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The Effect of Management Ability on Overproduction and Sales Prediction

Leila Khalili Maghsudlo[1] | Ali Ashtab[2*] | Gholamreza Mansourfar[3]

1. Faculty of Economics and Management, Urmia University, Urmia, Islamic Republic of Iran. E-mail: st_l.khalili@urmia.ac.ir
2. Corresponding Author, Department of Accounting, Urmia University, Urmia, Iran. E-mail: a.ashtab@urmia.ac.ir
3. Department of Accounting and Management, Faculty of Economics and Management, University of Urmia, Urmia, Iran. E-mail: g.mansourfar@urmia.ac.ir

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ABSTRACT

The purpose of this paper is to investigate the effect of management ability on overproduction and sales prediction. The sample examined in this research includes 138 companies admitted to the Tehran Stock Exchange between 2008 and 2023, which were selected by systematic elimination. To test the hypotheses, the method of correlation between variables and multiple regression equations has been used. The research results indicate that as management ability increases, the likelihood of company contributing to overproduction decreases. If management with a high ability level predicts that it will have higher sales next year to avoid inventory shortages, it will overproduce this year. Also, the results of the hypothesis test showed that managers with high ability do not use overproduction for the purposes of natural earnings management, thus, in the following year, the incidence of overproduction will be reduced.

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1. Introduction

A nation's human resources are its most important component. While some nations with abundant natural resources fall into the category of impoverished nations, other nations lacking natural resources and advantageous geographic location, that only rely on sufficient and skilled human resources are classified as advanced nations. The managers and capitals of any nation constitute its most important human resources; without sufficient and capable managers, its other natural resources may prove insufficient (Khoshouei et al., 2013). The International Institute for Development Management's (1995) Global Competitiveness Report lists managerial capabilities as determinants of a firm's competitiveness, along with competitive domestic economies, globally focused economic policies, minimal government structure, knowledge-based societies, and effective use of current technologies. The many facets of corporate decision-making that increase business value are clarified by the literature on management competence (Inam Bhutta et al., 2021). Prior research indicates that manager-specific features (ability, talent, reputation, or style) affect economic result and are crucial to economics, finance, accounting, and management research and practice (Demerjiian et al., 2012). Highly ability managers take the initiative to modify companies in response to changing environments and take innovative steps to increase their resources and long-term survival (Thomson, 2003). Kim (2020) states that companies with capable managers who possess high emotional intelligence perform better than their peers. According to Inam Bhutta et al. (2021), stakeholders rely on the firms' accounting and market returns to assess the management's overall performance. Accordingly, it can be said that choosing an ability manager to manage the company's operations is an important matter that guarantees the survival of the company.

Overproduction is typically undesirable but occasionally inevitable in terms of corporate operations and management; Overproduction hurts businesses by increasing inventory stocking costs and wasting resources. Overproduction is seen by firm strategic management as a drawback of resource management throughout operational phase (He, 2023). Roychowdhurry (2006) found evidence suggesting that price discounts were used to temporarily increase sales, overproduction was used to report lower cost of goods sold, and reductions in discretionary expenditures were employed to improve reported margins. According to many accounting research papers about management earning (Cohen & Zaroawin, 2010; Guny, 2010; Roychowdhurry, 2006), the accounting process of absorption may involve using overproduction as a strategy to report higher earnings, along with other real-economic activities. Therefore, it is noteworthy that companies deliberately modify less-than-ideal business processes in order to affect accounting results (He, 2023). The research on real-economic earnings management suggests that overproduction is an accounting decision used to manage earnings (Roychowdhurry, 2006). Higher-ability managers don’t need to utilize earning management since, according to Huang and Sun (2017), they can increase sales income with the resources available in the company. Therefore, high-ability managers with better operational planning try to improve the company's activity and do not use excessive manufacturing as one of the earnings management tools because it may harm the company's activity in the future, such as maintenance costs and storage costs. High-ability managers have a better understanding of the business consequences of overproduction, so they are unlikely to incorporate overproduction into their operational decisions. According to the mentioned materials, managers' knowledge in the field of industry and technology helps them to have a relatively accurate prediction of product demand. As a result, efficient management should emphasize reducing the use of wasted resources and only boost manufacturing when it is necessary to meet operational demands (He, 2023).

