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Earnings management and its applications in Saudi Arabia context: Conceptual framework and literature review

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A B S T R A C T

Continuous improvement of accounting policies coincides with the increase and development of earnings management. Several studies focus on this topic, and it became subject to many investigations. This paper deals with current literature focused on several axes of earnings management like motives for practicing earnings management, earnings management types, developed models to discover earnings management, factors affecting earnings management, and the consequences of earnings management practices. Besides, this research focuses on earnings management in Saudi Arabia in particular. In the recent period, Saudi Arabia is going through changes in the Saudi economy and changes in accounting systems, such as adopting the IFRS standards, which provides opportunities for expanding research into earnings management in the Saudi Arabia context. Several studies conclude that Saudi companies' earnings management practices are done in several ways and affected by many factors.

1. Introduction

Earnings management is an important topic in the long-standing. The earning manipulation and falsification appeared in the early nineties to the present day, known as earnings management. The continuous conflict of interests between management, on the one hand, and the shareholders of companies, on the other hand, increase earnings management activities in companies. For this reason, the earnings management issue occupies great importance for researchers and academics. Indeed, many researchers focused on knowing the motives behind the spread of this phenomenon. Researchers at the beginning study this phenomenon using accruals, being the easiest part for manipulation by the administration because it contains many administrative estimates and judgments. In recent years with the accounting field's development, earnings management arises through the company's real activities. Some interpret this as a result of the accounting system's continuous development and improvement in accounting policies and standards. This development leads to reduced earnings management based on accruals. Many companies resort to manipulating their earnings and their financial information for various purposes. Some of it specific to company management, and some are specific to meet investor expectations. Manipulating financial information and publishing misleading financial statements is an explicit violation of the principle of disclosure and transparency. Publishing such data that does not display the real company's performance causes misleading and deceiving decision-makers whose decisions depend on this information (Öğüt et al., 2009).

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Earnings manipulation remains one of the leading causes of economic collapses, and perhaps the most prominent of these collapses is Enron's collapse. The phenomenon of earnings manipulation has been the focus of many researchers. Stolowy and Breton (2004) describe this phenomenon as stemming mainly from the desire to influence the possibility of transferring wealth between different stakeholders. It defines it as “the use of management’s judgment to make accounting options or to design transactions to influence the possibilities of transferring wealth between the company and society (political costs), providers of funds (cost of capital) or managers (compensation plans).” One of the earnings manipulation forms is earnings management. This paper discusses earnings management in terms of concept, the incentives that contribute to the presence of earnings management, types of earnings management, and the factors and consequences of practicing earnings management. The paper ends by displaying the studies that discuss earnings management in the Saudi Arabia context.

2. The Concept of Earnings Management

Earnings management is an old concept, and it has been defined in many kinds of literature. Schipper (1989) describes the earnings management as disclosure management and defined it as “purposeful intervention in the external financial reporting process, with the intent of obtaining some private gain (as opposed to, say, merely facilitating the neutral operation of the process).” Among the most recognized definitions of earnings management: referring to Healy and Wahlen, (1999) “Earnings management occurs when managers use judgment in financial reporting and in structuring transactions to alter financial reports to either mislead some stakeholders about the underlying economic performance of the company or to influence contractual outcomes that depend on reported accounting numbers.” Scott & Scott (2015) defines earnings management as: “Earnings management is the choice by a manager of accounting policies, or actions affecting earnings, to achieve some specific reported earnings objective.” in another side Ronen and Yaari, (2008) provides three degrees and definitions for earnings management white, gray and black as:

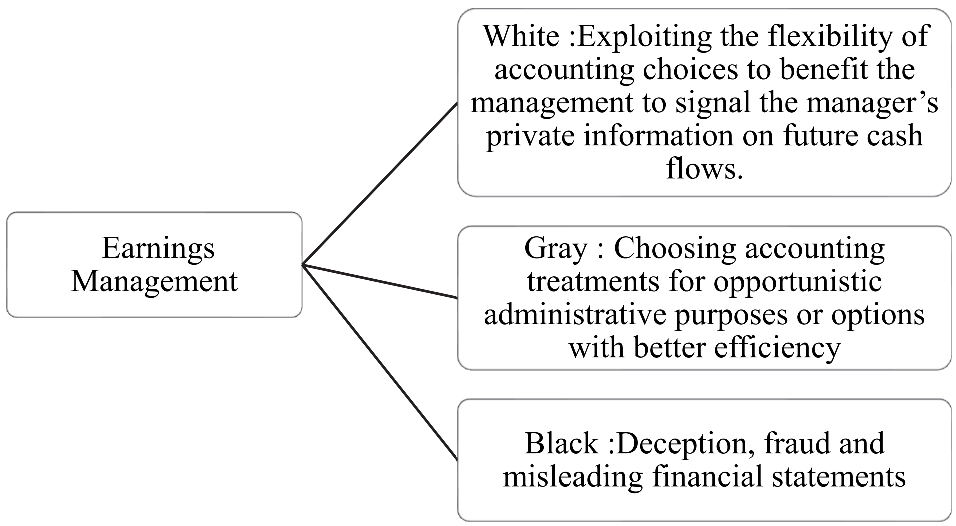

Fig. 1. Definitions of earnings management by degree (Ronen & Yaari, 2008)

El Diri (2017) defines earnings management as “the within GAAP management discretion over external financial reporting by abusing some contracting deficiencies, stakeholders’ bounded rationalities, and information asymmetry in the market, though some economics’ decisions, a change in the accounting treatment, or other sophisticated methods.” Therefore, earnings management can be defined as the result of intentional action or activity by the management to conceal the company's actual activity due to management-specific motives such as administrative remunerations or improving the company’s image to attract the external parties to the company. In addition to earnings management, the literature mentioned several synonyms for earnings management that refer in their entirety to accounting manipulation. These synonyms differ from earnings management either in the way they are measured or in their forms. (Stolowy & Breton, 2004) declares three types of accounting manipulation other than earnings management: creative accounting (window dressing), income smoothing, and big bath accounting.

