

## Managerial Ability, Earnings Quality, and Future Performance

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### ABSTRACT

This paper investigates Algeria's main export volatility drivers via a regression model. The methodology involves the construction and estimation of an econometric model. In this model, the annual time series from 1992 to 2016 is used to estimate the impact of export structure and product concentration on the size of export volatility. The results reveal that export volatility in Algeria is high, and this is due to the growing percentage of consumer and raw material exports. The increasing size of exports is also an essential determinant of volatility. The findings indicate a need to reduce the reliance on primary exports while policymakers should diversify the export basket to reduce export volatility.

**Keywords:** Export volatility, Exports composition, Exports product concentration.

### 1. Introduction

Over the past decade, investors have become increasingly interested in the quality of earnings after many international companies reported unconfirmed and discontinuous returns in their annual reports. Investors have become more cautious while looking at the net profit figure, as the concept of earnings quality is considered confusing, and accounting thoughts do not provide a comprehensive definition (Givoly et al., 2010; Saad, 2015). Many parties rely on the quality of earnings in the decision-making process. Lenders rely on the quality of earnings in making credit decisions. Shareholders view earnings quality as an indicator reflecting top management performance and the reward-granting process. Meanwhile, investors rely on the quality of earnings to evaluate their investments, with current earnings having a predictive ability to sustain future earnings (Chan et al., 2008).

The items of accruals in earnings reflect their level of quality. Ahmed (2012) showed that a decline in earnings accompanied by lower accruals indicates an improvement in the quality of earnings. The quality of earnings increases through the relationship between cash flows and companies' earnings. The increases in cash flow from earnings, compared to accruals, represent an improvement in the quality of earnings (Altamuro and Beatty, 2006; Nour and Al Awwawde, 2017). Earnings quality is, therefore, a good indicator of current and future operational performance (Dechow and Schrand, 2004; Demerjian et al., 2013). The quality of earnings contributes to an increase in investment efficiency and borrowing. Thus, it helps users of financial statements evaluate companies' performance and make good decisions using available economic resources (Ali, 2014). Companies often depend on earnings management practices to achieve the desired objectives according to

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the expectations of their management. Local and international research shows that executives in public shareholding companies have a strong incentive to use earnings management practices that limit the quality of companies' earnings to issue shares, avoid losses, and meet future earnings expectations (Burgstahler and Dichev 1997; Teoh et al., 1998).

Company practices in earnings management and their relationship to earnings quality have greatly increased researchers' interest in studying their advantages and disadvantages (Zang, 2012; Zhao et al., 2016). Empirical studies have shown that executives with managerial ability can provide more accurate forecasts of future performance and future earning ability reporting (Baik et al., 2011; Demerjian et al., 2013). This raises the question of whether managers with high managerial ability use earnings management to gain these benefits. Demerjian et al. (2013) highlighted that the relationship between the managerial ability of managers and the quality of earnings is unclear. Baik et al. (2011) noted a positive relationship between executives' abilities and the likelihood of frequent earnings expectations. They also provided empirical evidence showing that executives with high managerial ability send more information to the market than low-performing executives. However, earnings expectations do not necessarily increase the quality of earnings. A positive relationship between top managerial ability and earnings quality has emerged due to executives enjoying an increased level of earnings quality (Demerjian et al., 2012; Salehi et al., 2014).

Hence, researchers face the question of whether there is a relationship between the managerial ability of executives and the quality of accounting earnings in capital markets outside the United States. Dechow et al. (2010) stated a significant difference between countries in determining the determinants of the quality of accounting earnings, such as legal systems and financial legislation. Managerial abilities are arguably among the vital human resources skills that affect the company's performance.

Scarce resources, such as the manager's capabilities, increase the importance of skilled human resources in emerging markets. It enhances corporate productivity by using skilled human resources to achieve competitive advantages and sustainable success in the market (Bhutta et al., 2021). Tran and Vo (2020) also emphasized that human capital plays an important role in achieving sustainable performance, particularly in emerging markets.

Several studies have linked the relationship between managerial ability, profit quality, and the company's future performance in the context of developed countries. However, it is difficult to generalize such results at the level of emerging markets due to the specificity of these markets, the weakness of investor protection systems, and weak corporate governance systems. This increases the possibility of using these practices for opportunistic purposes (Baik et al., 2012; Hesarzadeh, 2020; Cahan et al., 2008; Eissa and Hashad, 2021).

Chuah and Foong (2019) concluded that overall managerial ability plays an important role in a company's performance. They also pointed out that the local administrative experience and the environment in which decisions are taken independently improve the relationship between managerial ability and performance significantly. In addition, Andreou et al. (2013) suggested managerial ability is more beneficial for financially constrained companies in a constrained environment, as is the case in emerging markets. However, an analysis of the literature indicates that the relationship between managerial ability and future performance is relatively under investigation in West Asia, particularly in Jordan.

This raises the question of whether the managerial ability of executives impacts the quality of accounting earnings in the Jordanian work environment. The objective of this study is to show the relationship between the managerial ability of executives and the quality of earnings in Jordanian public shareholding companies, which is shown in the first part of the study. The second part

describes the theoretical framework and the derivation of the study hypotheses. The third part deals with the study data and measuring variables, while the fourth describes the study's design. The fifth part contains an analysis of the study's results, the sixth consists of analyzing the results using alternative measures, and the final part presents the conclusion.

## **2. Motivation and Hypothesis Development**

### **2.1 Earnings Quality**

According to Dechow et al. (2010), earnings are considered high quality if they provide more information about the company's financial performance. Generally, earnings quality refers to a company's future earnings and cash flows earnings and cash flows of a company (Chen et al., 2007; Gaio and Raposo, 2011). The quality of earnings also represents the disclosed earnings ability in expressing the performance of the economic unit, the earning ability of future periods, and its current forecasting of future performance. Hence, the quality of earnings is a good indicator of operational performance and an effective measure of economic unity (Ali, 2014).

The higher the earnings, the higher the level of earnings quality. Earning ability refers to the extent to which the current earnings are related to the future performance by dividing earnings into cash flows and accruals (Hamdan, 2012). A high level of cash flows also indicates an increase in the accuracy of judgments and estimates and, accordingly, an increase in earnings quality (Ahmed, 2012). Earnings with a decrease in cash flows and an increase in accruals indicate a low accuracy of judgments and estimates and, therefore, a decrease in the accuracy of the calculation of earnings, resulting in low quality of earnings. This low quality leads to weak future returns, while the quality of earnings indicates the earning ability revealed by the statement of the company's real earnings and forecasted future performance (Hamdan et al., 2012). The quality of earnings can be measured by the extent to which earnings are free from earnings

management practices, depending on the measurement of accruals to determine whether there is a manipulation of earnings. If earnings are free of manipulation, this indicates that they have not been circumvented; thereby, the quality of earnings will be enhanced. The measurement used was discussed in the 'variable measurement' section, where the quality of earnings is discussed.

### **2.2 Managerial Ability and Earnings Quality**

The executive's managerial ability indicates the executive's visibility in the company's performance (Demerjian et al., 2012). According to Andreou et al. (2016), the managerial ability of executives can be measured by focusing on the executive's ability and ignoring the top management team. Managers with higher abilities are more knowledgeable about their business, making better judgments and estimates of product demand and achieving a better understanding of technology, industry trends, and efficient human resource management (Demerjian et al., 2013). Therefore, companies whose executives have managerial abilities are expected to align their resources well with the environment in a way that increases earning ability, which is very important in the case of growth opportunities (Andreou et al., 2017). Therefore, we believe that the high managerial ability of executives can act as a guarantee, improving the company's image in outside markets and thus reducing the cost of capital that can result from the issue of low information quality between insiders and other stakeholders (Chemmanur and Paeglis, 2005; Duffie et al., 2002). This gives executives the ability to resolve better agency issues (Chemmanur et al., 2009).