This article examines overproduction by including the management ability as a moderating variable, based on prior accounting research regarding overproduction as an opportunistic result of earning management. In the next step, we investigate the possibility of overproduction in companies by evaluating future overproduction in reverse and examining the correlation between increased manufacturing and future sales in companies with higher management ability. Additionally, the management ability variable employed by Demerjiian et al. (2012) shows that management of the company can plan production and maintain inventory levels in an ideal manner to maximize the value of the company (He, 2023).

The study on the impacts of management ability on overproduction and sales prediction has not been investigated in Iran. Some researchers have examined management ability and its influencing

factors, but so far, they have not evaluated the effect of management ability on overproduction or sales production. Furthermore, in this research, four styles have been used to measure increased manufacturing. The structure of the paper is as follows: The second part of the research reviews the theoretical foundations and background of the research, the third part presents the hypotheses, and the fourth part describes the research method, which includes measurement of the initial variables and experimental tests, and in the fifth and sixth parts the results of the hypothesis test and conclusion are discussed.

2. Theoretical Foundations and Literature Review

2.1. Overproduction as an Operating Result or a Financial Reporting Strategy

Overproduction is defined either as an operational result or as a financial reporting technique. According to Couk et al. (2012) and Yang et al. (2014), the majority of prior accounting research on overproduction tries to portray this business phenomenon from the perspectives of financial reporting and earnings management, and it shows that external financial reporting incentives were the driving force behind overproduction. Because of the absorption accounting method employed in financial reporting, biases can be intentionally introduced into the results when output exceed sales, and overproduction poses risks for earnings management. If manufacturing is greater than sales, the fixed manufacturing overhead costs will be deferred to the future income statement. The current period cost of goods sold expenses will receive fewer allocations, while unsold inventories will receive more allocations. So, the current period earnings become more biased (He, 2023). Earnings management can be divided into two types: accruals-based earnings management and real-economic activities earnings management. Businesses utilize overproduction to lower expense of items sold, lower selling prices to boost sales volume, or decrease discretionary spending expenditures to boost earnings margins in real-economic activities, known as earnings management (Roychowdhurry, 2006). Gopta et al. (2010) introduce fixed costs in the study of the relationship between the company's excess manufacturing and stock accounting performance, trying to determine whether the overproduction was a result of external financial reporting or the inability of internal decision-making to respond to a negative demand shock. Their findings did not indicate that firms overproduced due to management inability to adjust inventory levels.

2.2. Overproduction and Management Ability

According to the resource-based theory (Khajavi & Qadirianarani, 2018), one of the most widely used theories in explaining the difference in the performance and results of organizations, management ability is a valuable resource that provides a sustainable competitive advantage for companies. In this theory, companies are considered heterogeneous units separated from each other based on available exclusive resources and their characteristics. This statement implies that in order for the company to achieve success, strategy developers must align the external opportunities with the resources and capabilities of the company. Accordingly, in the resource-based view, significant focus is placed on the role of managers. Therefore, it is expected that managers' ability to use resources is a factor to improve companies' performance and to achieve business success by creating a sustainable competitive advantage. Managers with managerial ability are crucial in the process that results to increased manufacturing, regardless of whether it's related to external financial reporting pressure or operational decision-making. Managerial ability encompasses a range of knowledge and skills that are crucial for the success of business operations. In the literature of economics and operations management, there is a well-documented positive relationship between managerial ability and firm performance and results (He, 2023). Controlling resource characteristics, practicing good management or possessing high managerial abilities can help firms achieve higher productivity, higher profitability, and lower failure risk (Bloum & Van Reenen, 2007; Holcomb et al., 2009; Leverrty & Grace, 2012). According to earlier research on management ability, managers with high ability possess superior abilities that enable them to address business challenges more successfully and are more educated about their companies (Banker et al., 2019). Management ability makes the organization perform effectively in the industry it operates. Organizational effectiveness is a complex concept, and various choices exist regarding measuring, defining, and achieving it. In general, organizational effectiveness is the ability of an organization to achieve its goals and the resources it needs for its survival and

promotion (Rahmati et al., 2014). The ability of managers, management styles, methods of human resources management, and morale are influential factors in the organization (Yaghoubi et al., 2017).