2.1. Creative accounting (window dressing)

Creative accounting is known as exploiting informational asymmetry between managers and controlling shareholders’ side and other investors’ side to mislead them and decrease the firm's capital cost. Still, the accounting is described as creative “when a legal, economic or financial innovation appears without any existing accounting standard to regulate it” (Stolowy & Breton, 2004).

2.2. Income smoothing

The reduction of the earnings variance by making large enough profits to create provisions and to adjust the flow when necessary and produce a steadily growing stream of profits (Stolowy and Breton, 2004).

2.3. Big bath accounting

Takes advantage of opportunities by the new administration and conduct a significant clean-up of the balance sheet and placing the blame on the previous administration by reducing the current profits by deferring revenues or accelerating write-offs is a strategy known as “taking a bath” and thus facilitating future profits (Stolowy & Breton, 2004).

3. Earnings Management, theoretical approach

Since the emergence of the earnings management concept, many researchers have tried to explain this behavior through a theoretical approach. Among the theories that explain earnings management are Positive accounting theory and Agency theory.

3.1. Positive accounting theory

This theory explains how an entity's management deals with the applicable standards by choosing one of the other accounting policies among the several alternatives available. The positive approach was first introduced by Watts and Zimmerman (1986) as a theory concerned with explaining accounting practices by the management and accountant without specifying the subsequent practice that the company should follow. According to this theory, management can adopt two types of behaviors: beneficial behavior or opportunistic behavior (Mahjoub and Miloudi, 2015). Therefore, Positive theory provides three explanatory assumptions to explain the use of earnings management by managers:

a) Compensations plans: This assumption predicts that managers act opportunistically when the company has compensation and bonus plans using accounting methods that increase the declared earnings and increase the remuneration and rewards that managers receive (Watts and Zimmerman, 1990).

b) Debt contracts: This assumption predicts that companies committed to financing and debt contracts their managers engage in choosing methods and accounting policies that increase income. Managers use this method to ease financing contract terms and reduce default costs (Watts and Zimmerman, 1990).

c) The political process: This assumption predicts that companies are more likely to use accounting options that reduce reported earnings since larger companies are more exposed to political attention than smaller companies (Watts and Zimmerman, 1990).

3.2. Agency theory

The agency theory is considered the most prominent theory that explains earning management, where the concept of earnings management links to agency theory in many kinds of literature. Jensen and Meckling (1976) were among the first authors who introduced the agency theory concept, which Explains the relationship between the parties within the company where the principles (shareholders) authorize the agent (directors) to make decisions on their behalf in a contractual relationship called the agency. Since all individuals are self-motivated, the interest of one may conflict with that of others. The separation between control, ownership, and conflict of interest lies in the foundations of agency theory. Through agency relations, managers benefit from the information asymmetry between managers and shareholders, as managers are more informed when making decisions related to the company. The separation of management and owners may result in misconduct by managers and conflicts of interest, as managers can perform actions that serve their interests at the expense of stakeholders' interests. The difference of objectives between the principles (shareholders) and the agent (managers) results in conflicts of benefits and the agency's potential cost, such as administrative decisions that do not serve shareholders' interests. Earnings management is one of the managerial decisions resulting from the agency conflict as it may affect investment decisions based on these earnings (Kazemian & Sanusi, 2015; Fuad & Wahyu, 2017). Positive accounting theory and agency theory represent a factual basis for many research works on earnings management. The positive accounting theory is most concerned with explaining the motives that drive management to use earnings management within the company, whether it is opportunistic or in the company interest. However, the agency theory explains that the emergence of earnings management in the contractual relationship between the agent and the principles is primarily directed from the agency’s cost.

Based on agency theory, the use of high-quality accounting information contributes to reducing information asymmetry between managers and shareholders and thus reducing agency costs (Bushman & Smith, 2001). Since this dissertation focuses on the impact of adopting high-quality standards (IFRS) on earnings management, the agency theory is a suitable theoretical basis for this dissertation.

4. Motivations for Earnings Management

Earnings management is a process of misleading the financial statements practiced by the company's management. The incentives and reasons may differ from one department to another and from one company to another. Some studies, such as (Nia et al., 2015; Scott and Scott, 2015; and Schipper, 1989) reveal two main factors that motivate the practice of earnings management: The first one is the management's opportunistic incentive to achieve some personal interests. The other motive is the efficiency incentive, which improves the company image and attracts its external parties. However, Healy and Wahlen (1999) classifies the motives for exercising earnings management by the managers into three types of motivations; Capital Market Motivations, Contracting Motivations, and Regulatory Motivations:

4.1. Capital Market Motivations

One of the reasons that push directors to manipulate financial statements is their desire to influence the company's share prices and improve its results in the short term since financial analysts use financial statements to assess companies' shares'' (Healy & Wahlen, 1999). Since a company's share prices depend mainly on the profits reported in that company's financial statements, the investors review their expectations for good performance for the company in the future. Whereas, failure to meet these expectations causes a decline in the company's stock price. Even failure to meet investor expectations may cause an indirect effect on the reputation of the manager, especially if the manager provides unconvincing explanations for the company's weak condition. Therefore, meeting investors' expectations is a strong incentive for earnings management (Scott & Scott, 2015).