In the context of our projections, the results of García-Meca and García-Sánchez (2017) confirmed that the managerial abilities of executives play an important role in the quality of earnings and that executives with high managerial capacity are less likely to exercise earnings management. Sales et al. (2015) concluded a positive relationship between executives' managerial ability and earnings quality. The

results of the study conducted by Dastgir and Rezaie (2014) showed a significant negative relationship between executive ability, the error rate in earning expectations by managers, and enhanced ability on the part of managers to increase efficiency.

Elshafie et al. (2010) conducted a study on the methods used by investors in managing earnings, concluding that executives use earnings management to achieve targeted earnings. They also found a negative relationship between managerial ability and earnings management through accruals. In the context of the relationship between managers' managerial ability and earnings quality, Demerjian et al. (2013) stated that earnings quality is positively related to the managerial ability of executives. More specifically, executives with higher abilities were associated with high-quality accruals estimates. Moreover, the study by Bourkhis and Najar (2017) showed that good management improves the quality of earnings disclosure by limiting earnings management practices. Francis et al. (2008) examined the relationship between managers' managerial ability and earnings quality. Contrary to expectations, the results showed an inverse relationship between managers' managerial ability and earnings quality. However, this is due to the complexity and volatility of the company's operational environment, not the executives' managerial ability. In light of the above, we believe that high-quality executives produce higher-quality earnings reports; hence, the following hypothesis is formulated:

H1: There is a positive relationship between executives' managerial ability and earnings quality.

The managerial ability of executives constitutes an important focus of a company's various activities, especially about the company's growth in size, the complexity of its business, the diversity of its interrelationships, and the external environmental effect (Chatterjee and Hambrick, 2011). The management plays a pivotal role in the company's success or failure to

achieve its objectives. The success or failure of a company is not due to its limited resources or capabilities; but mainly due to the nature of management and the management style applied to it (Pfeffer and Sutton, 2006). Efficiency and effectiveness compensate for the lack of resources and abilities of successful management by ensuring the best use of the company's limited resources, guiding the company's to areas that have the greatest material and moral returns, and achieving the goals of the company using the most efficient and effective means (Ayed, 2010). It is also expected that highly qualified managers will have more social resources and the ability to learn well and, at the same time, have a high capacity for data analysis (Al-Akra et al., 2010). This can be used flexibly to support the professional judgments made in adjusting earnings. High-level executives are expected to understand the state of companies and industries better and integrate internal and external information to form a reliable estimate of future enterprise development (Zhao et al., 2016). Carmeli and Tishler (2006) and Herianti et al. (2021) found that highly skilled managers affect future performance.

Demerjian et al. (2012) found that managers with the highest abilities, compared to managers with lower abilities, have a better expectation of business opportunities, make better decisions, and manage their companies better to maximize shareholders' benefits. The study by Najar (2017) also showed that state-owned banks have the less predictable and less earning ability. Moreover, non-state Islamic banks in the MENA (the Middle East and North Africa) region seem to enjoy higher earning ability and predictability of cash flows than their conventional counterparts. In the context of our expectations, Chemmanur et al. (2009) confirmed that highly reputable executives are more able to choose successful and profitable projects for the future. Considering the discussion above, we believe that high-level executives can build accurate forecasts of future performance and implement strategies more effectively.

Accordingly, the second hypothesis is formulated as follows:

H2: There is a positive relationship between managerial ability and future performance.

We believe high-performing executives can manage earnings to maximize their wealth (Demerjian et al., 2015; Sun, 2016; Gunny, 2010). Earnings management practices are complex tasks that require high-level skills. Thus, executives must be able to predict future performance for the company, and, in light of their expectations, earnings management is practiced, which limits the quality of earnings. Baik et al. (2011) asserted that high-performing executives are more able to predict future performance and thus determine the direction in which earnings management practices can be conducted. In the same context, Demerjian et al. (2017) stated that high-performing executives can estimate the expected reduction before it occurs by implementing strategies more effectively than lower-performing executives.

Accordingly, we expect executives to conduct earnings management practices that will reduce the quality of accounting earnings to gain future performance by exploiting their knowledge of the operational environment and the weak capacity of the legal and regulatory environment to restrict their freedom of business within the companies they manage (Mohamed, 2017; Roychowdhury, 2006; Huang & Sun, 2017; Hessian, 2019). High-performing executives are more familiar with their business, know their client base, and can better predict future performance and understand the complex legal and regulatory environments. All of this enables them to manage earnings management practices successfully. For example, high-performing executives conduct earnings management practices by managing accounts accruals that they believe they can cover in the future by accelerating revenues if they feel there is an increase in revenues for the subsequent period (Demerjian et al., 2013).

High-performing managers are likely to avoid earnings management practices because they consider

their management reputation (Demerjian et al., 2012). High-quality earnings allow creditors to anticipate future performance, resulting in a more accurate probability of valuation, lower debt prices, flexible contracting, and reduced restrictions on pledges or guarantees (Chen et al., 2002; Francis et al., 2016; Luchs et al., 2009). Taking into account the above discussion, we expect that high-performing executives may be more capable of exercising earnings management, which reflects negatively on earnings quality in future performance. Accordingly, the third hypothesis is formulated as follows:

H3: There is a negative relationship between the quality of earnings and the future performance of companies with high-performing executives.

### 3. Data and Variables Measurement

The data was collected through the annual financial reports available on the Amman Stock Exchange website (ASE). To test the relationship between the managerial ability of executives and the quality of earnings of non-financial companies listed on the ASE, data were extracted to measure the managerial ability of executives, the quality of earnings, and future performance, in addition to the control variables. Researchers in previous studies (Baik et al., 2011; Demerjian et al., 2012, 2013, 2017) have also used models to measure the managerial ability of executives through residuals. Such a model was used by Baik et al. (2011) to measure the managerial ability of executives through average returns on assets. Models were used by Zalloum (2015, 2016) to measure the quality of earnings through accruals. Demerjian et al. (2017) used models to measure future performance, while Demerjian et al. (2017), Zalloum (2015), Dastgir and Rezaie (2014), and Baik et al. (2011) used models for measuring control variables.

We used a sample containing annual financial information for companies for the period 2002–2015. The period started in 2002 because 1998 was the year in which

ASE issued disclosure instructions, accounting standards, and auditing standards, according to which companies were required to disclose financial statements by international accounting and reporting standards. Some variables require data for the previous four years. The sample ends in 2015 because the future performance variable needs at least one year of future data. All companies in the financial sector are excluded because they have different capital structures and legislation. Data for companies that have been merged or acquired are also excluded because these processes may affect the executives' managerial ability metrics and earnings quality measures. Companies' data for years before listing on the ASE are also excluded. Thus, the study sample consisted of 1164 observations out of 1764 observations.

All companies belonging to the financial sector have been excluded because they have different capital structures, in addition to the existence of their legislations, the financial sector's own rules of accounting practices, and what it includes from a wide range of risks such as liquidity risks, operational and credit risks, solvency and market risks.

