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Examining the Impact of Managerial Ability on Firm Performance: A Case Study of the Iranian Capital Market

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Abstract

It aims to understand and improve how companies perform, which is influenced by the ability managers have; therefore, the aim is to examine the impact of managerial ability on firm performance. For the present study, three hypotheses were formulated. In order to test these hypotheses, a linear regression model has been used. The statistical population consisted of 117 companies listed on the Tehran Stock Exchange during the years 2013 to 2022 (1170 firm- year). The Data Envelopment Analysis (DEA) model [1] was used to assess managers' capabilities. In addition, three criteria were used to assess the performance of companies: Qtobin stock return and true accounting performance. The research results indicate that there is no significant relationship between managers' ability and the company's Return (RET). However, there is a significant relationship between managers' capabilities and the Qtobin-based performance (QT) of the firm. In addition, there is a significant relationship between managers' ability and the True Accounting-based performance (TA) of the firm. An important aspect of managerial ability is the ability to adapt and innovate in response to environmental and market changes. Studying these aspects can help to identify the best management methods and strategies, which in turn can improve management knowledge and increase productivity in companies.

Keywords: Managers' abilities, Ture accounting performance, Firm performance, Return.

1 | Introduction

Understanding company performance and improving it has always been a focus, regardless of time and circumstances. One of the ways in which it can be influenced is through the ability of managers to [2]. Previous research has shown that managers who have better ability not only take the initiative to adjust their strategies in companies to the changing environment but also take innovative steps to increase their resources for the

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long-term survival of companies. It is believed [3] that companies can increase their productivity by using skilled human resources to achieve competitive advantages and sustainable success in the market.

They showed that human capital plays an important role in achieving sustainable performance, especially in emerging markets. Because the ability of managers is the ability to effectively allocate resources to achieve their target profit and create value, the efficiency of managers compared to competitors in converting company resources into income can be defined as managerial ability [1]. Good managers will make the best use of the company's scarce resources in a challenging environment, drawing on their professional and academic knowledge [3].

Therefore, the skills of managers can be considered an effective factor in the value and performance of the company, which has caused the role of managers to be paid more attention, and the results of the research [4] confirm this issue. Based on the resource-based perspective, which is one of the most widely used theories to explain the differences in performance and results of organisations, the role of managers is highly emphasized. The ability of managers to identify and effectively use the resources of the organisation can be seen as a valuable resource that enables a company to achieve a sustainable competitive advantage. Managers differ in their ability to manage resources and coordinate management processes to improve organisational performance. Despite this extensive literature, little is known about the role of Managerial Ability (MA) in shaping firm performance, perhaps because MA is latent and, therefore, not easily measured [5]. However, quantifying the efficiency and ability of pre-service managers [1] has been a challenging task, and some of the reasons for this are visible managerial skills (such as education, experience, etc.) and invisible (such as emotional intelligence, cognitive, etc.) [3].

A number of researchers believe that different characteristics of managers (e.g. educational background, psychological characteristics and the ability of the CEO) can have different effects on the performance of the company [6]. Based on this, the ability of managers is one of the main components of success in innovation decisions and has a positive relationship with the company's market value [7]. One of the factors that lead to the company's financial constraints is the company's poor financial performance, which may cause foreign investors and creditors to worry about the company's future repayment capacity [8]. In addition, high ability managers are a key factor in the current activities of companies.

Such companies usually face difficulties in obtaining bank loans [9], [10]. Since top managers can take advantage of more favourable investment opportunities [11] and earn more economic profit [6], firms with higher MA are better able to convince their creditors and investors of the validity and efficiency of the use of financial resources [8]. In other words, one of the ways in which top managers improve their company's financial position is by increasing the company's profitability and performance.

2 | Literature and Development of Hypotheses

2.1 | Management Ability

In a general view, managerial ability and its various measures are considered one of the dimensions of organisational capital, which is part of intangible assets in a general classification [1]. Define managerial ability as the efficiency of managers compared to competitors in converting the company's resources into income. For companies, these sources include the price of inventories, selling, general and administrative expenses, property, plant and equipment, operating rents, research and development costs and the company's intangible assets [1]. It is believed that more capable managers have a better understanding of technology and industry trends and can more reliably predict product demand. Investing in more valuable projects and managing people more effectively are also characteristics of effective managers. In the short term, these managers are expected to be able to generate more income using a given level of resources or to generate a given level of income using fewer resources (maximising the efficiency of the resources used) [1]. The most famous model for measuring managers' ability is the model [1]. In their study, the researchers, for the first time, developed a model that quantitatively measures management ability using accounting variables. In this model,

