

AN EMPIRICAL STUDY TO DETECT AGENCY PROBLEMS IN LISTED CORPORATIONS: THE EMERGING MARKET STUDY

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Abstract

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The aim of this paper is to shed the light on the concepts of agency theory by measuring one of the problems that arise from it, which is represented by earnings management (EM) practices. The research problem is demonstrated by the failure of some Iraqi banks and their subsequent placement under the supervision of the Central Bank of Iraq, which was attributed, in part, to the inadequacy of the agency model in protecting stakeholders in shareholding institutions, as well as EM, pushed professional institutions to adopt the corporate governance model as a method to regulate the problem of accounting information asymmetry between the parties to the agency. We are using the Beneish M-score model and the financial analysis equations in the Beneish model for bank data for both the income statement and the financial position to do so. The sample includes 30 Iraqi banks listed on the Iraq Stock Exchange from 2014 to 2017, with the goal of inferring agency problems through EM practices. The results show that there are problems for the agency in the research sample banks throughout the research periods, and the percentages of those problems vary from one year to another. Apart from detecting agency problems, the art of financial ratios that have been used can be useful for auditors in conducting financial analyses, and thus they can be used as tools to detect fraud, given those agency problems resulting from profit manipulation are only aspects of fraud in the financial statements.

Keywords: Agency Theory, Agency Problems, Stewardship, Earnings Management

Authors' individual contribution: Conceptualization — H.H.F. and W.K.; Methodology — H.H.F. and W.K.; Formal Analysis — H.H.F.; Investigation — H.H.F. and W.K.; Data Curation — H.H.F.; Writing — Original Draft — H.H.F.; Writing — Review & Editing — H.H.F. and W.K.; Visualization — H.H.F. and W.K.; Supervision — W.K.; Project Administration — W.K.

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1. INTRODUCTION

Accounting has evolved because of the advancement of numerous civilizations around the world. Manuscripts and excavations have revealed that

civilizations could not thrive without accounting, money-making, and money disposal being among their cornerstones. The writers also explain that the evolution of accounting over time was influenced by a number of factors, including the introduction of

writing, numbers, and getting rid of the barter process. The establishment of private ownership and the capitalist mentality, whose major aim was profit, resulted from the barter process (Abass et al., 2022). The first beginnings of accounting were in individual projects, and then solidarity institutions appeared. The early accounting literature advised that the first step in accounting registration is to prepare an assessment of the capital, and show all the assets, property, and debts of the institution from the first day to start a business (Glautier & Underdown, 2011). When the need for economic institution expansion emerged following the industrial revolution that began in England in the eighteenth-century AD and spread to various European countries, the need for large capitals, as well as the need to borrow from some credit agencies and banks, appeared. This situation necessitated the establishment of institutions requesting financing or borrowing by providing information on their level of efficiency, profitability, and cash flow, with the goal of determining their ability to meet the capital requirements of financiers (Al-Khoury et al., 2022).

The separation of ownership and management distinguishes joint-stock institutions from other institutions today. The lack of ownership in the emergence of the main role of management gave it the freedom to choose accounting policies that aim to maximize its own benefits or the activity of the institution managed by it. Regardless of whether obtaining what is helpful to the other party is beneficial in some situations, the management choice should be the product of a collection of voluntary contracts with the goal of maximizing investor rewards while also increasing the institution's value.

The problems that occurred in the seventies of the last century, from which emerged in what is known as the "Fraudulent Practices Law" in 1977. Among the failures of the third century are the subsequent collapses of numerous institutions in several nations at the beginning of the first decade of the third millennium, which resulted in the Sarbanes-Oxley Act. The inadequacy of the agency model in protecting stakeholders in shareholding institutions, as well as earnings management (EM), pushed professional institutions to adopt the corporate governance model as a method to regulate the problem of accounting information asymmetry between the parties to the agency. In fact, corporate governance has been discovered because of financial and administrative corruption processes, deficient governance systems lead to weaknesses in their application, increasing the agency's difficulties gap, and vice versa (Ali Shah et al., 2009).