### 3.1 Variable Measurement

#### 3.1.1 Managerial Ability Measurement

The ability of executives to assess changes in the economic expectations of their companies is measured using two measures of the executives' ability, and they are presented as follows:

##### *Managerial Ability Score (MA-Score)*

The measure presented by Demerjian et al. (2012) relies on the managerial efficiency of executives in optimizing the company's resources in generating revenue compared to peers in the same industry. The degree of managerial ability is estimated in two phases.

In the first phase, Demerjian et al. (2012) used Data Envelopment Analysis (DEA) to measure a company's total efficiency by exploiting its resources to generate revenues compared to other companies within the industry through the characteristics of the company. More specifically, we

compare the outputs generated by each company as outputs divided by inputs according to the following equation:

$$Max_{v0} = \frac{Sales}{v1^{COGS} + v2^{SGA} + v3^{PPE} + v4^{OL} + \frac{1}{v5^{RD} + v6^{GW} + v7^{OT}}} \quad (1)$$

where Sales is the sales extracted from the income statement for year  $t$ , COGS is the cost of goods sold extracted from the income statement for year  $t$ , SGA is selling and administrative expenses extracted from the income statement for year  $t$ , PPE is net property plant and equipment extracted from the statement of financial position at the beginning of year  $t$ , OL is the net operating lease at the beginning of year  $t$ , for which Demerjian et al. (2012) used the present value discounted at a rate of 10% for the next five years of the operating lease payments, R&D is the net research and development expenses at the beginning of year  $t$ , GW is goodwill, and OT is other factors. The calculation method used by Demerjian et al. (2012) is applied only to development expenses with Accounting Standard 38 (Intangible Assets) by International Accounting Standards. It considers only development costs as capital expenses, so the research expenses were extracted from the income statement, and development costs were calculated according to the following equation:

$$D_{cap} = XD_t + 0.8XD_{t-1} + 0.6XD_{t-2} + 0.4XD_{t-3} + 0.2XD_{t-4} \quad (2)$$

where  $D_{cap}$  is an investment in the development field, and  $XD$  is the amount invested in development.

Goodwill is purchased goodwill extracted from the statement of financial position at the beginning of year  $t$ .

OtherIntan is other intangible assets extracted from the statement of financial position at the beginning of year  $t$ .

Since the main objective of the company is to produce

sales, where the cost of production is borne by the seven inputs mentioned above, the most successful companies are the companies that produce the highest sales at the lowest cost (Baik et al., 2011; Demerjian et al., 2013).

DEA is a non-scientific method that uses many outputs and inputs to measure the efficiency of decision-making units. Demerjian et al. (2012) showed that according to DEA, the total efficiency limits of linear programming are between 0 and 1, where 1 represents the most efficient and 0 represents the least efficient.

In the second phase, we use the Tobit regression model by industry to determine the managerial ability of executives. The total efficiency ratio calculated in the first stage is attributed to the company and the management. In determining the managerial ability of executives, the key characteristics identified at the company level that are expected to assist or hinder managerial ability are excluded. Demerjian et al. (2012) determined firm size, market share, positive free cash flow, and firm age characteristics. Furthermore, characteristics that hinder management efforts are excluded, such as business segment concentration, foreign currency indicator, and year indicators. The remainder of the estimate is the degree of managerial ability of the executives (MA-Score), which is based on the measurement of the managerial ability of the executives, according to the Tobit regression model:

$$\begin{aligned} \text{Firm Efficiency} = & \alpha_0 + \alpha_1 \text{Ln}(\text{size}) + \alpha_2 \text{MS} + \alpha_3 \text{FCF} \\ & + \alpha_4 \text{Ln}(\text{Age}) + \alpha_5 \text{HHI} \\ & + \alpha_6 \text{FCI} + \text{Year} + \varepsilon \end{aligned} \quad (4)$$

where:

Firm Efficiency is the estimated total efficiency of the first stage using DEA.

Ln(size) is the company's size measured as the natural logarithm of the company's total assets for the year  $t$ .

MS is market share, measured as the ratio of the company's sales to the industry's total sales for the year  $t$ .

FCF is free cash flow, a dummy variable that takes the

value of 0 when free cash flows are negative, and the value of 1 is otherwise; free cash flow is defined as earnings before depreciation and amortization minus the change in working capital minus capital expenditures for the year  $t$ .

Ln(Age) is the company's age, measured as the natural logarithm of the number of years from the date of listing on the stock exchange until the year  $t$ .

HHI is business segment concentration, calculated by collecting the sales of companies in the market according to the following equation:

$$\text{HHI} = \sum_i^n \left[ \frac{S_i}{S} \right]^2 \quad (3)$$

where  $S_i$  = company sales volume,  $S$  = total industry sales, and  $n$  = number of manufacturing companies<sup>1</sup>.

FCI is the foreign currency indicator, a dummy variable that takes the value of 1 when foreign currency translation is positive and the value of 0 when it is otherwise.  $t$  is the year indicator.

The residual is the unexplained value of the Tobit regression model, which represents the degree of the managerial ability of executives (MA-Score). Several studies have used this measure, including Baik et al. (2011), Chen et al. (2015), Demerjian et al. (2013, 2017), Krishnan and Wang (2015), and Wang et al. (2017).

Although Demerjian et al. (2012) identified MA-Score as a key measure of managerial ability, this indicator has a potential problem. For example, the sales and the cost of goods sold, which represent input into the DEA estimate in the first phase, can be measured differently in different componential errors. In addition, the information related to R&D is not available in most samples, nor is the data required to calculate FCF in the second phase. This is consistent with the study of Demerjian et al. (2013), and it leads us to use an

<sup>1</sup> The study used the Herfindahl-Hirschman Index which was used by (Kang et al., 2011) as a measure of Business Segment Concentration.

alternative measure to estimate the managerial ability of executives represented by the rate of return on assets adjusted by the industry.

*Industry-adjusted rate of return on assets*

For the industry-adjusted rate of return on assets (industry-adjusted return on assets), we use the scale provided by Rajgopal et al. (2006). They used the industry-adjusted rate of return on assets for three years before a given executive for each company. It is calculated according to the following equation:

$$\text{IndAdjROA}_t = \text{ROA}_t - \text{averageROA}_t \quad (5)$$

where  $\text{IndAdjROA}_t$  is the industry-adjusted rate of return on assets for year  $t$ ,  $\text{ROA}_t$  is the return on assets which represents operating income after depreciation divided by the average total assets for year  $t$ ,  $\text{averageROA}_t$  is the average return on assets for all companies belonging to the same industry so that the number of observations is not less than 10 for year  $t$  (industry observations of less than 10 for year  $t$  were deleted).

This approach has been used in many studies (e.g., Baik et al., 2011; Francis et al., 2008). The measure indicates that the higher the rate of return on assets adjusted by the industry, the higher the executives' efficiency.

**3.1.2 Earnings Quality Measures**

To measure the quality of the dividends expressed by the quality of the accruals, we use the modified Jones model after adding net income to the model of Kothari et al. (2016). The quality of the accruals is the counterpart of the quality of the earnings. The quality of the accruals reflects the deliberate manipulation of the financial reports to achieve management's interests, which reflects negatively on the quality of accounting earnings (Zalloum, 2016). Executives' performance is based on the expectations when they are given their jobs. If the forecasts are fulfilled, this indicates that the forecasters are highly skilled and efficient, thus enhancing the ratings of managers and raising their economic position (Rudra and Bhattacharjee, 2012). If

executives cannot reach the specified targets, they may seek to manipulate financial reports by recording fake revenue or delaying the recognition of expenses (Apergis et al., 2012). We measure the quality of earnings after adding a firm and year fixed effects to the modified Jones model, according to Demerjian et al. (2017), through several stages.