2.3. Literature Review

Cheen et al. (2005) argued that companies with low, but not excessively low, inventory levels typically have outstanding long-term stock market performance, while companies with high inventory levels typically have bad long-term stock market performance. The association among stock returns and return on assets positively correlates with the different levels of managerial ability, as demonstrated by Demerjiian et al. (2012). Demerjiian et al. (2013) found that managerial ability and earning quality have a positive correlation. According to Andreou et al. (2013), competent managers primarily assist businesses operating in difficult environments by facilitating greater access to capital and minimizing information asymmetry. According to De Franco et al. (2017), managers with more aptitude make the best use of the resources at their disposal, which enhances the main performance of the companies. Baik et al. (2018, 2020) showed that managerial ability is related to the firm's information environment and income smoothing. Therefore, it can be said that competent managers improve the company's operations. Moreover, previous studies showed that capable managers are less affected by external pressures, so they contribute less to earning management through overproduction. Izdinia et al. (2013) investigated the effect of managerial ability on the quality of profit in companies admitted to the Tehran Stock Exchange. The results of the research hypotheses test showed that managerial ability has a negative effect on the presentation of financial statements (profit and loss), as one of the criteria for earning quality. These results indicate that highly capable managers will have fewer restatement of financial statements and, as a result, higher earning quality. Furthermore, there is not enough evidence regarding the acceptance of the impact of management ability on profit sustainability as a measure of earning quality. According to Bozorgh Asl and Salehzadeh (2013), the measure of management ability is a part of the company's efficiency that is not affected by the company's intrinsic factors. A company’s human capital is classified as an intangible asset when considering management ability as one of its dimensions (Hajeb et al., 2014). Bozorgh Asl et al. (2017) investigated the relationship between management ability and investment inefficiency. According to the obtained results, management ability has an inverse relationship with investment inefficiency, and increasing management ability reduces opportunistic behaviors. Therefore, efficient and capable managers act differently from other managers to use conservatism during periods of heightened investors' sentiments (Kamiabi & Javadnia, 2021). One of the responsibilities of managers is ensuring the accuracy of financial reporting; the higher the ability of management, the higher the level of accuracy in reflecting information, which has a positive effect on the disclosure level of the company's sustainability reporting. Habib and Hasan (2017) conducted research on the danger of a stock price decline, investment efficiency, and managerial skill. The analysis of 267,154 firm-year observation from 1987 to 2012 revealed that companies with incompetent management and ineffective decision-making processes are more vulnerable to stock price declines (Moghadam et al., 2021). Also, increasing managers' ability reduces managers' opportunistic behavior, improves earning quality, and increases the information disclosure level (Zahmat Kesh et al., 2023). Internal research has emphasized management's ability to control the company's operations, but no research was conducted regarding overproduction and the impact of management's ability. The research conducted by Do et al. (2023) revealed that management ability affects technological innovation. Highly competent managers are more capable of making optimal decisions (Ghayour et al., 2022). Firms with financial distress should adjust their sales prediction early to account for declining demand and to prevent the unnecessary build-up of inventory (Ghayour et al., 2022). Salehi (2021) found a significant relationship among managerial ability and tax avoidance.

3. Hypotheses

In companies that perform better operationally, overproduction should be less common because it will result in higher costs associated with keeping inventory on hand, lower future inventory values due to obsolescence, and less cash flow available for potential investment opportunities (Cheen et al., 2005; Hendriicks & Sinnghal, 2009). Competent managers can better assess the economic situation and predict the market for product demand. Therefore, capable managers often correctly plan the optimal

production level and reduce excess manufacture. More able managers perform more effectively and make fewer operational decisions that result in overproduction. The distinction between this research and previous research is that, in this research, excessive production is not considered a tool for earnings management. Therefore, the following hypothesis is proposed:

> **Hypothesis 1:** Companies with high management ability have less production surplus than companies with low management ability

The next issue that may arise is a reversal of surplus manufacture in the coming year, which probably indicates management's engagement in earnings management. Only a small number of accounting studies have attempted to portray overproduction as an operational result as opposed to earnings management. The vast majority of prior accounting research on overproduction focuses on its use in absorption costs as a sly technique for managing profitability. If the managers of their organizations do not reverse more manufacture in the following period, high-ability managers do not use overproduction as a means of deceiving profitability (He, 2023).