4.2. Contracting Motivations

According to Healy and Wahlen (1999), managers may be motivated to exercise earnings management because of contracts between the company and other stakeholders. The parties outside the company rely primarily on financial data to monitor and regulate these contracts, whether they are Lending Contracts or Management Compensation Contracts. The existence of debt contracts in the company is related to the presence of earnings management, according to Roychowdhury (2006). Johnson (2009) believes that the main catalyst for earnings management contracts for executive compensation is directly related to the profits announced in the financial statements. According to Alhadab and Al-Own (2019), it appeared that European banks widely practice earnings management via discretionary loan loss provisions driven by managers' compensation.

4.3. Regulatory Motivations

Some regulations and legislations affect administrative decisions by using earnings management to meet these requirements. As for Industry-Regulations, Healy and Wahlen (1999) indicated that some industries are subject to particular conditions, such as banks and insurance companies. These companies are subject to capital adequacy requirements legislation. Consequently, such regulations are a catalyst for managers to manipulate financial statements and exercise earnings management (Nia et al., 2015). Some studies have proven that companies subject to accusation of monopoly issues or any other political issues have strong motivations to practice earnings management to appear less profitable To avoid political costs (Watts and Zimmerman, 1986; Cahan, et al., 2000). For Saudi companies, Habbash and Alghamdi (2015) reveals several reasons and incentives that lead to the practice of earnings management in Saudi companies, which are:

- to increase the remuneration amount for the management.
- to report a reasonable profit and avoid loss.
- to obtain a bank loan.
- to increase share price.

5. Earnings Management Techniques and Methods:

Levitt (1998) exposed the existence of five basic methods to exercise earnings management, they are Big Bath, Creative acquisition accounting, Cookie jar reserves, Immaterial misapplications of accounting principles, and Premature recognition of revenue.

5.1 Big Bath

The concept of (big bath) is related to the restructuring of companies when the restructuring of the company is related to large charges that could be caused by the process of "cleaning" its balance sheet, which gives it what is called "the big bath" Levitt (1998).

The company that practices the big bath strategy in a specific year its earnings are already low. Thus, making it worse does not harm the company's reputation or the managers so that the company will incur large losses once. Therefore, its profits are better in the coming periods. One of the studies that talk about the reality of the “big-bath” notion in companies is Jordan and Clark (2004). This study conducts on 100 companies and provides convincing evidence that big bath is more than a theory, and it’s indeed a method practiced for managing earnings. The newly appointed managers also stimulate earnings management, as he is evaluated based on the earnings declared. Hence, managers have a strong incentive to manage earnings using the big bath strategy (Nieken and Sliwka, 2015).

5.2 Creative acquisition accounting

According to Levitt (1998), this type of earnings management arises when a company acquires another company. In this operation, some managers classify part of the acquisition price as in-process R&D expenditures. Deleting these expenditures of the acquired companies will reduce the burden on future profits. However, IFRS 3 (Business Combinations) provides extensive guidelines about the acquisition process's accounting method and how to allocate the purchase price. Yet, it leaves the opportunity to manipulate the amortizing levels (Shah & Butt, 2011).

5.3 Cookie jar reserves

The term (cookie jar) indicates the use of estimates in accounting. The company can choose an estimate of greater expenses for the later period, hoping that the expenses for subsequent periods will be lower. Thus, some managers exploit the "cookie jar" to enhance expected revenue (Omar, et al., 2014). Some companies postpone revenue recognition for the year, characterized by good results (This action formed "the cookie jar"). Then, managers use these revenues in a subsequent year characterized by bad results to raise this year’s earnings (Toumeh & Thya, 2019).

5.4 Immaterial misapplications of accounting principles

Levitt shows that this type of earnings management occurs when companies misuse the concept of materialism and intentionally make mistakes in the financial statements on the pretext that the amounts are immaterial and have no effect on the financial statements. The problem lies in the lack of materialism for a specific definition. The accountant is responsible for determining what is material and what is immaterial. Indeed, the accountant or management uses this concept to record some errors and ignore others under the assumption that they are immaterial and have no effect on decision-making (Wokukwu, 2019).

5.5 Premature recognition of revenue

In Premature recognition of revenue, companies deliberate Improper Revenue Recognition, so they recognize revenue before completing the sale, and before delivering the product to the customer, or at a time when the customer still has options to end, void, or delay the sale. For some companies, determining the exact point when revenues are realized and recognized requires judgment. This ambiguity in the rules opens the door to earnings manipulation by corporate executives (Carruth, 2002).

6. Earnings Management Types

Referring to Scott & Scott (2015) definition of earnings management, “Earnings management is the choice by a manager of accounting policies, or actions affecting earnings, to achieve some specific reported earnings objective.”; there are two patterns of earnings management. The first is when management chooses the accounting policies appropriate for their purposes and manages the earnings through it during financial statements preparation, known as Accrual-based earnings management. The second earnings management pattern focused on earnings management by making decisions during operational operations and through the company's real activities, known as Real earnings management.

6.1. Accrual -based earnings management

The accrual system opens up an opportunity to manage the earnings by increasing income declared in the short term at the expense of income in the long run. Accruals are classified based on the time-period (long-term and short-term) and administrative control (discretionary and non-discretionary). Managers can adjust current accruals by adjusting the short-term assets and short-term liabilities used in daily operations. Such as recognizing revenue before receiving cash and assumption of an inadequate provision for bad debts and estimations incurred while measuring inventories, receivables, or payables. On the other hand, earnings management can also be practiced by adjusting long-term accruals, including net long-term assets. Perhaps the most prominent example of the adjustment to long-term accruals is adapting and changing the depreciation policy. Current and long-term non-discretionary accruals are indicators of accruals outside management control, but discretionary current and long-term accruals are indicators of earnings management. However, investors can monitor the accruals, but they cannot conclude which parts are estimated or managed (Teoh, et al., 1998). This type of earnings management uses discretionary accruals to measure the management's involvement in earnings management practices. The starting point in calculating discretionary accrual is measuring total accruals and then estimating non-discretionary accruals to get the discretionary part of accruals, indicating earnings management. Some studies developed different models to estimate the non-discretionary part of accruals. These models have become approved by many researchers in the study of earnings management, the most known models:

6.1.1 The Healy Model (1985)

Healy (1985) measures the non-discretionary accruals by comparing the mean total accruals (scaled by lagged total assets) across the earnings management partitioning variable. Healy's model assumed the occurrence of systematic earnings management in every period. The following model used to measure non-discretionary accruals:

$$NDACC_t = 1/n \sum(TACC_t / A_{t-1})$$

where: ($NDACC_t$ = Estimated Non-discretionary accruals in year t, $TACC_t$ = Total Accruals in year t, A_{t-1}: Total Assets in year t -1, n: number of years in the estimation period.)