management capability is calculated by measuring the efficiency of the firm and then entering it into the multivariate linear regression as the dependent variable, controlling for the inherent characteristics of the firm [1]. In order to measure the ability of management, they have used the Data Envelopment Analysis (DEA) model. The DEA model is a type of statistical model that is used to measure system performance using input and output data. In the model used in this study, sales revenue is the output variable and 7 other variables are considered as inputs, i.e. cost of goods sold, general administrative and selling expenses, net property, plant and equipment, operating rentals, research and development expenses, goodwill and intangible assets, which largely cover management's discretion in achieving the desired revenue.

The company performance model is designed like the Fama and French (1997) industry model so that the performance of each company can be compared with the performance of companies operating in the same industry. In this model, a specific coefficient is also considered for each of the input variables, as the effect of all input variables on the output (sales) is not the same. The value calculated for the efficiency of the company also includes a number between zero and one, the maximum efficiency being equal to one, and the lower the result obtained, the lower the efficiency of the company. In any industry, the company with the highest level of efficiency is the industry leader.

The manager's ability plays a significant role in leading his organisation. The manager must be able to motivate all managers and employees. Although management methods are different, the ultimate goal is the same. The goal is to motivate employees for high productivity and better performance than in their previous situation. All successful companies have achieved their current position through high employee performance. Every successful brand in the world has done the same.

2.2 | Performance Evaluation

The concept of business performance is a broad one, and several definitions have been provided. Performance is the state of working with quality. Therefore, performance is a general construct that refers to how the company's operations are carried out. Performance is the completion of tasks assigned by the organisation to the organisational force, and also performance is the tangible economic principles or financial executive factors. Performance is a set of behaviours that people demonstrate in relation to their work. On the other hand, performance appraisal is a process by which the work of employees can be formally reviewed and assessed on a regular basis.

Recognizing outstanding employees and rewarding them and thus creating motivation to improve the performance of employees is one of the main causes of performance evaluation. The goals of employee evaluation have been divided into two categories: development goals and administrative-executive goals. In another definition, performance appraisal is the systematic and regular assessment of people's work in terms of how they are performing in their assigned roles and identifying their potential for growth and improvement. Performance evaluation is a regular process of measuring performance and providing feedback. Performance evaluation is based on this equation: desired performance-actual performance=required action. The further away the desired performance is from the actual performance, the more attention and effort is required to compensate for the difference.

Performance evaluation is the official method of identifying the characteristics of employees (professors) based on positive or negative feedback from the results of people's performance in how to perform tasks.

2.3 | Research Hypotheses

Based on the mentioned contents, the following hypotheses have been explained:

H1. There is a significant relationship between managerial ability and Return market.

H2. There is a significant relationship between managerial ability and company performance.

H3. There is a significant relationship between managerial ability and the company's performance based on the true accounting measure.

3 | Research Method

3.1 | Statistical Population

The statistical population of this research is the companies listed on the Tehran Stock Exchange that have been active on the stock exchange during the years 2013-2022. In this way, all the companies that are members of the statistical community have the following conditions and will be included in the statistical sample by the method of systematic elimination:

- *The end of their financial year should lead to the end of the year.*
- *Have been listed on the stock market before 2013.*
- *During the mentioned financial years, there should be no change in activity or change in the financial year.*
- *Do not belong to investment companies, banks, insurance companies, etc.*
- *The information needed to calculate the research variables in the years under review should be available.*
- *The period of the research is from 2013 to 2022 for 10 years.*

In this research, based on the above conditions, 117 companies have been selected in 10 years (1170 years - firms).

4 | Research Models

In the present study, *Model (1)* was used to test the study hypotheses:

$$PER_{it} = \alpha_0 + \alpha_1 MA_{it} + \alpha_2 SIZE_{it} + \alpha_3 LEV_{it} + \alpha_4 LnAge_{it} + \alpha_5 CFO_{it} + \alpha_6 GRO_{it} + \varepsilon_{it}. \quad (1)$$

4.1 | Independent Variables

4.1.1 | Managerial Ability

The independent variable of this research is the Managerial Ability (MA), which has been used to measure it using the *Model (1)*. In this model, by measuring the company's efficiency and then entering it into the multivariate linear regression as a dependent variable and controlling the inherent characteristics of the company, management ability is calculated. In order to measure the efficiency of the company, [1] they used the DEA model.