The first step is estimating the parameters of the model ( $\beta_1, \beta_2, \beta_3, \beta_4$ ) through multiple regression analysis in the following regression model:

$$\frac{\text{TACC}_t}{A_{t-1}} = \beta + \beta_1 \frac{1}{A_{t-1}} + \beta_2 \frac{\Delta\text{REV}_t - \Delta\text{REC}_t}{A_{t-1}} + \beta_3 \frac{\text{PPE}_t}{A_{t-1}} + \beta_4 \frac{\text{NetInc}_t}{A_{t-1}} + \text{yearFixed} + \text{firmFixed} + \varepsilon_t \quad (6)$$

where:

$\text{TACC}_t$  is the total accruals for year  $t$  (total accruals represent the difference between operating income after depreciation and cash flow operations).

$A_{t-1}$  is the total assets for the year  $t-1$ .

$\Delta\text{REV}_t$  is the change in revenues for year  $t$ .

$\Delta\text{REC}_t$  is the change in net receivables for year  $t$ .

$\text{PPE}_t$  is the gross property plant and equipment for year  $t$ .

$\text{NetInc}_t$  is the operating income after depreciation for the year  $t$ .

The second step is the measurement of non-optional (ordinary) accruals using the expected  $\beta_1, \beta_2, \beta_3,$  and  $\beta_4$ , extracted in the previous equation as follows:

$$\text{NDACC}_t = \beta_1 \frac{1}{A_{t-1}} + \beta_2 \frac{\Delta\text{REV}_t - \Delta\text{REC}_t}{A_{t-1}} + \beta_3 \frac{\text{PPE}_t}{A_{t-1}} + \beta_4 \frac{\text{NetInc}_t}{A_{t-1}} \quad (7)$$

where  $\text{NDACC}_t$  is the non-discretionary accruals for year  $t$ .

The third stage, following the measurement of total accruals and nondiscretionary accruals, is to extract the value of discretionary accruals by the difference between total and nondiscretionary accruals by the following equation:

$$\text{DACC}_t = \text{TACC}_t - \text{NDACC}_t \quad (8)$$

where  $\text{DACC}_t$  is the discretionary accruals for year  $t$ .

The value is then multiplied by -1 so that a high value indicates a high quality of earnings (EQ). The natural logarithm of the optional entitlements is also taken. To study this variable, accounting studies have used the natural logarithm (Zalloum, 2016). In the fifth step, we also consider alternative earnings quality measures.

#### 4. Research Design

The panel data approach that contains time series and cross-sectional data was used to measure the study hypotheses, and then random errors were diagnosed through the Correlation matrix test to detect the multiple linear correlation problem, the Wooldridge test for autocorrelation

to detect the autocorrelation problem, and the Breusch-Pagan / Cook-Weisberg test for heteroskedasticity to detect the heteroskedasticity problem. It was shown that the models suffer from problems of autocorrelation and heteroscedasticity. For this, the chosen model was re-estimated using the (Panel corrected standard errors) (PCSE) method that considers these problems.

#### 4.1 Conceptual Research Model

The conceptual study clarifies the relationship between managerial ability and earnings quality of non-financial companies listed on the Amman Stock Exchange (ASE).

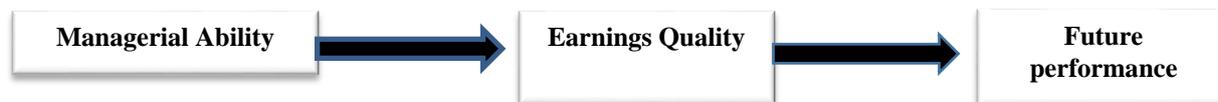


Figure 1: Conceptual Research Model

#### 4.2 Empirical Models

To test hypothesis H1 that concerns the relationship between the managerial ability of managers and the quality of earnings and a set of documented control variables that are related to the quality of earnings in previous studies (Baik et al., 2011; Dastgir and Rezaie, 2014; Demerjian et al., 2013, 2017; Zalloum, 2015), we consider the following panel-corrected standard errors model (PCSE):

$$EQ_t = \alpha_0 + \alpha_1 Ability_t + \alpha_2 cons_t + \alpha_3 MV\_Gro_t + \alpha_4 EPS\_vol_t + \alpha_5 Sales\_vol_t + \alpha_6 CFO\_vol_t + \alpha_7 Ln(Indus_t) + \alpha_8 Ln(Age_t) + \alpha_9 Oper_t + \varepsilon_t \quad (9)$$

where  $EQ_t$  is the natural logarithm of the quality of the measured earnings through discretionary accruals, and Ability, as mentioned above, represents either MA-Score (based on the measurement used by Demerjian et al., 2012); or IndAdjROA (industry-adjusted return on assets).

The following control variables, which have been linked to previous studies of earnings quality, were included:

$cons_t$  is the ratio of the book value of the company's shares to the market value of the company's shares as a measure of conservatism. If the ratio is less than 1, this indicates that there is a commitment to the concept of conservatism. The results of studies by Ahmed (2012) and Hamdan (2011) found a negative relationship between conservatism and the quality of earnings, meaning that companies that are more committed to conservatism increase the quality of their earnings.

$MV\_Gro_t$  is the increase in market capitalization, representing the difference between the year-end price and the share price at the end of the previous year, giving a value of 1 if the difference is negative and 0 otherwise. Previous studies (Amat et al., 1999) determined the company's value in the market based on the price of its shares. Earnings management may be motivated to increase the market value of the company.

$EPS\_Gro_t$  is the increase in earnings per share, representing the difference between the earnings per share

at the end of the year and the earnings per share at the end of the previous year. If the difference is positive, give a value of 1 and 0 otherwise. According to Graham et al. (2005), achieving or exceeding standard earnings indicators is a management priority, where managers view earnings as an important indicator of corporate performance, being the indicator of market interest. Thus, the manipulation of earnings is likely to benefit the manager's reputation and the earning indicators.

$Sales\_vol_t$  is sales volatility, measured by the standard deviation of [sales/ average assets] over the previous four years. Previous studies have shown a positive relationship between sales volatility and earnings quality (Demerjian et al., 2013).

$CFO\_vol_t$  is cash flow operations volatility. It represents the standard deviation of [cash flow operations / average assets] over the previous four years. Dechow and Dichev (2002) and Demerjian et al. (2017) found an inverse relationship between the volatility of operational flows and the quality of earnings.

$\ln(Indus_t)$  are industries, according to the ASE. The natural logarithm of the imaginary variable for each industry has been included Zalloum (2015) demonstrated a relationship between industry type and earnings quality.

$\ln(Age_t)$  is the natural logarithm of the company's age from the date of registration on the ASE. Beneish (1999) and Carcello and Nagy (2004) indicated that companies that manipulate financial lists are those most recently listed on the stock exchange. Accordingly, we expect a positive relationship between earnings quality and the years that the company's shares have been traded on the ASE.

$Oper_t$  is the operating cycle, measured, according to Demerjian et al. (2013; 2017) by:  $[(Sales/360)/(Average\ Receivables) - (Cost\ of\ Goods\ Sold/360)/(Average\ Inventory)]$ . The results of the studies conducted by Demerjian et al. (2013) and Dechow and Dichev (2002) showed that the greater the length of the company's operational cycle, the less its earnings quality.

