEV_{it} + \epsilon_{it}$$

4.5. The third hypothesis test

Table 7: The third hypothesis regression test

Variable	Estimated coefficient	Deviation of estimation	t-statistics	Significance level
Fixed	0.654	0.142	4.605	*0.017
Management ability	3.458	0.522	6.624	*0.000
Firm size	2.496	0.416	6.007	*0.003
Financial leverage	0.327	0.076	4.302	*0.021
Adjusted coefficient of determination	0.784			
Durbin-Watson	1.615			
f-statistics	79.119			
**0.000	**0.000			

* 5% error level and ** 1% error level

Regarding the Table 7, impact factor of management ability on Tobin's Q is 3.458, indicating positive and direct impact of management ability on Tobin's Q. Impact factor of firm size on Tobin's Q is 2.946, indicating positive and direct impact of firm size on Tobin's Q. As well, impact factor of financial leverage on Tobin's Q is 0.327, indicating positive and direct impact of financial leverage on Tobin's Q. On the other hand, regarding significance level

(0.027) of t-statistics management ability on Tobin's Q, H_0 is rejected in 95% confidence level due to it is less than 5% error level, and it can be said that management ability significantly impact on Tobin's Q. The empirical model of the research is:

$$QT_{it} = 0.654 + 3.458 DEA_{it} + 2.496 SIZE_{it} + 0.327 LEV_{it} + \epsilon_{it}$$

4.6. The fourth hypothesis test

Table 8: The fourth hypothesis regression test

Variable	Estimated coefficient	Deviation of estimation	t-statistics	Significance level
Fixed	0.417	0.112	3.723	*0.037
Management ability	2.625	0.462	5.681	*0.011
Firm size	4.812	0.718	6.701	*0.000
Financial leverage	0.792	0.136	5.823	*0.0208
Adjusted coefficient of determination	0.562			
1.817	1.615			
f-statistics	72.312			
**0.000	**0.000			

* 5% error level and ** 1% error level

Regarding the Table 8, impact factor of management ability on earning per share is 2.625, indicating positive and direct impact of management ability on earning per share. Impact factor of firm size on earning per share is 4.812, indicating positive and direct impact of firm size on earning per share. As well, the impact factor of financial leverage on earning per share is 0.792, indicating positive and direct impact of financial leverage on earning per share. On the other hand, regarding significance level (0.792) of t-statistics financial leverage on earning per share, H_0 is rejected in 95% confidence level due to it is less than 5% error level, and it can be said that management ability significantly impact on earnings per share. The empirical model of the research is:

$$P/E_{it} = 0.417 + 2.625 DEA_{it} + 4.812 SIZE_{it} + 0.792 LEV_{it} + \epsilon_{it}$$

5. Conclusion and recommendations

The results of the first hypothesis suggested that management ability significantly impact on ROA. Hence, (Panayotis et al., 2013) found that there is a positive correlation between management ability and firm performance. (Karmeli and Tishler, 2004) recognized that there is a positive relation between interests, capabilities and performance of industrial firms. The results of the second hypothesis indicated that management ability significantly impact on return on equity. (Karmeli and Tishler, 2004) examined the relation among management ability and firm performance and concluded that there is a positive relation between interests, capabilities and performance of industrial firms. As well, senior managers play an important role for achieving earnings in companies. The findings of the third hypothesis demonstrated that management ability significantly impact on Tobin's Q. Therefore, (Panayotis et al., 2013) investigated the relation

between management ability and firm performance during global financial crisis in 2008. The results of the fourth hypothesis showed that management ability significantly impact on price to earnings ratio. On the contrary, there are no inconsistent results regarding the performed examinations. Based on the research's results, the following suggestions are made:

1. It is suggested to shareholders, investors and other stakeholders to consider firm's manager and their experience and capability during decision-making, because they have major role in performance and decrease investment risk.

2. It is suggested to firms to disclose scientific and empirical records of firms' managers through their websites in order to stakeholder can use the information. Also, Stock exchange can play his important role in this field.

3. Regarding the research's results, it can be suggested to board members to facilitate the improved financial and accounting performance through applying capable managers and utilizing necessary plans for training managers.

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