> **Hypothesis 2:** Companies with more management ability are less likely to reverse overproduction during the next year

The next consideration is future sales. In companies with high management ability, it is expected that accurate future sales prediction will be made. Based on this sales prediction, they will produce a surplus this year to mitigate the risk of lack of supply and consequently, the potential of losing customers. Also, capable managers are expected to have more expertise and skills to use the company's resources to increase manufacture and sales. Therefore, the hypothesis is stated as follows:

> **Hypothesis 3:** Companies with high management ability are more likely to overproduce in anticipation of future sales growth

4. Research Methodology

In terms of its intended application, the present research is classified as applied; it is conducted to address specific needs, resolve issues, and apply the research findings promptly and directly in decision-making. Therefore, the findings of this paper can be used in other sectors as well. In terms of the method of implementation and implementation of time, this descriptive survey research is retrospective. In terms of the implementation logic, it is part of inductive research, and in terms of data, it is of quantitative research type. To collect the data for this paper, the information of the Tehran Stock Exchange Organization and other reliable sources of information, including the latest software, have been used.

In this research, the manufacturing companies listed on the Tehran Stock Exchange that entered the stock market before 2008 and were active until the end of 2023 were considered, while companies in the insurance industry, banks, and investment companies were omitted. Finally, a total of 138 companies were selected through systematic elimination method.

4.1. Research Models and Variables

The data required to calculate the regression models were extracted from the Codal System. Overproduction (OP) is computed using Roychowdhurry's (2006) model, which employs the residuals of the given average level of production (ε), as displayed in the model below (He, 2023):

$$\frac{\text{Prodit}}{\text{TAit}-1}=\alpha 0+\alpha 1\frac{1}{\text{TAit}-1}+\alpha 2\frac{\text{Salesit}}{\text{TAit}-1}+\alpha 3\frac{\Delta\text{Salesit}}{\text{TAit}-1}+\alpha 4\frac{\Delta\text{salesit}-1}{\text{TAit}-1}+\varepsilon\text{it} \quad (1)$$

Prod_{it}: production costs, the difference in total inventory plus the expense of goods sold; TA_{it-1}: total assets at the beginning of the period; Sales_{it}: sales period; ΔSales_{it}: changes sales period; $\Delta\text{Sales}_{it-1}$: sales changes at the beginning of the period; OP1: a measure of overproduction, the residuals calculated using model (1); OP2: overproduction metric, the calculated residuals using formula (2). Ghani (2010) developed Roychowdhurry's (2006) regression by adding MV and Q.

$$\frac{\text{Prodit}}{\text{TAit}-1}=\alpha 0+\alpha 1\frac{1}{\text{TAit}-1}+\alpha 2\frac{\text{Salesit}}{\text{TAit}-1}+\alpha 3\frac{\Delta\text{Salesit}}{\text{TAit}-1}+\alpha 4\frac{\Delta\text{salesit}-1}{\text{TAit}-1}+\alpha 5\text{MVit}+\alpha 6\text{Qit}+\varepsilon\text{it} \quad (2)$$

MV: market value of the company; Q: an alternative to business risk based on is calculated (He, 2023):

$$\frac{Market\ value\ of\ shareholders\ +\ total\ liabilities}{Total\ assets}$$

Nikbakht and Ghasemi (2019), utilized the data coverage analysis model of Demerjiian et al. (2012) to measure management ability (MA), where earnings from sales are the output of the variables of cost of goods sold, general and administrative expenses, while net sales property, machinery and equipment, operating lease expense, research and development cost, goodwill, and intangible assets are considered as inputs, which broadly cover management's right to choose to achieve the desired income.

Model (3) tests the first hypothesis; the dependent variable OP is the measure of overproduction. Models (1) and (2) provide errors that represent the two types of overproductions, OP_1 and OP_2. The management ability coefficient is expected to be negative if the first hypothesis is confirmed (He, 2023).

$$OPit = \beta 0 + \beta 1MAit + \beta 2Benchit + \beta 3E\,2Pit + \beta 4SegNoit + \beta 5FRit + \beta 6ABNROAit + \beta 7Sizeit + \beta 8BTMit + \beta 9Zit + \beta 10Qit + \varepsilon it \quad (3)$$