To test our hypothesis on the relationship between

managerial ability and future earning ability (H2), we apply the following PCSE model:

$$\begin{aligned} FutureROA_{t+1} = & \alpha_0 + \alpha_1 Ability_t + \alpha_2 const_t \\ & + \alpha_3 MV\_Gro_t + \alpha_4 EPS\_vol_t \\ & + \alpha_5 Sales\_vol_t + \alpha_5 CFO\_vol_t + \alpha_6 \ln(Indus_t) + \\ & \alpha_7 \ln(Age_t) + \alpha_8 Oper_t + \varepsilon_t \end{aligned} \quad (10)$$

A  $FutureROA_{t+1}$  measure was used to express the future performance: return on assets for the year  $t + 1$ . To test our final hypothesis (H3) regarding whether there is an inverse relationship between the quality of earnings and future performance in companies with highly qualified executives, we apply the following PCSE model:

$$\begin{aligned} FutureROA_{t+1} = & \alpha_0 + \alpha_1 Ability\_dummy_t + \alpha_2 EQ_t \\ & + \alpha_3 (Ability\_dummy_t * EQ_t) \\ & + \alpha_4 const_t + \alpha_5 MV\_Gro_t \\ & + \alpha_6 EPS\_vol_t + \alpha_7 Sales\_vol_t \\ & + \alpha_8 CFO\_vol_t + \alpha_6 \ln(Indus_t) + \\ & \alpha_9 \ln(Age_t) + \alpha_{10} Oper_t + EQ_t = \alpha_0 + \alpha_1 Ability_t + \\ & \alpha_2 const_t + \alpha_3 MV\_Gro_t + \alpha_4 EPS\_vol_t + \alpha_5 Sales\_vol_t \\ & + \alpha_6 CFO\_vol_t + \alpha_7 \ln(Indus_t) + \alpha_8 \ln(Age_t) + \\ & \alpha_9 Oper_t + \varepsilon_t \end{aligned} \quad (11)$$

For  $Ability\_dummy_t$ , the value of 1 is given if the executives are greater than the median for any of the executive director's ability measures (IndAdjROA, MA-Score), and 0 is otherwise. All other variables have been defined previously.

### Diagnostic Tests

To test the hypotheses, the quality of the models used was verified by performing the Wooldridge test for autocorrelation to detect the autocorrelation problem and the Breusch-Pagan / Cook-Weisberg test for heteroskedasticity to detect the heteroskedasticity problem. As shown in Table (1), it is clear that the models suffer from these problems, so they were re-estimated using the (Panel corrected standard errors) method to obtain consistent and unbiased estimated values that are free from the autocorrelation problem.

**Table 1. Test results: autocorrelation and homogeneity of data**

model	Autocorrelation		Heteroskedasticity	
	IndAdjROA	MA-Score	IndAdjROA	MA-Score
	Prob	Prob	Prob	Prob
H <sub>1</sub>	0.045	0.044	0.905	0.013
H <sub>2</sub>	<0.001	0.011	<0.001	<0.001
H <sub>3</sub>	<0.009	0.015	<0.001	<0.001

**4.2 Descriptive Statistics**

Table 2 below presents the descriptive statistics of the study variables. The table indicates that a positive average and mediating earnings quality means high earnings quality. The earnings are of high quality if the value of the accruals is positive. This is in line with the study done by Zalloum (2016). The table also shows that the executive’s abilities and future performance are well distributed. This is consistent with the previous studies of Baik et al. (2011) and Demerjian et al.

(2013, 2017).

Table 3 shows Spearman’s correlations between the variables used in the regression equations. We note that there is a significant statistical correlation between the measures of the executive’s abilities and both the quality of earnings and future performance, which is a positive and important correlation. This indicates that managerial ability can increase the quality of earnings and future performance.

**Table 2. Descriptive statistics**

Variable	Mean	Median	Std. Dev.	25%	75%
EQ <sub>t</sub>	20.724	20.724	0.009	20.676	20.783
FutureROA	0.007	0.030	0.257	-1.260	0.361
IndAdjROA	-0.036	-0.009	0.261	-1.761	0.353
MA-Score	0.003	0.002	0.008	<0.001	0.058
cons <sub>t</sub>	1.047	0.912	0.961	-1.417	5.882
MV_Gro <sub>t</sub>	0.590	1	0.492	0	1
EPS_Gro <sub>t</sub>	0.434	0	0.496	0	1
Sales_vol <sub>t</sub>	0.156	0.104	0.168	0	1.125
CFO_vol <sub>t</sub>	0.097	0.071	0.109	0.004	0.829
Ln(Indus <sub>t</sub> )	1.552	1.609	0.449	0.693	2.079
Ln(Age <sub>t</sub> )	1.081	1.114	0.340	0.301	1.591
Oper <sub>t</sub>	0.105	0.030	0.702	0.001	1.235

Notes: EQ<sub>t</sub> is the natural logarithm of the quality of the earnings measured through the discretionary accruals. FutureROA represents operating income after depreciation for the year *t* + 1 divided by the average total assets for the year *t* + 1. MA-Score represents a measure of managerial ability based on the scale of Demerjian et al. (2012). IndAdjROA is another measure of managerial ability that

uses the adjusted average income after depreciation divided by the adjusted average total assets in the industry for three years before a specific executive for each company. cons<sub>t</sub> is the ratio of the book value of the company's shares to the market value of the company's shares. MV\_Gro<sub>t</sub> is the difference between the price of the share at the end of the year and the price of the share at the end of the previous year

so that a value of 1 is given if the difference is negative and a value of 0 is given otherwise.  $EPS\_Gro_t$  is the difference between the earnings per share at the end of the year and the earnings per share at the end of the previous year so that a value of 1 is given if the difference is positive and the value of 0 is given otherwise.  $Sales\_vol_t$  is measured by the standard deviation of [sales / average assets] over the previous four years.  $CFO\_vol_t$  represents the standard

deviation of [cash flow operations / average assets] over the previous four years.  $Ln(Indus_t)$  is the natural logarithm of the imaginary variable of each industry.  $Ln(Age_t)$  is the natural logarithm of the company's age from the date of registration in the ASE.  $Oper_t$  is measured through  $[(Sales/360)/(Average\ Receivables) - (Cost\ of\ Goods\ Sold/360)/(Average\ Inventory)]$ .

**Table 3. Correlations between the variables used in the regression equations**

	1	2	3	4	5	6	7	8	9	10		
	$EQ_t$	FutureRO	IndAdjROA	MA-Score	$cons_t$	$MV\_Gro_t$	$EPS\_Gro_t$	$Sales\_vol_t$	$CFO\_vol_t$	$Ln(Indus_t)$	$Ln(Age_t)$	$Oper_t$
1	<b>0.068</b>	<b>0.502</b>	1.000									
2	<b>0.093</b>	<b>0.115</b>	<b>0.111</b>	1.000								
3	0.039	<b>-0.317</b>	<b>-0.160</b>	<b>-0.113</b>	1.000							
4	<b>-0.068</b>	<b>0.163</b>	<b>0.193</b>	0.055	<b>-0.277</b>	1.000						
5	-0.031	<b>0.142</b>	<b>0.185</b>	0.032	-0.018	<b>0.197</b>	1.000					
6	<b>-0.085</b>	-0.035	<b>-0.087</b>	-0.002	<b>-0.121</b>	0.028	0.037	1.000				
7	<b>-0.113</b>	<b>-0.142</b>	<b>-0.211</b>	<b>-0.098</b>	-0.016	0.014	-0.030	<b>0.419</b>	1.000			
8	<b>0.128</b>	0.033	<b>-0.146</b>	<b>-0.306</b>	<b>-0.160</b>	-0.049	0.002	-0.009	<0.001	1.000		
9	<b>0.108</b>	<b>0.074</b>	<b>0.094</b>	0.003	-0.048	0.011	-0.051	0.022	<b>0.074</b>	<b>0.081</b>	1.000	
10	<b>0.276</b>	<b>0.230</b>	<b>0.247</b>	-0.039	<b>-0.132</b>	<0.001	0.038	0.022	<b>-0.201</b>	<b>0.277</b>	<b>0.105</b>	1.000

Note: Bold indicates the significant correlation coefficients at a 10% significance level.