6.1.2 DeAngelo Model (1986)

The model of DeAngelo (1986) is similar to the Healy model and considers an especial case of the Healy Model. - DeAngelo model measures non-discretionary accruals by using the last period's total accruals divided by the total assets of the previous year, which contains total accruals. Thus, the DeAngelo Model for measuring non-discretionary accruals is:

$$NDACC_t = TACC_{t-1} / A_{t-2}$$

where: ($NDACC_t$ = Estimated Nondiscretionary accruals in year t, $TACC_{t-1}$ =Total Accruals in year t-1, A_{t-2} =Total Assets in year t -2.)

Healy and DeAngelo's models depend basically on the nature of non-discretionally accruals. Therefore, the results extracted from both models are accurate and without errors. The model is valid when the non-discretionary accrual follows the white noise pattern and shows no autocorrelation in the time series. However, in the real world, the economic environment and events affect companies' operating results. So, accruals change according to the firms' operating results. It differs between firms as they are affected by the way firms respond to economic events. Consequently, Healy and DeAngelo's models are unrealistic due to the assumption of stability of non-discretionally accruals throughout the study period. or its stability between companies (Lee and Vetter, 2015).

6.1.3 The Jones Model (1991)

The model of Jones (1991) focus on total accruals as the source of earnings management, as the using of discretionary accruals by managers to manipulate the earnings in more specifically, the model tries to control the effects of changes in the company's economic conditions when measuring non-descriptional accruals through the following equation:

$$NDA_{it} = \alpha_i[1/A_{it-1}] + \beta_{1i}[\Delta REV_{it}/A_{it-1}] + \beta_{2i}[PPE_{it}/A_{it-1}] + \varepsilon_{it}$$

where: (NDA_{it} = Estimated Non-discretionary accruals in year *t* for firm *i,* TA_{it} = total accrual in year t for firm i, ΔREV_{it} = change in the revenues between year t and t-1 for firm i, PPE_{it} = gross property, plant, and equipment in year t for firm i, A_{it-1} = total assets in year *t*-1 for firm i, ε_{it} = random error term in year *t* for firm *i*). The model tries to control economic changes and mitigate the assumption that non-discretionary accruals are stable over the years or between the companies. Healy and DeAngelo models approve this result (Lee and Vetter, 2015). However, Jones's model is not free from criticism, as the model assumes that the reported revenue amount is free of accounting problems. Yet, managers can make decisions that reduce reported profits, such as the delayed shipment of goods to defer revenue recognition. Jones herself exposed this criticism.

6.1.4 The Modified Jones Model (1995)

Deshow et al. (1995) develops the modified Jones model to reduce errors in the measurement of discretionary accruals found in the previous Jones model (Jones, 1991). This new model adds the receivables' change to reflect the extent of the management's interference in manipulating its earnings by manipulating future sales. Indeed, future sales are more likely to be manipulated than cash sales. This manipulation action reflects the intervention of management and earnings management practice through the revenue recognition principle. This model considers as the most reliable, recognized, and widely used model among researchers in measuring earnings management (Oza & Yelkenci, 2018). The non-discretionary accruals by a modified Jones model measures through the following equation:

$$NDA_{i,t} = \alpha_1(1/A_{it-1}) + \alpha_2 \ [(\Delta REV_{it} - \Delta REC_{it})/A_{i,t-1}] + \alpha_3[PPE_{i,t}/A_{i,t-1}]$$

where: ($TACC_{it}$ = Total accruals for the firm (i) in time t., ΔREV_{it} = change in revenue for the firm (i) in time *t*, ΔREC_{it}= the change in net receivable for the firm (i) in time t, PPE_{it} = plant, propriety, and equipment for the firm (i) in time **t,** A_{it-1} = total assets for the firm (i) at the end of year *t*-1, ε_{it} = random error term in year *t* for firm *i*). Although this model Partially improves errors caused by using the model of Jones (1991), yet including the change in receivables (ΔREC), it presupposed that all changes in credit sales result from earnings management (Paulo & Martins, 2009).

6.1.5 The performance-matched Model

The performance-matching model is an improved version of the Jones model. This model was developed by Kothari (2005). He added the return on assets (ROA) for the prior year to control the impact of the previous year's performance on estimated discretionary accruals. The model presented as:

$$NDA_{i,t} = \alpha_1(1/A_{it-1}) + \alpha_2 \ [(\Delta REV_{it} - \Delta REC_{it})/A_{i,t-1}] + \alpha_3[PPE_{i,t}/A_{i,t-1}] + \alpha_4[ROA_{it-1}/A_{i,t-1}]$$

where: (ΔREV_{it} = change in revenue for the firm (i) in time t, ΔREC_{it} = the change in net receivable for the firm (i) in time *t*, PPE_{it} = plant, propriety, and equipment for the firm (i) in time t, ROA_{it-1}= Return on assets in year *t*-1 for firm *i*, TA_{it} = total accrual in year *t* for firm *i*, A_{it-1} = total assets for the firm (i) at the end of year *t*-1, ε_{it} = random error term in year *t* for the firm *i*).