Some researchers argue that EM may be beneficial because it improves the value of financial information disclosed to shareholders and other stakeholders. Larger (less) suffers less (more) from agency costs (Jiraporn et al., 2008). Therefore, EM is one of the most serious problems facing the real performance of institutions, as these practices mislead the users of the financial statements of the institution, which leads to a decrease in the confidence of stakeholders in the credibility of the financial statements (Alzabari et al., 2019). It can be said that shareholders and creditors frequently

look at profits as a basic element when making investment and financing decisions, and the profits department works to make profits more preliminary, which leads to lower agency costs for a period and then the institution's management can clean its financial statements through auditing (big bath).

Along the same line, Imeni et al. (2021) examine the relationship between managerial ability and earnings classification shifting of firms listed in the Tehran Stock Exchange (TSE). They show a negative relationship between managerial ability and real EM and no relationship between managerial ability and accrual-based earnings management (AEM). Also, Martens and Pham (2021) examine whether certain variables of the institutional framework and societal trust can reduce EM practices in emerging markets. They show that minority investor rights, law enforcement, disclosure requirements, and more analyst following are inversely correlated with EM activity. These results are consistent with those of developed market studies (e.g., Sánchez-Ballesta & Yagüe, 2022). Contrary to the developed market studies, higher levels of societal trust do not show statistical significance in reducing EM.

The banking sector in Iraq is one of the country's largest and most important economic sectors, and the research problem is demonstrated by the failure of some Iraqi banks and their subsequent placement under the supervision of the Central Bank of Iraq. By shedding light on the concepts of agency theory and its problems and the amount of contribution it provides to limit the management's ability to reduce the problems of asymmetry of accounting information or limit the amount of internal information flow for a group of individuals at the expense of other groups of interest in the institution's activity.

This study contributes to the development of the theoretical literature in this area of EM in an emerging market like Iraq. An economic environment like Iraq may be attractive for many reasons. First, financial statements are the principal source of information for investors, so most of the transactions in this capital market are done on the basis of accounting data like earnings. Thus, the importance of earnings for the stock price is very high. This important role of profits incites managers to manage profits. The results of this research may contribute to regulators of accounting standards in emerging markets. Second, due to the lack of strong supervisory systems in this context, managers have high authority to provide financial reporting, which may cause an agency problem; therefore, managers can become opportunistic and manage their gains. Therefore, examining EM in an economic environment such as Iraq as one of the emerging markets could provide appropriate evidence for other emerging countries.

The rest of the paper is organized as follows. We present the conceptual framework and the literature review in Section 2. Then, we describe the empirical design and the methodology in Section 3. Further, we focus on the empirical results in Section 4. Finally, we conclude the study in Section 5.

2. LITERATURE REVIEW

2.1. Agency theory problems in the accounting literature

Ethical risk refers to the option of redistributing risks, that is, shifting all or part of the risk to another party, and this technique has been employed in the insurance business for several years through reinsurance institutions, as well as in the principal-agent model. As inconsistency develops after the parties' contract is settled, this word is used to refer to any circumstances in which the other party is unaware of knowledge about the major party's actions once the agreement is signed (Macho-Stadler & Pérez-Castrillo, 2020).

In the public sector, agency problems emerged in the 1980s, when most countries privatized their state-owned institutions and transformed them into private-sector institutions, putting agency costs on the new owners' shoulders when monitoring management procedures, and researchers realized the effectiveness of governance mechanisms in solving agency problems at the time. They also separated these mechanisms into two groups: internal mechanisms and external mechanisms (Dharwadkar et al., 2000). The application of different governance systems to control the work of agents in participating institutions is aided by agency theory (Panda & Leepsa, 2017). Although corporate governance has been discovered as a result of financial and administrative corruption processes, deficient governance systems lead to weaknesses in their application, increasing the agency difficulties gap, and vice versa (Ali Shah et al., 2009).

Poor governance mechanisms in emerging economies can also generate a distinct set of agency concerns related to the expropriation of a minority stake in a business. When large or majority owners take control of the enterprise, denying minority owners the right to adequate returns on their investment, ownership disputes arise. Traditional agency problems based on principal-agent goal conflict are being supplanted by agency problems that are one-of-a-kind, arising from principal-principal goal conflict; however, agency theorists who provide solutions in the context of an advanced economy do not consider these agency problems to be one-of-a-kind (Dharwadkar et al., 2000).