## 5. Empirical Results

### 5.1 Managerial Ability and Earnings Quality (H1)

Table 4 shows the results of the first hypothesis test, in which the relationship between the managers' ability and earnings quality is examined. The results show that the managerial ability of executives, with its two measures, positively affects the quality of earnings, where the p-value < 0.10. The results in the table also show that coefficient values are 1.281 and 1.241 for the managerial ability scales IndAdjROA and MA-Score, respectively. This indicates that the impact of the managerial executives' ability increases earnings quality hypothesis that the executives with the highest abilities are associated with high-quality earnings. The more effective the executives, the less likely they are to manipulate earnings.

To measure the economic importance of the role of the managerial ability of executives to increase (decrease) the quality of earnings, we estimate the change in the quality of earnings as a result of increasing the managerial ability of executives to 1 degree of standard deviation; the earnings quality increases by 33.4% ( $0.261 \times 1.281$ ) according to IndAdjROA, and by 1% ( $1.241 \times 0.008$ ) according to the MA-Score scale.

In terms of control variables, Table 4 shows that the coefficient  $cons_t$  is positive and significant, which indicates a positive relationship between the accounting reservation and the quality of earnings. This means that companies that are less committed to the accounting reservation will increase the quality of earnings. The study results are consistent with the results of Rudra and

Bhattacharjee (2012). Furthermore,  $EPS\_Gro_t$  turns out to have a negative and significant effect, indicating that the most earningable companies are working to reduce the quality of earnings, which is consistent with the results of the study by Baik et al. (2011).  $CFO\_vol_t$  is also a positive and significant factor; the increase in cash flow rates indicates that high-quality managers maintain a higher quality of earnings than other managers, as we note a significant and positive relationship between the quality

of earnings and highly qualified executives. While the results showed that the coefficient  $Ln(Indus_t)$  is positive and significant, there is a difference in the quality of earnings between company affiliations to different industries. The  $Ln(Age_t)$  coefficient shows a positive and significant impact. The results show an improvement in the quality of earnings as the size of the company increases. This is in line with Demerjian et al.'s (2013,

**Table 4. Results of the multiple regression analysis of the effect of the managerial ability of executives results on the quality of earnings measured by accruals**

Variable	Dependent variable: Earnings quality			
	IndAdjROA		MA-Score	
	Coef.	p-value	Coef.	p-value
<b>Ability</b>	<b>1.281</b>	<b>0.057</b>	<b>1.241</b>	<b>&lt;0.001</b>
const <sub>t</sub>	0.191	0.001	0.265	<0.001
<i>MV_Gro<sub>t</sub></i>	-0.040	0.688	0.007	0.945
<i>EPS_Gro<sub>t</sub></i>	-0.308	<0.001	-0.314	<0.001
<i>Sales_vol<sub>t</sub></i>	0.440	0.415	-0.210	0.692
<i>CFO_vol<sub>t</sub></i>	2.679	0.002	3.403	<0.001
$Ln(Indus_t)$	0.656	<0.001	0.757	<0.001
$Ln(Age_t)$	0.710	0.003	0.775	<0.001
<i>Oper<sub>t</sub></i>	-0.381	0.381	-0.342	0.433
Intercept	11.731	<0.001	7.555	<0.001
<b>R<sup>2</sup></b>	0.974		0.973	

### 5.2 Managerial Ability and Future Performance (H2)

Table 5 shows the results of the second hypothesis, which tests the relationship between the managerial ability of executives and future performance. The results show that both measures of the managerial ability of executives positively affect future performance, where a p-value <0.10. The results in the table also show coefficient values 0.602 and 0.065 for IndAdjROA and MA-Score, respectively. The results of the study are consistent with the results of (Demerjian1 et al., 2017; Carmeli and Tishler, 2006; Herianti et al., 2021). This means that the impact of the managerial ability of executives increases future

performance, supporting our hypothesis that executives with the highest abilities are associated with high future performance. The more efficient the executive, the greater the future performance. To measure the economic importance of the role of the managerial ability of executives to increase (reduce) future performance, we estimate the future change in earnings as a result of increasing the managerial ability of executives to 1 degree of standard deviation; future performance increases by 15.7% ( $0.602*0.261$ ), according to the IndAdjROA measure, and by 0.1% ( $0.065*0.008$ ) according to the MA-Score scale.

**Table 5. Results of the multiple regression analysis of the effect of the managerial ability of executives on future performance measured by FutureROA<sub>t+1</sub>**

<b>Dependent variable: Future performance</b>				
<b>Variable</b>	<b>IndAdjROA</b>		<b>MA-Score</b>	
	<b>Coef.</b>	<b>p-value</b>	<b>Coef.</b>	<b>p-value</b>
<b>Ability</b>	<b>0.602</b>	<b>&lt;0.001</b>	<b>0.065</b>	<b>0.004</b>
cons <sub>t</sub>	-0.004	0.549	-0.003	0.649
MV_Gro <sub>t</sub>	0.001	0.893	0.009	0.363
EPS_Gro <sub>t</sub>	-0.005	0.621	0.010	0.278
Sales_vol <sub>t</sub>	-0.247	0.010	-0.401	0.002
CFO_vol <sub>t</sub>	-0.056	0.206	-0.117	0.072
Ln(Indus <sub>t</sub> )	0.021	0.028	0.015	0.121
Ln(Age <sub>t</sub> )	0.032	0.118	0.046	0.011
Oper <sub>t</sub>	-0.003	0.941	0.020	0.550
Intercept	0.018	0.483	-0.195	0.015
<b>R<sup>2</sup></b>	<b>0.384</b>		<b>0.264</b>	

### 5.3 Managerial Ability and Earnings Quality to Future Performance (H3)

The third hypothesis tests the Dechow in companies with highly qualified executives. The results in Table 6 show that the coefficient values are -3.212 and -5.436; this means that the interaction between managerial ability and earnings quality negatively affects future performance; p-value <0.10, which is statistically significant. Based on these results, there is an inverse relationship between the quality of earnings and future performance in companies with highly qualified executives.

To measure the economic importance of the managerial ability's role in increasing/decreasing the impact of earnings quality in future performance, we calculate the percentage change in the effect of earnings quality in future performance by increasing the managerial ability by 1 degree of standard deviation from the mean. The mean of the managerial ability of IndAdjROA and MA-Score, respectively, is -0.036 and 0.003, and the standard deviation of the managerial ability of the two measures is 0.261 and 0.008, respectively.