Dechow et al. (1995, 2012) criticize this model and explained that this model sometimes exaggerates misspecification since adding ROA can exaggerate misspecification in samples with extreme size and operating cash flows. The second problem with this model is that increasing the test statistic's standard error reduces the model power. Researchers' accreditation differs in choosing the appropriate model for conducting studies and evaluating earnings management in companies. In contrast, some studies rely on measuring accrual-based earnings management in more than one model to verify studies' results. Besides, some other studies compare the validity of the recognized models by those studying the topic of earnings management. Lee and Vetter (2015) offered a critical theoretical evaluation of the recurring models to measure accrual earnings management adopted by researchers. This study concludes that there is no single accrual model free from error in defining the model. On the other hand, some studies practically provided comparisons between these models. However, these studies showed contradictions in terms of the superiority of one model over the rest. The study of Keung and Shih (2014) reveals the performance matching model. Kothari (2005) induces measurement error and adds noise to the estimated discretionary accruals compared to the modified jones model 1995. Wan (2018) showed that the Performance-Matched Kothari (2005) Model excels the Modified Jones 1995 Model and the Jones 1991 Model. While the study of Quy and Nhan (2017) appeared contradictory results, it proved that Jones' 1991 model provides more effective explanatory power than the modified model of Jones (1995). Although Jones' model has maintained its flexibility against critical scrutiny for more than 20 years (Lee and Vetter, 2015). The contradictions in the results between comparative studies of deducting earnings management models illustrate that all existing models are subject to problems.

6.2 Real earnings management

Besides using the accruals principle and the practice of earnings managing within the accounting system, which is known as accrual-based earnings management, some managers tend to control the company's operational activities to influence its cash flow. This type of earnings management is known as real earnings management. Several researchers give definitions for real earnings management. Schipper (1989) defines it as: "accomplished by timing investment or financing decisions to alter reported earnings or some subset of it." Ewert and Wagenhofer (2005) suggests that "real earnings management changes the timing or structuring of real transactions." This definition means that "real earnings management implies that the manager deviates from an otherwise optimal plan of actions only to affect earnings, thus, imposing a real cost to the firm." Also Roychowdhury (2006) defines real earnings management as "actions that deviate from normal business practices, undertaken with the primary objective to mislead certain stakeholders into believing that earnings benchmarks have been met in the normal course of operations." Therefore, real earnings management appears when the manager controls the timing of the company's real activities and operations to influence the company's future earnings and future cash flows.

6.2.1 Types of real earnings management activities

Previous studies revealed real profit management in three areas, sales manipulation, production costs, and discretionary expenses:

a) Sales manipulation

Sales manipulation indicates that managers temporarily increase sales and thus increase announced earnings. Indeed, managers can temporarily reduce prices at the end of the year, contributing to increasing sales for the current period. Then, the volume of sales returns to normal when the old prices return. Another method possible to increase sales is by offering more lenient credit terms. Manipulation of sales causes a significant decrease in cash flows from operations, which considers an important sales manipulation indicator (Roychowdhury, 2006). Managers can also control the timing of asset sales to manage reported earnings (Gunny, 2010).

b) Overproduction Costs

The administration can manipulate the cost of the goods sold (COGS) by increasing production. When the company increases the number of production units, the fixed costs are distributed over many units, reducing the unit cost. So, (COGS) appears less than usual, and it seems that there is an improvement in the operational processes through production. However, when the company cannot make sales excessive production units, it incurs higher production costs than sales. Therefore, abnormally high production costs are an indicator of real earnings management Roychowdhury (2006).

c) Discretionary expenses

Reducing discretionary expenses, which is subject to managerial estimation, is one way to manage earnings. The discretionary expenses include selling, general and administration expenses (SG&A), research and development expenses (R&D), and advertising expenses. Some intangible elements such as trademarks, employee training programs expenses, customer loyalty, and human capital are elements subject to management's measurement. Suppose the administration chooses to cancel employee training programs; this will reduce (SG&A) expenses and increase the earnings announced in the current period because these intangible elements are not recognized under the GAAP standards(Gunny, 2010). Also, managers can reduce or cut research and development (R&D) expenses, especially if it affects future periods, not the current period. Thus, unusually low discretionary expenses are an important indicator of real earnings management through discretionary expenses Roychowdhury (2006).

6.2.2 Real earnings management models

Previous studies revealed two models for measuring real earnings management:

1. Gunny (2005) model:

The model of Gunny (2010) measures real earnings management in four different arias: R&D expenses, SG&A expenses, the level of gains on assets sales, and the production costs as follow:

a) The normal level of R&D expense:

$$RD_t/TA_{t-1} = \alpha_0 + \beta_1(RD_{t-1}/TA_{t-1}) + \beta_2\, INT + \beta_3 Q_t + \beta_4 CX_t + \beta_5 logMV_t + \varepsilon$$

where: (RD = research and development expenses, TA= total assets, INT= internal funds, Q=Tobin's Q: firm's market value divided by the replacement cost of its assets, CX: capital expenditure, MV: log of the market value of equity.)

b) The normal level of SG&A expense:

$$Log(SGA_t/SGA_{t-1}) = \alpha_0 + \beta_1 log(S_t/S_{t-1}) + \beta_2\, log(S_t/S_{t-1})*DD_t + \beta_3 log(S_{t-1}/S_{t-2}) + \beta_4 log(S_{t-1}/S_{t-2})*DD_{t-1} + \varepsilon$$

where (SGA: selling and general and administration expenses + advertising expenses, S: sales revenues, DD: dummy variable that equals 1 when sales revenue decreases over the prior period and 0 otherwise.)

c) The normal level of gains on assets sales:

$Gain_t = \alpha_0 + \beta_1 ASales_t + \beta_2 ISales_t + \beta_3 \log(S)_t + \beta 4\ Growth_t + \varepsilon$

where (Gain: income from assets sales, ASales: assets sales by market value at the beginning of the year, ISales: investment sales by market value at the beginning of the year, S: sales, Growth: sales growth.)

d) The normal level of production costs:

$PROD_t/A_{t-1} = \alpha_0 (1/A_{t-1}) + (S_t/TA_{t-1}) + \beta_2 (\Delta S_t/TA_{t-1}) + \beta_3 (\Delta S_{t-1}/TA_{t-1}) + \varepsilon$

where ($PROD_t$: production costs (COGS + inventory yearly changes), S_t: sales at year t, TA_t: total assets at year t.)