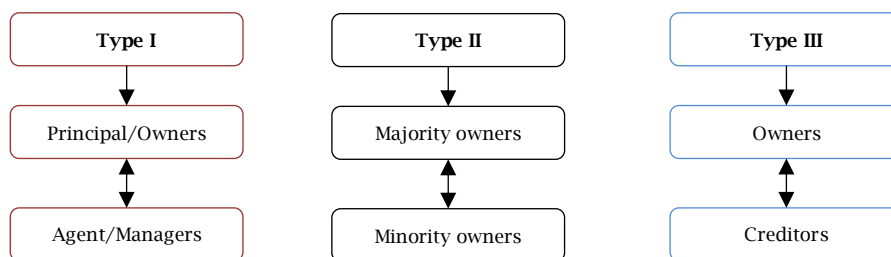
At a time when studies are focusing on problems that arise between the principal and the agent, it is possible that disputes will arise between shareholders and creditors, as shareholders

want to invest in risky projects that are expected to generate higher profits. However, creditors object to the high rate of risk in such projects because it raises the cost of financing and reduces the value of outstanding debts because high profits benefit investors while the interest rate remains constant for creditors (Panda & Leepsa, 2017).

Information asymmetry is not the only problem in agency theory, but it can be the lack of serious work from the management of the institution, and insider trading is also the problem of the agency (Shapiro, 2005). Because of the problems that arise as a result of internal information trading, some countries have enacted legal penalties for it, in addition to other issues such as monopoly and environmental pollution (Hill & Jones, 1992). The presence of insider trading for some insiders indicates that there are unresolved issues for the agency, and this issue is the result of the principal's inability to control the agent's activity (Padilla, 2002).

Agency issues also arise in the context of stewardship versus competition in resource allocation, as institutions are sometimes under pressure to report satisfactory results. Current and prospective customers are satisfied with the smooth income flows and the level of growth, but the conflict arises when the institution's actual performance is unstable and unsatisfactory as well. On the one hand, the need for smooth growth appears to satisfy the investors, both present and prospective, in order for the institution to be able to obtain a share of scarce economic resources. On the other hand, financial reporting of stewardship requires institutions to report on their actual performance even if the results are unsatisfactory (Mathews & Perera, 1996). Other researchers believe that agency problems can be solved by improving the risk-bearing characteristics of the agent and the principal, increasing the catalytic match between the agent and principal, and implementing effective principal control over the agent (Dharwadkar et al., 2000). Other researchers have criticized agency theory, claiming that it only focuses on the authentic side of "principal-agent problems", and that the problem can also occur from the authentic side (Panda & Leepsa, 2017). In conclusion, EM emerged as a result of a conflict of interests between management, owners, and the rest of the stakeholders in the institution, and in accordance with the principle of rational choice, according to which each of the parties tries to maximize its own benefits (Ali Salih et al., 2020). Figure 1 shows the various types of agency problems.

Figure 1. Types of agency problems

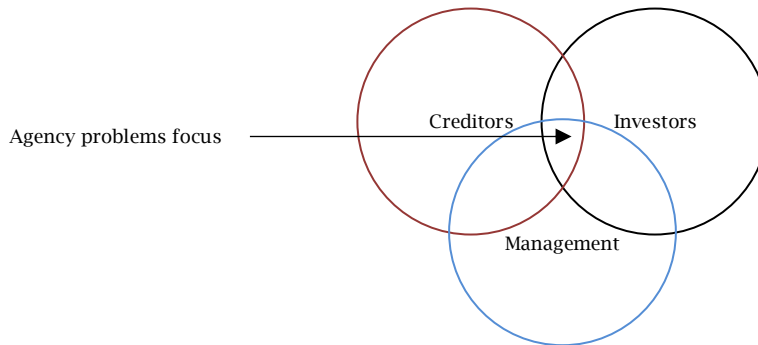


Source: Panda and Leepsa (2017).