Table 6 also shows that the overall effect of earnings

quality on future performance at the mean of the managerial ability is equal to the coefficient value of the earnings quality plus the coefficient value of the managerial ability multiplied by the quality of the earnings and by the mean of the managerial ability. Therefore, the effect of future performance quality on the mean of managerial ability for IndAdjROA and MA-Score is, respectively, (3.488, 5.623) (3.372+-3.212\*-0.036, 5.639+-5.436\*0.003). When the managerial ability is increased by 1 degree of the standard deviation from the mean, the effect of the quality of earnings on the future performance of the two indices IndAdjROA and MA-Score, respectively, becomes (2.649, 5.579) (3.372+-3.212\*(-0.036+ 0.261), 5.639+-5.436\*(0.003+ 0.008)), representing a change rate equal to (24.1%, 0.8%) ((3.488)-(2.649))/(3.488), ((5.623)-(5.579))/ (5.623) in the positive impact of the quality of earnings on future earnings. The results indicate that as companies increase the managerial ability by 1 degree of the standard deviation from the mean, so the managerial ability reduces the positive impact of the quality of earnings in future earnings by 24.1% and 0.8%, respectively. The study results are consistent with the results of (Huang and Sun, 2017; Hessian, 2019;

Roychowdhury, 2006).

This is because the actions taken by managers to manipulate real activities can negatively affect the company value, given that the measures taken in the current period to increase profits can negatively impact cash flows and future performance (Hessian, 2019). Gunny (2005) stated that these measures include: selling profitable assets that have a negative impact on future operating performance, reducing promotional expenses, reducing research and development expenses, and offering price discounts.

This study differs from the results reached by Gunny (2010), whereby managers can participate in managing real activities to meet profit criteria to enhance the company's credibility and reputation with stakeholders. The company's good reputation will enable better performance in the future because relationships with customers, suppliers, or creditors will be stronger. In doing so, managers can use real managing activities to meet the criteria to send signals to the market about future returns.

**Table 6. Results of the multiple regression analysis of the effect of the managerial ability of executives and the quality of earnings measured by accruals in future performance**

Variable	Dependent variable: future performance			
	IndAdjROA		MA-Score	
	Coef.	p-value	Coef.	p-value
Ability_dummy <sub>t</sub>	66.621	0.043	112.655	0.072
Ability_dummy <sub>t</sub> *EQ <sub>t</sub>	<b>-3.212</b>	<b>0.043</b>	<b>-5.436</b>	<b>0.072</b>
EQ <sub>t</sub>	3.372	0.026	5.639	0.055
cons <sub>t</sub>	-0.005	0.490	-0.013	0.042
MV_Gro <sub>t</sub>	0.014	0.177	0.004	0.630
EPS_Gro <sub>t</sub>	0.008	0.400	0.006	0.579
Sales_vol <sub>t</sub>	-0.290	0.014	-0.093	0.086
CFO_vol <sub>t</sub>	-0.274	0.001	-0.267	0.031
Ln(Indus <sub>t</sub> )	-0.001	0.960	-0.004	0.638
Ln(Age <sub>t</sub> )	0.054	0.030	-0.002	0.903
Oper <sub>t</sub>	-0.009	0.821	0.0662	0.015
Intercept	-69.877	0.026	-116.8	0.055
<b>R<sup>2</sup></b>	0.250		0.078	

### 6. Additional analyses

Two sets of results will be discussed in order to confirm the results of the previous hypotheses. First, we investigate the sensitivity of our results by including additional control variables in our models. Second, we evaluate the strength of our results through an alternative measure of the quality of earnings.

#### 6.1 Additional Control Variables

Tables 7, 8, and 9 show the addition of four new

variables ( $Lev_t$ ,  $divid\_vol_t$ , Year, Firm).  $Lev_t$  was measured by dividing total debt by total assets, as in the studies by Zalloum (2015) and Houque et al. (2012).  $divid\_vol_t$  represents the change in the dividend represented by the difference between the current and the previous period's dividend distributions. The value of 0 is given if the change is in deficit, and the value of 1 is given otherwise. The index was used by Zalloum (2015) and Ramalingegowda et al. (2013). Two variables were added (Year, Firm), as used by Demerjian et al. (2013). Our results

are qualitatively similar to those obtained previously, which confirms that the additional tests do not affect our conclusions.

Tables 7 and 9 show our use of Income Smoothing as an alternative measure of earnings quality, which is consistent with our hypothesis. Results indicate that our conclusions remain unchanged if we use Income Smoothing as an alternative in each of our research tests. However, the results showed no relationship when Income Smoothing is used as a measure of earnings quality and MA-Score as a measure of

managerial ability to measure the relationship between the quality of earnings and future performance in companies with high-quality executives. In general, these analyses support our previous findings and indicate that highly qualified managers are motivated to manage earnings in order to benefit from the advantages of the capital market and thereby enhance their reputation. Table 8 shows the use of FutureROA<sub>t+1,t+3</sub> as an alternative measure of future performance. As expected, the results indicate that our findings remain unchanged from results using other measures.

**Table 7. Results of the multiple regression analysis of the effect of managerial ability of executives on earnings quality according to two scales**

Variable	Dependent variable: Income Smoothing				Dependent variable: Accruals			
	IndAdjROA		MA-Score		IndAdjROA		MA-Score	
	Coef.	p-value	Coef.	p-value	Coef.	p-value	Coef.	p-value
Ability	<b>0.407</b>	<b>&lt;0.001</b>	<b>0.025</b>	<b>&lt;0.001</b>	<b>1.367</b>	<b>0.001</b>	<b>0.959</b>	<b>&lt;0.001</b>
cons <sub>t</sub>	-0.005	<0.001	-0.005	0.103	0.080	0.112	0.188	<0.001
MV_Gro <sub>t</sub>	<0.001	0.835	0.008	0.002	0.042	0.598	0.039	0.624
EPS_Gro <sub>t</sub>	0.009	<0.001	0.026	<0.001	-0.234	0.002	-0.202	0.008
Sales_vol <sub>t</sub>	-0.011	0.213	-0.030	0.261	0.189	0.633	-0.218	0.572
CFO_vol <sub>t</sub>	0.009	0.516	-0.006	0.809	1.993	0.004	2.135	0.001
Ln(Indus <sub>t</sub> )	0.008	<0.001	0.007	0.074	0.359	<0.001	0.469	<0.001
Ln(Age <sub>t</sub> )	0.008	0.183	0.029	<0.001	0.636	<0.001	0.818	<0.001
Oper <sub>t</sub>	0.002	0.788	-0.005	0.641	-0.401	0.350	-0.164	0.689
Lev <sub>t</sub>	-0.012	0.022	-0.080	<0.001	0.902	<0.001	0.758	<0.001
divid_vol <sub>t</sub>	0.002	0.205	0.003	0.358	0.087	0.395	0.160	0.117
Year	-0.001	0.048	-0.002	0.005	-0.008	0.567	-0.031	0.017
Firm	-0.004	0.001	-0.011	<0.001	1.582	<0.001	1.581	<0.001
Intercept	1.271	0.044	3.213	0.006	26.377	0.327	70.569	0.007
<b>R<sup>2</sup></b>	0.818		0.410		0.981		0.980	

Note: Income Smoothing is expressed by the percentage of the standard deviation of net operating cash flows divided by the total assets of the first period / standard deviation of the net accounting earning divided by the total assets for the first period.