2. Roychowdhury (2006) model

The model of Roychowdhury (2006) relies on estimating real earnings management in three possible areas, the production costs related to sales, the discretionary expenses, and cash flow from the operational process, then enforce a comprehensive measure for the REM:

a) Cash Flow from Operations:

$CFO_t/TA_{t-1} = \alpha_0 + \alpha_1 (1/TA_{t-1}) + \beta_1 (S_t/TA_{t-1}) + \beta_2 (\Delta S_t/TA_{t-1}) + \varepsilon$

b) Production Costs:

$PROD_t/TA_{t-1} = \alpha_0 + \alpha_1 (1/TA_{t-1}) + \beta_1 (S_t/TA_{t-1}) + \beta_2 (\Delta S_t/TA_{t-1}) + \beta_3 (\Delta S_{t-1}/TA_{t-1}) + \varepsilon$

c) Discretionary expenses:

$DISEXP_t/TA_{t-1} = \alpha_0 + \alpha_1 (1/TA_{t-1}) + \beta_1 (S_{t-1}/TA_{t-1}) + \varepsilon$

where ($PROD_t$: production costs (COGS + yearly inventory changes), CFO_t: firm cash flow from operations, $DISEXP_t$: discretionary expenses (SG&A expenses+ R&D expenses + advertising expenses), TA: total asset, ΔS_t: sales change at year t.)

7. Earnings Management Influencing Factor

The kinds of literature and Previous studies reveal principal factors that affect managers' decisions regarding earnings management practices. These factors may be enterprise-related conditions or regulations that positively impact earnings management practices or increase managers' opportunities to manipulate earnings and practice earnings management. The most important of these factors are:

7.1 Corporate governance

The IIA (The Institute of Internal Auditors) defines corporate governance as a “combination of processes and structures implemented by the board to inform, direct, manage and monitor the organization's activities toward the achievement of its objectives.”. Corporate governance is an important regulation that plays a significant role in reducing earnings manipulation and earnings management practices, whether by its internal or external mechanisms. Many studies found that the board of directors' independence positively affects earning quality (Klein, 2002; Peasnell et al., 2005). The other internal mechanism is the audit committee, which also positively affects controlling earnings management. Indeed, the audit committee members' independence decreases earnings management practices (Klein, 2002). The audit committee members' characteristics, such as the members with financial expertise, reduce the company’s earnings management (Badolato et al., 2014). Also, internal auditing quality is one of the crucial elements of governance that affects earnings management. Many studies reveal that internal audit quality correlates positively with reduced earnings management of both types of accrual-based earnings management and real earnings management. However, the presence of high-quality auditors alone is not enough to constrain all forms of earnings management (Alhadab & Clasher, 2018). Regarding the external mechanisms, investor protection laws play an essential role in influencing earnings management level. So, on the first hand, the earnings management level is lower in countries with stronger investor protection and a large stock market. On the other hand, the earning management level is higher for countries characterized by weak investor protection and a less developed stock market (Leuz etal., 2003).

In the Saudi context, internal mechanisms such as the large board size, the high proportion of outside directors, and the chairperson independence are key characteristics influencing in constraining earnings management, according to a survey by (Alghamdi, 2012).

7.2 Ownership structure

One of the critical institutional factors which affect earnings management is the ownership structure of the firm. The literature reveals two different points of view regarding the ownership structure effect. Warfield et al., (1995) concludes that administrative ownership links with low earnings management levels. The study of O'Callaghan, et al., (2018) provides evidence of management's opportunistic behavior in companies with low managerial ownership, especially when facing poor company performance conditions. On the other hand, some studies, like Yang et al. (2008), indicate that higher managerial ownership may motivate managers to undertake earnings management and raise the company's stock price value and maximize their interests. So, high managerial ownership is significantly related to earnings management (Mitani, 2010). The ownership concentration has a similar effect on earnings management, as some researchers found that ownership concentration reduces earnings management and adjusts the management's opportunistic behavior. Thus, large shareholders' effective control ability on the management's actions protects the company from earnings management (Iturriaga and Hoffmann, 2005; and Alves, 2012).

7.3 External audit

Although the external audit's primary objective is to express an opinion on the financial statement's fairness, the public has always expected that the external auditor can uncover manipulations and earnings management practices (Koh & Woo, 1998). The quality of the external audit as a control mechanism may vary. The audit quality describes the audit process's ability to discover and report material errors in the financial statements, reduce information asymmetry between management and shareholders, and protect shareholders' interests. The quality of the audit is related to the quality of the information included in the financial statements. The financial statements that have been audited by high-quality auditors do not often contain material errors. Many studies have consistently proven that external auditors' quality is essential in preventing earnings management practices (Alzoubi, 2018). Several indicators determine external review's quality, such as Audit tenure, Audit fees, and affiliation with international big auditing firms. Accordingly, the earnings management expectations link with these audit quality indicators (Nawaiseh, 2016).