DEA model is a type of statistical model that is used to measure system performance using input and output data and is in the form of *Model (2)*:

$$\text{Max } \theta = \frac{\text{Sales}}{v_1 CGS + v_2 SG\&A + v_3 PPE + v_4 InTan + v_5 R\&D}. \quad (2)$$

In the above relationship, Sales will be the company's sales, CGS will be the cost of goods sold, SG&A will be the sales, general, and administrative expenses of the company, PPE will be the net tangible fixed assets, and InTan will be the net intangible assets, R&D will be the research and development costs. Maxθ represents the efficiency of the entire firm. In this model, a specific coefficient (v) is considered for each of the input variables because the effect of all input variables on the output (sales) is the same. The calculated value for the efficiency of the company is in the range of 0 to 1. Companies with an efficiency score of one are very efficient companies, and companies whose efficiency score is less than one are below the efficiency limit and should reach the efficiency limit by reducing costs or increasing revenues.

The purpose of calculating the company's efficiency is to measure the managerial ability, and since the inherent characteristics of the company are also involved in the calculations related to the efficiency, it is not possible to measure the ability of the management correctly because it is calculated more or less than the real

value due to these features. Demerjian et al. [1] In order to control the effect of the intrinsic characteristics of the company in their model, they separated the Firm's Efficiency (FE) into two separate parts, i.e. the efficiency based on the intrinsic characteristics of the firm and managerial ability.

They did this by controlling for four intrinsic firm characteristics (LNTA, Market Share, Positive Cash Flow, LNAge). Each of these four variables, as inherent characteristics of the company, can help the management to make better decisions or act in the opposite direction and limit the management's ability.

After removing the inherent characteristics of the company, the remaining value represents management ability. In *Model (3)* presented by [1], these four features are controlled:

$$FE = \alpha_0 + \alpha_1 LNTA + \alpha_2 MarketShare + \alpha_3 PositiveCashFlow + \alpha_4 LnAge + \varepsilon. \quad (3)$$

In this relationship, FE shows the efficiency of the entire company, which is obtained from the previous relationship. Firm size (LNTA) is equal to the natural logarithm of the firm's total assets. The company's market share is equivalent to the ratio of the company's sales to the total sales in the industry. The positive cash flow of the company will be one if the operating cash flows of the company are positive and zero otherwise. Firm age (LNAge) is the natural logarithm of the number of years the company has been listed on the stock market. The residual (ε) of the relationship also shows the level of managers' ability.

4.2 | Dependent Variables

4.2.1 | Performance (PER)

Three different criteria are used to calculate the performance in the current research.

The criteria include 1) stock return (RET), which is obtained by dividing the difference between the stock price of the current year and the previous year by the stock price of the previous year, and 2) true accounting performance is modified through optional accrual items. For this purpose, the criterion of optional accruals according to performance can be used. This criterion enables researchers to make more reliable conclusions; hence, the true accounting performance (TRUE_ROA) is calculated as described in *Model (4)*:

$$\frac{TA_{it}}{A_{it-1}} = \beta_0 + \beta_1 \frac{1}{A_{it-1}} + \beta_2 \frac{\Delta REV_{it}}{A_{it-1}} + \beta_3 \frac{PPE_{it}}{A_{it-1}} + \beta_4 \frac{CF_{it}}{A_{it-1}} + \beta_5 \frac{NI_{it}}{A_{it-1}} + \varepsilon_{it}. \quad (4)$$

In the above model, TA_{it} represents the total accrual items that result from the difference between operating eranings and operating cash flow; A_{it-1} also represents the total assets of the previous year. It shows the change in income of the current year compared to the previous year ($REV_{it\Delta}$). PPEit is net of property, equipment and machinery. CF_{it} shows the ratio of operating cash flow to assets. DCF_{it} is a dummy variable that is 1 if the operating cash flow is negative and zero otherwise. NI_{it} represents the net income. After analyzing the above model and obtaining the error of this model, the resulting numbers of the error are multiplied by the assets of the previous year (A_{it-1}) to obtain the estimated value of optional accrual items. Then, the real accounting performance is obtained from the difference between the net profit and the optional accrual items. To homogenize and prevent data dispersion, we divide the difference between these two numbers in the assets of the current year (A_{it}). 3) to calculate the QT ratio, we first multiply the number of issued shares by the closing price of the company's shares, then add it to its total liabilities and finally divide it by total assets.