Bench variables: To control for earnings management, an indicator variable that is one if net income scaled by lagged total assets falls between 0.00 and 0.01, or if the change in net income scaled by lagged total assets is between 0.00 and 0.01; otherwise, it is 0. (SegNo): the quantity of reported business segments that are stated as a stand-in for business complexity; (Size): The natural logarithm of total assets serves as an estimate of business size. Z measure: a proxy for business risk, calculated using the Altman Z-Score = 1.2A + 1.4B + 3.3C + 0.6D + 1.0E, where: A = (working capital / total assets), B = (retained earnings / total assets), C = (earnings before interest and tax / total assets), D = (market value of equity / total liabilities), E = (sales / total assets); (FR): The fixed assets ratio, which is computed as total PPT scaled by TA, and is used to compensate for the possible impact of high fixed costs of manufacture of surplus production; (ABNROA): Abnormal return on assets to control for firm profitability, firm ROA (return on assets, calculated as income before extraordinary items scaled by lagged total assets), minus the median ROA of firms in the same year and same industry; E/P stands for earning-to-price ratio for the company; (BTM): The book value of equity scaled by the equity's market value that is provided to test the hypotheses and account for growth opportunity.

The following model tests the second hypothesis with the reverse dependent variability of excess production (REV). The indicator variable is one when more manufacture in the year (t) is increased and when overproduction in the year (t-1) is negative. According to the second hypothesis, the coefficient of management ability is expected to be negative (He, 2023).

$$REVit = \beta 0 + \beta 1MAit + \beta 2Benchit + \beta 3E2Pit + \beta 4SegNOit + \beta 5FRit + \beta 6ABNROAit + \beta 7Sizeit + \beta 8BTMit + \beta 9Zit + \beta 10Qit + \varepsilon it \quad (4)$$

The third hypothesis was verified using the model that follows, which pertains to the sale of total assets in the subsequent year. The third hypothesis, predicts an increased coefficient in the MA*OP term, suggesting that companies with excellent managerial abilities are more inclined to overproduce to meet future sales demand (He, 2023).

$$FSalesit = \beta 0 + \beta 1MAit + \beta 2OPit + \beta 3MA*OPit + \beta 4Benchit + \beta 5E2Pit + \beta 6SegNOit + \beta 7FRit + \beta 8ABNROAit + \beta 9Sizeit + \beta 10BTMit + \beta 11Zit + \beta 12Qit + \varepsilon it \quad (5)$$

5. Research Findings

Together with the number of observations for the 2,070 company years and all the data from the three hypotheses tests, Table (1) provides descriptive statistics of the variables utilized in the hypothesis testing. The study variables' mean, standard deviation, median, skewness, and kurtosis are displayed in Table (1) of the hypothesis testing. These statistics are the most used indicators of descriptive statistics. To eliminate the impact of outlier data, the Winsorising technique was used.

According to the results of Table (1), the mean management ability for the sample companies is 0.499, which indicates the use of 50% of ability managers in the sample companies. The mean future sales (Fsales) is 0.902, which indicates that managers pay attention to sales prediction. Also, the mean

profit on the price of the investigated companies is 11%, which confirms that the companies had a profit equal to 11 hundred Rials per Rial of the company's value.

Table 1. Descriptive Statistics of Research Variables

Variables	MEAN	STD.DEV	MEDIAN	SKE	KUR
OP1	-0.000	0.158	0.016	-0.386	2.570
OP2	-0.001	0.153	0.007	-0.209	2.576
REV	-0.105	0.752	-0.597	1.001	2.161
FSALES	0.902	0.445	0.802	0.954	3.234
MA	0.499	0.273	0.499	0.000	1.652
E/P	0.111	0.098	0.103	0.200	2.391
FR	0.262	0.183	0.217	1.278	6.047
ABNROA	-0.013	0.167	-0.039	1.101	5.446
SIZE	6.170	0.715	6.098	0.788	4.288
BTM	0.500	0.353	0.417	0.939	3.071
Z	4.388	2.969	3.302	1.003	2.749
Q	2.044	1.333	1.525	1.720	5.093

The mean book value of the owners of the investigated companies' shares on their market value is 0.50, suggesting that the mean of the investigated companies has a 50% return on equity. The value of the Bench statistic is an indicator variable in which the value of 1 is 1817 out of 2070 years of the company, and the value of 0 is 253.

The test results of models (1) and (2) that were implemented to obtain OP1 and OP2 values are shown in Table (3). Table (3) illustrates the estimated coefficients and the significance level of the coefficients. The two overproduction criteria, (1) and (2), set the basis for all subsequent test results. The results in Table (4) show that, according to the value of Fisher's statistic (24.71) and its significance level (0.003), the regression model is generally significant.