7.4 The firm size

Many studies and researches have been interested in studying the correlation between firm size and earnings management. Despite the two opposing views, the studies have provided explanatory justifications supporting these views. The first view says that larger companies are less likely to engage in earnings management due to their complex and efficient internal control system. Accordingly, the high company size makes it difficult for the managers to manipulate earnings, and they care for company reputation (Kim and Liu, 2003). Several studies show that increasing company size decreases earnings management in Saudi Arabia firms (Shetwi, 2020). On the other hand, large firms may have greater negotiation power with auditors. Besides, large-sized firms have more substantial management power to exploit a given wide range of accounting treatments available. These companies exhibit more aggressive earnings management to avoid reporting earnings decreases (Kim and Liu, 2003). Türegün (2018) confirms this result.

7.5 Industry factors

One of the factors affecting earnings management is the factors related to the company industry's specific characteristics. Companies in the same industry face similar economic conditions, which affect the management's financial decisions and make them subject to earnings management. Also, companies in the same sector of activities are affected by other companies' earnings management level in this industry. When determining earnings management's target level, management looks at the industry average change (Kallunki & Martikainen, 1999). Peer performance in the same industry provides a strong incentive for earnings management (Du and Shen, 2018). This study shows that the company's discretionary benefits are positively related to peers' performance in the same industry, especially when peers outperform them. Managers are eager to inflate their performance to meet or exceed market expectations. On the other hand, Industries may face some conditions, making them more vulnerable to managing earnings. Jiao et al., (2007) shows that the benefits and costs to manage earnings for the same industry firms are influenced by industry valuation.

7.6 The financial performance

Earning and profitability are an essential source for measuring the firm's financial performance for the investors and external parties, enabling them to make the firm's decisions. It is also an important source for analysts as it allows them to predict the future performance of the firm, and due to the importance of the firm's financial performance, managers tend to manage earnings to deceive investors and improve the company's actual performance (Shirzad et al., 2015). Different indicators measure firm performance: cash flow, sales level, and profitability ratios like return on equity and return on assets. Researchers have found that the company's low profitability and weak performance are reasons for its increased earnings management (Doukakis, 2014). So, profitability is an important factor influencing managers' motives for managing earnings.

8 Consequences for Earnings Management

Regardless of the factors affecting the existence of earnings management, or the incentives that lead managers to practice earnings management, the presence of these practices is harmful to firms in several ways (Clikeman, 2003).

8.1 Reducing the company value

Earning management through real activities and operational decisions can affect the short-term cash flows that may affect the company's future performance and weaken it, which affects the company in the long run. Increasing production reduces the total cost of units produced, resulting in excess inventory and higher storage costs (Rowchowdhury, 2006). Also, earnings management may affect current or future investors by making their investments not beneficial to them and ineffective (McNichols & Stubben, 2008). It also affects the company's reputation by affecting the reliability of the firm's financial statements (Nia et al., 2015; Luong, 2015).

8.2 Influencing ethical standards

Profit reports do not necessarily reflect the real financial performance of companies. As autonomy and flexibility in accounting policies and gray areas in accounting standards all open the way for opportunistic accounting, the manager's role in achieving integrity in the decision-making process is fundamental in directing the system (Belgasem-Hussain & Hussaien, 2020). Earnings management, whether or not they violate accounting rules, is considered an ethical violation and a suspicious practice from an ethical perspective. When the company manages its profits, it sends a message to its employees that misleading and concealing the truth is an acceptable act, which causes other dubious activities (Clikeman, 2003).

8.3 Disguising operational management problems

Earnings management practice is at the level of operational management as well as the level of senior management. The executive and operational management may practice earnings management to obtain promotions, incentives, and reach pre-set goals or even avoid blame due to bad performance. Thus, it may pass errors without correcting them, making it difficult to address these errors later (Clikeman, 2003). Real earnings management hides operational problems and poor company performance, affecting companies' future cash flow, leading to lower profit margins and negatively affecting return on assets (Gunny, 2010; and Cupertino et al., 2016).

8.4 Economic sanctions

Stock exchanges impose economic sanctions on companies involved in earnings management by paying fines and re-preparing their financial reports. These penalties result in a reduction in the declared earnings, and companies lose their market value, thus losing their investors and stakeholders' confidence. Also, the process of preparing financial reports is a costly process for companies. Penalties are not limited to companies only, but managers involved in violations of accounting standards incur special penalties in terms of authority, prestige, and reputation. As revealed by a study conducted by Desai et al., (2006) that more than half of the companies that restated their profits had a rotation of management in at least one of three senior management positions (Chairman, CEO, or President) within 24 months of announcing the restatement. Besides, directors of restating companies suffer more discipline from the external job market as the quality of new employment for these companies' managers is inferior compared to their previous jobs.

9. Application of Earnings Management studies in the Saudi context

Many of the previous researches dealt with the issue of earning management in Saudi companies and the Saudi environment from several aspects:

The first aspect is the presence and motives for earning management in the Saudi environment, the study of Al-Sahli (2006) focused on studying the phenomenon of earnings management and its presence in Saudi companies using discretionary accruals as a measure for earning management. The study revealed that Saudi companies use earnings management to maintain the expected level of profit and the desire to increase the company's capital. Whereas the study of Habbash and Alghamdi (2015) relied on the investigative method by conducting interviews and questionnaires to determine the motives for practicing earning management in Saudi companies. The study revealed four main reasons that stimulate earnings management: increasing administrative compensation amounts, reporting reasonable earnings, obtaining external financing, and increasing the share price in the financial market.