4.3 | Control Variables

The Size of the firms (SIZE) is the natural logarithm of the total assets of the company. Firm age (LNAge) is the natural logarithm of the number of years the company has been listed on the stock exchange. Debt Leverage (LEV) is obtained by dividing total liabilities by total assets. Cash Flow of Operating (CFO) is obtained by dividing the operating cash flow of the company by the total assets. The Growth of the company (GRO) is obtained by dividing the difference between the assets of the current year and the previous year, divided by the assets of the previous year.

5 | Findings

5.1 | Descriptive Statistics

In descriptive statistics, the status of data is addressed with central indicators. *Table 1* shows the status of the data as follows:

Table 1. Descriptive statistics results.

Variable	Symbol	Mean	Median	Max	Min	S.D
Managers Ability	MA	0.012	0.007	0.211	-0.081	0.022
Return	RET	0.562	0.490	7.718	0.993	1.395
Qtobin	QT	1.55	1.30	6.86	0.72	0.77
True Accounting	TA	0.134	0.114	1.192	-0.384	0.154
Age firm	AGE	0.582	0.128	4.124	0.917	0.521
Financial Leverage	LEV	0.6524	0.6337	1.9757	0.0469	0.0616
Firm Size	SIZE	14.2097	14.0909	19.3775	10.4916	1.4672
Cash Flow of Operating	CFO	0.117	0.100	0.64	-0.46	0.13
Growth	GRO	0.303	0.176	2.972	-0.999	0.511

Based on the results of *Table 1*, it can be stated that, on average, 65% of companies finance their assets through debt, the highest rate of which was for Farabi Petrochemical Company in 2017. The ratio of operating cash flow to total assets of the company is about 11%. The growth of companies' assets is about 30%.

The results of the first hypothesis test

It has been tested using regression, the results of which are shown in *Table 2*:

Table 2. The results of the first hypothesis test based on fixed effects (RET).

Variable	Symbol	Coeff.	S.D	t Stat.	Sig.
Managerial ability	MA	0/2586	0/4062	0/6365	0/5246
Firms age	LnAge	-0/5131	1/0558	-0/4846	0/6281
Operating cash flow ratio	CFO	-0/0155	0/0972	0/1603	0/8727
Growth	GRO	0/0136	0/0168	0/8137	0/4160
Financial leverage	LEV	0/9525	0/0402	23/6829	0/0000
Size of the firms	SIZE	-0/0556	0/0215	-2/5847	0/0099
	C	0/9796	0/3289	2/9785	0/0030
		R2	0.4204	F	84.0500
		R2 Adj.	0.4154	Sig.	0.0000

Based on the results of *Table 2*, the value of Fisher's F statistic is equal to 84.05 and since its significance level is 0.000, it can be said that the research model has a good fit. The results showed that there is no significant relationship between the ability of managers and the performance of the market-based company (RET); in other words, the first hypothesis is not accepted.

The results of the second hypothesis test

It has been tested with the help of regression, the results of which are shown in *Table 3*.

Table 3. Results of the second hypothesis test based on fixed effects (QT).

Variable	Symbol	Coeff.	S.D	t Stat.	Sig.
Managerial ability	MA	0/2588	0/3574	0/7241	0/6517
Firms age	LnAge	-0/3214	1/5522	-0/2070	0/7003
Operating cash flow ratio	CFO	-0/1212	0/0578	-2/0968	0/0001

Table 3. Continued.

Variable	Symbol	Coeff.	S.D	t Stat.	Sig.
Growth	GRO	0.951	0.2314	0.4109	0.8622
Financial leverage	LEV	0.5474	0.2596	2.1086	0.0001
Size of the firms	SIZE	-0.9576	0.5321	-1.7996	0.0521
	C	0.3247	0.1440	2.2548	0.0000
		R2	0.5211	F	79.4002
		R2 Adj.	0.5019	Sig.	0.0000

Based on the results of *Table 3*, the value of Fisher's F statistic is equal to 79, and since its significance level is 0.000, it can be said that the research model is suitable. The results of the test at the 95% confidence level showed that there is a significant relationship between the managerial ability and the performance of the company based on the Qtobin index (QT); in other words, the second hypothesis is not accepted.