**Table 8. Results of the multiple regression analysis of the effect of managerial ability in future performance according to two scales**

Variable	Dependent variable: FutureROA <sub>t+1</sub>				Dependent variable: FutureROA <sub>t+1,t+3</sub>			
	IndAdjROA		MA-Score		IndAdjROA		MA-Score	
	Coef.	p-value	Coef.	p-value	Coef.	p-value	Coef.	p-value
<b>Ability</b>	<b>0.320</b>	<b>&lt;0.001</b>	<b>0.024</b>	<b>0.013</b>	<b>0.596</b>	<b>&lt;0.001</b>	<b>0.070</b>	<b>0.001</b>
cons <sub>t</sub>	-0.009	0.131	-0.008	0.228	0.001	0.929	0.001	0.879
MV_Gro <sub>t</sub>	-0.015	0.260	-0.012	0.294	-0.001	0.878	0.004	0.708
EPS_Gro <sub>t</sub>	0.008	0.398	0.013	0.173	-0.006	0.543	0.008	0.396
Sales_vol <sub>t</sub>	0.001	0.968	-0.085	0.110	-0.276	0.005	-0.410	0.001
CFO_vol <sub>t</sub>	-0.027	0.631	-0.026	0.744	-0.069	0.129	-0.157	0.027
Ln(Indus <sub>t</sub> )	0.001	0.960	0.003	0.753	0.027	0.008	0.027	0.026
Ln(Age <sub>t</sub> )	-0.026	0.023	0.019	0.237	0.048	0.037	0.083	0.001
Oper <sub>t</sub>	0.079	0.172	0.029	0.647	0.003	0.946	0.022	0.493
Lev <sub>t</sub>	0.031	0.220	-0.033	0.246	0.045	0.128	-0.005	0.864
divid_vol <sub>t</sub>	0.012	0.108	0.006	0.423	0.001	0.941	<0.001	0.981
Year	-0.002	0.148	-0.005	0.002	-0.005	0.005	-0.008	<0.001
Firm	0.007	0.494	0.003	0.753	0.007	0.409	0.004	0.615
Intercept	3.400	0.144	9.68	0.002	9.769	0.005	16.441	<0.001
<b>R<sup>2</sup></b>	0.074		0.032		0.391		0.297	

Two measures are used to express the future performance: FutureROA<sub>t+1</sub> is the return on assets for the year  $t + 1$ , and FutureROA<sub>t+1,t+3</sub> is the average return on

assets of the three following years starting from year  $t + 1$ . All other variables have been defined previously.

**Table 9. Results of multiple regression analysis of the impact of managerial ability of executives and the quality of earnings according to the parameters of future performance**

Variable	Dependent variable: future performance (FutureROA <sub>t+1</sub> )							
	IndAdjROA		MA-Score		IndAdjROA		MA-Score	
	Coef.	p-value	Coef.	p-value	Coef.	p-value	Coef.	p-value
Ability_dummy <sub>t</sub>	0.017	0.133	0.008	0.511	67.410	0.026	80.952	0.007
<b>Ability_dummy<sub>t</sub>*EQ<sub>t</sub></b>	<b>-0.692</b>	<b>0.030</b>	<b>0.359</b>	<b>0.116</b>	<b>-3.251</b>	<b>0.026</b>	<b>-3.906</b>	<b>0.007</b>
EQ <sub>t</sub>	*1.816	<0.001	*1.363	<0.001	**3.329	0.018	**4.013	0.004
cons <sub>t</sub>	<0.001	0.980	0.005	0.529	-0.002	0.834	-0.003	0.691
MV_Gro <sub>t</sub>	0.003	0.772	0.002	0.829	0.005	0.618	0.006	0.530
EPS_Gro <sub>t</sub>	-0.012	0.254	-0.013	0.209	0.007	0.461	0.011	0.271
Sales_vol <sub>t</sub>	-0.182	0.016	-0.190	0.018	-0.362	0.002	-0.404	0.001
CFO_vol <sub>t</sub>	-0.093	0.145	-0.097	0.148	-0.211	0.004	-0.164	0.018

Dependent variable: future performance (FutureROA <sub>t+1</sub> )								
Variable	IndAdjROA		MA-Score		IndAdjROA		MA-Score	
	Coef.	p-value	Coef.	p-value	Coef.	p-value	Coef.	p-value
Ln(Indus <sub>t</sub> )	-0.001	0.894	0.002	0.770	0.017	0.074	0.020	0.062
Ln(Age <sub>t</sub> )	0.045	0.042	0.045	0.043	0.062	0.011	0.080	0.001
Oper <sub>t</sub>	0.018	0.603	0.010	0.769	-0.004	0.906	0.011	0.737
Lev <sub>t</sub>	0.058	0.028	0.067	0.012	-0.007	0.787	-0.010	0.749
divid_vol <sub>t</sub>	-0.015	0.434	-0.006	0.634	0.003	0.850	0.002	0.885
Year	-0.003	0.044	-0.004	0.018	-0.007	0.001	-0.008	<0.001
Firm	0.018	0.041	0.016	0.053	-0.001	0.956	-0.002	0.818
Intercept	6.046	0.045	7.250	0.019	-55.42	0.052	-67.33	0.014
<b>R<sup>2</sup></b>	0.467		0.468		0.290		0.297	

Note: \*EQ<sub>t</sub>: Income Smoothing, \*\*EQ<sub>t</sub>: accruals

## 7. Conclusions

In this study, we aim to provide some empirical evidence about the relationship between the managerial ability of executives and the quality of earnings. The results indicate a positive relationship between executives' managerial ability and earnings quality. The managerial ability of executives increases the quality of earnings: managers with high managerial ability are associated with high-quality earnings. The more effective the executives, the less likely they are to manipulate earnings. In our study, we suggest that companies improve the quality of their earnings by employing higher-quality managers. There is also a positive relationship between accounting conservatism and earnings quality: companies that are less committed to accounting conservatism have higher earnings quality.

The study finds that an increase in the cash flow ratio

indicates that high-quality managers maintain a higher quality of earnings than other managers. As we note, there is a significant and positive relationship between the quality of earnings and high-performing executives. The results show a difference in the quality of earnings according to the industrial sector to which the company belongs. Furthermore, the results confirm that the greater the size of the company, the higher the quality of earnings. The managerial ability of executives positively impacts future performance, which means that the managerial ability of executives increases future performance. The study's results also show that the interaction between the variables managerial ability and earnings quality negatively affect future performance. Based on these results, there is an inverse relationship between the quality of earnings and future performance in companies with highly qualified executives.

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## القدرة الإدارية، جودة الأرباح، والأداء المستقبلي

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### ملخص

هدفت الدراسة إلى توضيح العلاقة بين القدرة الإدارية، جودة الأرباح والأداء المستقبلي للشركات غير المالية المدرجة في سوق عمان المالي. اعتماداً على عينة من البيانات المستخرجة من التقارير المالية السنوية خلال الفترة (2002-2015) المدرجة في بورصة عمان. دلت النتائج الى وجود علاقة ايجابية بين القدرة الإدارية للمديرين التنفيذيين وجودة الأرباح. كما اظهرت الدراسة أن المديرين ذوي القدرات العالية يحافظون على جودة أرباح أكبر من المدراء الآخرين. كما توصلت الدراسة إلى أن جودة الأرباح تختلف تبعاً لاختلاف القطاع الصناعي الذي تنتمي اليه الشركة، كما أكدت النتائج أنه كلما زاد حجم الشركة تحسنت جودة الأرباح. كما يوجد علاقة عكسية بين جودة الأرباح والأرباح المستقبلية في الشركات التي يتمتع مديرها بقدرات عالية. تزود الدراسة الإدارات العليا في الشركات غير المالية برؤى تساعد لفت انتباههم الى العلاقة بين القدرة الإدارية، جودة الأرباح والأداء المستقبلي.

**الكلمات الدالة:** القدرة الإدارية، جودة الأرباح، الأداء المستقبلي، بورصة عمان.

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