Table 1
The summary of Saudi studies on earnings management

The study	Nature of the study
(Al-Sahli, 2006)	Studying the phenomenon of earnings management in Saudi companies through discretionary accruals and exploring some of the incentives that push Saudi companies' management to practice earnings management.
(Al-Rassini, 2010)	It aims to determine the effects of earnings management practice in Saudi companies on the market value of stocks traded in the Saudi market.
(Mubarak, 2011)	Investigating the relationship between the quality of internal audit activities and earnings management in Saudi joint-stock companies and testing whether internal audit activities' quality harms earnings management practices.
(Alghamdi, 2012)	This study investigates the incentives and techniques of earnings management in Saudi companies and the impact of governance and external auditing on Saudi companies' earnings management.
(Habbash, 2012)	examines the effectiveness of corporate governance in restricting the practice of earnings management by Saudi companies.
(Al-Ghamdi, 2013)	This study investigates the techniques of earnings management in less developing countries.
(Melegy, 2013)	Investigation of the extent of earnings management practice by Saudi banks and the quality of earnings in them. It also studied the effect of the internal and external audit quality on reducing earnings management practice in Saudi Arabia banks.
(Radwan, 2013)	Measuring the association between internal and external audit quality and earnings management techniques in Saudi Arabia companies.
(Habbash and Alghamdi, 2015)	Examine the methods and techniques of practicing profit management in Saudi Arabia companies through qualitative and quantitative research approaches.
(Al-Salman and Al-Bassam, 2016)	Examine the effects of good practice of corporate governance and ownership structure in limiting and mitigating the company's management's manipulation of earnings in companies listed on the Saudi Arabia market.
(Al-Thuneibat et al., 2016)	Investigation of the effect of governance mechanisms on Accrual earnings management practices in Saudi companies.
(Baatour et al., 2017)	Examines the effect of multiple directorship on earnings management of both types (real earnings management and accrual-based earnings management).
(ORABY, 2017)	Investigation of the relation between earning management strategies and techniques and accounting information relevance in Saudi companies.
(Habbash and Haddad, 2019)	Investigating the relationship of corporate social responsibility with the practice of profit management in Saudi companies .
(Shetwi, 2020)	This study investigates the effects of public offering (IPO), company size, and financial leverage on earnings management in Saudi companies

Speaking of the techniques practiced by Saudi companies in managing earnings, Al-Ghamdi (2013) revealed seven techniques that management exercises for managing earning: manipulating inventory provisions, accounts receivable, depreciation accounts, expenditure, assets sales, and manipulation the internal transactions, as well as capitalizing the expenses.

The second aspect is the influencing factors that affect earnings management in the Saudi environment. Governance and its mechanisms are among the most important topics that have been focused on by many research studies. Some of these studies show the positive effect of internal governance mechanisms on earnings management in Saudi companies. Mubarak (2011) focuses on the relationship between internal audit activities' quality and its role in limiting earnings management in Saudi companies. This study reveals an inverse relationship between internal audit quality and earnings management in Saudi joint-stock companies. This result indicates the positive impact of internal audit activities to decrease earnings management. Melegy (2013) and Radwan (2013) also confirm the results of this study. Habbash (2012) investigates two attributes of corporate governance: the size of the board of directors and its members' independence and shows a positive effect of these attributes on preventing earnings management. The study of Al-Salman and Al-Bassem (2016) reveals that companies with good corporate governance practices have less chance of abuse by corporate administrators in manipulating financial statements. Whereas, some studies achieve different results of corporate governance effect on earnings management. The research study of Aghamdi (2012) shows that the expected impact of governance on earnings management is incorrect. This study shows that the internal governance variables and the external auditor do not significantly affect earnings management. This result is also confirmed by Al-Thuneibat et al., (2016). Baatour et al., (2017) examines the impact of board members' multiple directorships on accrual-based earnings management and real earnings management and showed the significant effect of numerous directorships on real earnings management. Habbash and Haddad (2019) examines the relationship between accrual earnings management and corporate social responsibility in Saudi companies. The study results reveal that corporate social responsibility links positively to earnings management as it increases in companies investing in corporate social responsibility. Shetwi (2020) examines factors that affect earnings management practice during the IPO event and reveals that earnings management is significantly and negatively affected by the company size. Small companies manage their earnings more than large companies.

The third aspect is the effect and consequences of earnings management on the Saudi environment. Al-Rassini (2010) tests the earnings management impact on the market value of shares traded in the Saudi Arabia stock market and reveals an inverse relationship between earnings management and stock prices. Oraby (2017) investigates the impact of earnings management strategies on accounting information relevance in Saudi Arabia companies. The study shows that earnings per share are of strong value relevance. Besides, real earnings management affects stock prices and affects the value relevance; however, the study reveals that investors in the Saudi Arabia capital market adjust their decisions by reducing earnings value relevance.

10. Summary

Earnings management results from the management's intentional action or activity to conceal the company's actual activity due to management-specific motives such as administrative remunerations or improving the company image to attract the company's external parties. Agency and positive accounting theories provide a theoretical basis that describes and explains earnings management. The positive accounting theory explains the motives that drive management to use earnings management within the company. However, the agency theory explains why the emergence of earnings management in the contractual relationship between the agent and the principles is primarily the result of the agency's cost.

The motivations for engaging in earnings management differ among managers, and there are three main types: Capital Market Motivations, Contracting Motivations, and Regulatory Motivations. There are two types of earnings management: First, Accrual-based earnings management when management chooses the accounting policies appropriate for their purposes and manages the earning through it during the preparation of financial statements. Second, real earnings management when making decisions during operational operations the real activities of the company.

Earnings management is affected by several factors, whether they are organizational, such as governance, and factors related to the company's characteristics, such as the company's size, and some of them related to the industry that the company performs. The research works focused on earnings management reveal several consequences for companies involved in earnings management practices: reducing the company's value, affecting ethical standards within the company, masking operational problems, and imposing economic sanctions on companies and individuals engaged in earnings management.

Finally, research works focused on Saudi Arabia's environment show that earnings management exists within Saudi Arabia companies for different motives and is affected by several factors, as discussed above.

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