Table 2. Descriptive Statistics of Bench Bivariate Variable

Value	Count	Percent
0	1817	87.78
1	253	12.22
Total	2070	100

Table 3. Estimated Coefficients of Models (1) and (2)

Variables	EQN(1)	Sig	EQN(2)	Sig
Intercept	0.110	0.000	0.044	0.560
$1/TA_{it-1}$	6558.9	0.020	12510	0.005
$Sales_{it}/TA_{it-1}$	0.655	0.000	0.596	0.000
$\Delta Sales_{it}/TA_{it-1}$	0.566	0.006	0.114	0.000
$\Delta Sales_{it-1}/TA_{it-1}$	0.079	0.000	0.113	0.000
MV_{it}	-	-	0.020	0.129
Q_{it}	-	-	-0.009	0.185

Moreover, according to the value of Fisher's statistic (3.10), the significance level (0.000) of Chow's test, the value of chi-square statistic (12.64), and the significance level (0.179) of Hausman's test, random effects model was used for the model. The results of the VIF show that, considering that all the explanatory variables in Table (4) have a VIF value of less than 9, collinearity among the explanatory variables in the model is not problematic. Also, according to the Wiggins and Poi test results, the statistic value is 374.72, with a significance level of 0.000. The results of the Wooldridge test, whose statistic value is 3.850 and the significance level is 0.051, respectively. These results indicate issues with heterogeneity of variance and the autocorrelation of errors in the model. The generalized least squares (GLS) approach was used to solve these two problems. According to the results in Table (4), in which the MA variable coefficient is -0.144, with a significance level of 0.000, the first hypothesis suggesting that companies with high management abilities have less manufacture surplus than companies with low management abilities, is confirmed.

Table 4. Final Results of the First Hypothesis

Variables	coefficient	Std. err	Sig	VIF
MA	-0.144	0.037	0.000	3.46
Bench	0.080	0.038	0.038	1.19
E/P	0.193	0.123	0.117	3.10
FR	-0.069	0.056	0.217	2.89
ABNROA	-0.018	0.066	0.777	1.40
Size	0.088	0.082	0.287	1.83
BTM	-0.016	0.036	0.648	4.02
Z	-0.006	0.005	0.225	1.22
Q	0.007	0.011	0.519	3.32
Chow test	F			3.10
	Sig			0.000
Hausman test	Chi2			12.64
	Sig			0.179
Wiggins and Poi	LR chi2			374.72
	Sig			0.000
Wooldridge	F			3.850
	Sig			0.051
Wald	Chi2			24.71
	Sig			0.003

Table (5) shows the Fisher statistic value of the model as 22.58 and its significance level as 0.007. Therefore, the regression model is generally significant. Also, according to these results, the value of Fisher's statistic (0.70) and the significance level (0.996) of Chow's test show that the model is pooled.

According to the VIF, considering that all the explanatory variables in table (5) have a VIF value of less than 9, collinearity between the explanatory variables in the model is not problematic. Also, according to the Wiggins and Poi test results, the statistical value (267.45) and the significance level (0.000) of the problem model have heterogeneity of variance.

The results of the Wooldridge test, with a statistical value of 53.543 and the significance level of 0.000, indicate that the model has an autocorrelation problem of the errors. To address these problems, the generalized least square (GLS) approach was used.

Table (5) indicates that the second study hypothesis, asserting that enterprises with high managerial abilities are less likely to reverse production excess in the following year, has been verified. In the case, the coefficient for the MA variable is -0.413, with a significance level of 0.50.

Table 5. Final Results of the Second Hypothesis

Variables	Coefficient	Std. err	Sig	VIF
MA	-0.413	0.210	0.050	3.89
Bench	-0.093	0.184	0.611	1.18
E/P	1.071	0.468	0.022	1.99
FR	-0.297	0.259	0.252	3.05
ABNROA	-0.420	0.553	0.447	1.55
Size	0.068	0.113	0.544	8.18
BTM	0.214	0.139	0.122	2.92
Z	-0.020	0.010	0.038	3.75
Q	0.111	0.035	0.002	3.71
Chow test	F		0.70	
	Sig		0.996	
Wiggins & Poi	F		267.45	
	Sig		0.000	
Wooldridge	F		53.543	
	Sig		0.000	
Wald	Chi2		22.58	
	Sig		0.007	

The results from table (6) show the value of Fisher's statistic (26.53) and its significance level (0.005), indicating that the regression model is generally significant. Also, according to Chow's test with Fisher's statistic value of 34.25, with a significance level of 0.000, and Hausman's chi-square

statistic value of 17.17, with a significance level of 0.103, the random effects model was used for the model. Furthermore, according to the Wiggins and Poi test results, the statistic value is 1393.70, with a significance level of 0.000.