The results of the third hypothesis test

It has been tested using regression, the results of which are shown in *Table 4*:

Table 4. Results of the third hypothesis test based on fixed effects (TA).

Variable	Symbol	Coeff.	S.D	t Stat.	Sig.
Managerial ability	MA	0/5513	0/2178	2/5312	0/0000
Firms age	LnAge	-0/7574	1/2541	-0/6039	0/8203
Operating cash flow ratio	CFO	-0/9562	0/4174	-2/2908	0/0001
Growth	GRO	0/1091	0/2154	0/5064	0/7541
Financial leverage	LEV	0/3284	0/1239	2/6505	0/0000
Size of the firms	SIZE	-0/3462	0/1542	-2/2451	0/0001
	C	0/2514	0/1009	2/4915	0/0000
		R2	0.5312	F	79.6542
		R2 Adj.	0.5199	Sig.	0.0000

Based on the results of *Table 4*, the value of F statistic is equal to 79, and since its significance level is 0.000, it can be said that the research model is suitable. The results of the test at the 95% confidence level showed that there is a significant relationship between the ability of managers and the company's performance based on the true accounting criteria (TA); in other words, the fifth hypothesis is accepted.

6 | Conclusion

The directors of the company are the people who are elected by the shareholders and have the necessary expertise to assume the trust of the shareholders in the management and administration of the company effectively and efficiently. Managers are also responsible for making decisions that if they can add value to the company, the company will progress and perform well.

This is consistent with the stakeholder theory that companies should be able to fulfil the dual role of fulfilling the company's own needs by performing day-to-day operational activities and should be able to meet the needs of stakeholders who also contribute to the company's success [12], [13]. The existing management and economics literature often recognizes the important role of managers in shaping firm performance (e.g., [14]. In particular, the top tier theory developed by [15], [16] has pointed out that an effective management team mainly drives the success of any company. The ability of managers indicates the ability to effectively allocate resources (i.e. human resources and capital) to pursue profit and value creation of managers [5]. Managers who are competent in running the company's operations can improve the company's performance so that the company's performance looks good in the eyes of investors and other stakeholders of the company [12]. The ability of managers to create, develop and achieve success in the company is important as measured by

productivity, investment decisions, service compensation and overall company performance. The literature shows that manager-specific characteristics, such as ability, skills, and talent, affect firm performance [1]. They found that managers with better ability take innovative initiatives and actions to use company resources for long-term financial sustainability.

In addition, they found that the personality traits and competencies of a manager lead to the optimal use of resources. High-ability managers are receptive to risk-taking, which is associated with increased corporate value [17].

The results of the research showed that more capable managers significantly increase the company's performance, while managers with lower ability significantly decrease the company's performance. Their findings have been true based on the accounting and market performance criteria of the company. In general, it can be said that capable managers increase the value of the company, and its effects are stronger in companies with financial constraints.

[18] It shows that management ability is the determining factor of accounting transparency and reporting quality of a company. [19] It also shows that companies that are managed more skillfully perform better. [20] They point out that the company's investment is influenced by both the managerial quality and the reputation of the managers. [12] Obtaining management ability has a significant effect on the company's performance, and profit management has a direct effect on it. Research results [4] showed that MA significantly affects company performance. Specifically, high-ability CEOs are associated with positive performance.

As of [21], It was found that CEOs with high management abilities are able to identify threats, opportunities and competitive advantages. They [22] found that the ability of managers, especially internal CEOs with foreign work or academic experience, has the most positive relationship with Qotubin's performance index. They also found that local CEOs contribute to firm performance only if they do not have family ties to the firm. Finally, the findings show that the presence of foreign CEOs improves firm performance.

According to the results of the hypothesis testing of this research, the following suggestions can be made: The shareholders and members of the board of directors of companies, whose role is very important in the selection of managers, are suggested to act very carefully in the selection of senior managers, especially the CEO. The results of the research showed that capable managers can improve the performance of companies and remove financial restrictions by reducing information asymmetry between the company and creditors. It is also suggested to the researchers to measure the effects of other variables, such as political connection and corporate governance, on the relationship between the ability of managers and the performance of companies in future research.

Author Contributions

Mohsen Imeni led the research design and analysis. Bahareh Faezi contributed to the methodology and literature review. Aida Bagherzadeh handled data collection and statistical analysis.

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Data Availability

Data are available from the corresponding author upon request.

Conflicts of Interest

The authors declare no conflicts of interest.

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