The results of the Wooldridge test, whose statistic value is 173.317, with a significance level of 0.000, indicate the problem of heterogeneity of variance and an autocorrelation of residuals in the model. To address the problem of variance heterogeneity and autocorrelation of errors, the generalized least square (GLS) approach was used.

The VIF findings indicate that there is no issue with collinearity among the model's explanatory variables because each of the explanatory variables in Table (6) has a VIF value of less than 9.

Table 6. Final Results of the Third Hypothesis

Variables	coefficient	Std. err	Sig	VIF
MA	0.070	0.080	0.385	3.60
OP	-0.058	0.299	0.846	5.67
MA*OP	1.360	0.675	0.044	5.17
Bench	0.077	0.047	0.104	1.19
E/P	0.737	0.288	0.011	3.59
FR	0.055	0.148	0.708	2.73
ABNROA	-0.043	0.158	0.782	1.70
SIZE	-0.122	0.150	0.416	2.01
BTM	-0.114	0.072	0.115	4.11
Z	0.014	0.011	0.233	5.99
Q	-0.005	0.002	0.075	2.48
Chow test	F		34.25	
	Sig		0.000	
Hausman test	LR chi2		17.17	
	Sig		0.103	
Wiggins & Poi	F		1393.70	
	Sig		0.000	
Wooldridge	F		173.317	
	Sig		0.000	
Wald	Chi2		26.53	
	Sig		0.005	

The third study hypothesis, which states that organizations with high management abilities are more likely to overproduce in order to predict growth of sales in the future, is supported by the data in Table (6). The MA*OP variable coefficient in this case is (1.360), with a significance level of 0.044.

6. Conclusion

The purpose of this research is to assess the effect of management ability on overproduction and sales prediction. In this paper, by using two models and estimating their residuals as overproduction and the measure of management ability, the findings obtained from Demarjian et al. (2012) have been used to investigate the impact of management ability. The results showed that management ability has a significant negative effect on increased manufacturing. Capable managers, who use the company's resources optimally and have a high level of management ability, reduce overproduction, and overproduction will not be used as a tool for earnings management to show more profit in the current year. The reversal of overproduction is negatively and significantly impacted by management ability. In other words, if capable managers overproduce, the probability of overproduction reversal in the next year will be lower. Sales prediction is positively and significantly affected by management ability. The greater the management’s knowledge and awareness of the industry in which the company operates, the more accurate the prediction of the company's future sales. If high-performing management overproduces, it can signal increased future sales. Therefore, the results of this research showed that overproduction and sales predictions are affected by management ability. The present study's findings coincide with those of He (2023) and Banker et al. (2019), who showed that capable managers may effectively enhance the operational performance of their companies. This research contradicts the results of Roychowdhurry's (2006), which states that overproduction is a tool for real earnings management. The results of this paper will also be significant for company managers so that

they can use their ability to avoid overproduction of inventory and prediction sales. Therefore, the results of this research can be used for groups such as company managers, shareholders, investors, creditors, and financial analysts. It is suggested that the topic of this research should be implemented on the separation of industries in listed and non-listed companies. Investigations can also be conducted into how management skill affects future operating cash flows and managers' acts of fraud.

This article demonstrated how managerial skill has a positive and significant impact on predicated sales, as well as an inverse and significant impact on surplus production and its reversal in the next year. This conclusion is important for board members and shareholders when evaluating the expenses and interests of managers. This is because managerial ability affects not only the company's performance, but also investors and financial analysts when making decisions about buying and evaluating companies' shares; it can be helpful to assess the ability of managers as well as evaluating the features of the company to check the quality of earnings. Also, the results of this paper can be valuable for managers of the Tehran Stock Exchange. By analyzing the factors affecting the ability of management in companies and working on these factors, they can improve the ability of management and avoid significant losses in the company by making right decisions.

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