Based on the studies that have been discussed about agency problems, it is possible to conclude that there is a close relationship between agency problems and EM practices. It could be between the investors themselves, between management and investors on one side, or between investors and creditors on the other, given that the theory of unity holds that both investors and creditors are capital funders. Of course, the agency problems between the principal and the agent are the problems between investors and creditors on the one hand, and management on the other, and the goal of these

problems revolves around personal benefit based on an attempt by one of those parties to give precedence to their personal interests at the expense of the other. The Sarbanes-Oxley Act, it can be said, carried a large part of the risks to the agent following the crises that afflicted many institutions in various countries around the world, and laid the groundwork for adopting mechanisms for good governance. Figure 2 depicts the distribution of agency issues among investors, creditors, and management.

Figure 2. The focus of agency problems between investors, creditors, and management



Source: The figure is prepared by the authors.

Figure 2 shows that all problems are concentrated because of the dispute between the three parties interested in the institution's activities. At a time when there is a conflict in the relationship between investors and creditors, we find that the administration benefits from those conflicts, because the risks associated with investing in activities that investors want but creditors do not like, benefit the administration. We discover that the management benefits from those investments because the return benefits the management, whereas the loss in these investments is the responsibility of the investors who are the decision-makers in the institution, and the management's support for the investment decisions in the institution puts both the management and the investors (the principal and the agent) in full agreement against the creditors' investment orientations. However, in the event that the administration does not want to enter into investments that could lead in the future to discrediting the institution's management, then in this case it will be on the side of the creditors in such decisions. A dispute between them and both investors and creditors.

Accrual earning is considered to be a better measure than the cash flow from the company's operating activities because the accrual method considers the time problem. The existence of a conflict of interest between the owner and the manager in the company always results in the information submitted is not in accordance with the actual conditions of the company. According to Beneish (1999), if viewed from the perspective of agency theory, the low disclosure of information in financial reporting arises as a result of agency problems, namely the lack of alignment of interests between owners and management. According to Kothari et al. (2009), information asymmetry between managers and shareholders provides managers with the flexibility to choose accounting methods and

estimates used in reporting company profits so as to provide opportunities for management to make EM (Irwandi et al., 2019).

Finally, there are no models for measuring agency problems directly. A study by Mahoney (1995) adopted a new approach solution to agency problems by mandatory disclosure. As for the experimental studies, we have used deduced measures to measure them indirectly. A study by Demsetz et al. (1977) used Tobin's Q, while the studies by La Porta et al. (2000) and Maury and Pajuste (2002) used a dividend policy. A study by Gamba and Triantis (2014) aimed to analyse how effectively can debt covenants alleviate financial agency problems. Also, a study by Grimaldi (2019) used the Beneish model to identify the companies that potentially adopt EM. Also, MacCarthy (2017) and Hundal and Eskola (2021) used the Beneish M-score model to evaluate earnings quality.

2.2. Methods for decreasing agency issues

Corporate governance: Despite being rooted in the English language, according to Webster's Dictionary, the word "governance" has become widely used in the social sciences and public policy in the last two decades of the previous century. It has been linked to government through its imposed powers and was rarely used until recently the third millennium of this century (Elsner & Schoenig, 2005). Means and Berle brought attention to the fact that the corporation, in its expanding form as a joint stock company, played a distinct role in separating ownership and management in a book released in 1932 titled "The Modern Corporate & Private Prosperity" (as cited in Bratton et al., 2000).

Corporate governance is described as a management control and oversight tool that may be utilized to equally increase the earnings of shareholders and corporations using agency theory.

The conflict between owners and managers arises as a result of the separation of ownership and control, and the agent and the principal might unethically gain from each other. The essence of successful corporate governance is to ensure trusting relationships between the organization and its stakeholders (Bhandari, 2018). The mechanisms of corporate governance, the most important of which are (the boards of directors) are control tools that work to ensure that the problems that may arise from the relationship between the principal and the agent are reduced (Al-Taie et al., 2017).

The agency theory emphasizes the role of internal control and governance as the primary component of the board of directors' activity. It also underlines that the board of directors' composition has an impact on corporate governance and control systems, as external members of the board of directors are more effective in safeguarding the interests of shareholders than internal members. Independent board members are seen as key contributors to effective corporate governance because independence produces more objectivity in decision-making, reduces opportunism, and lowers agency costs due to greater oversight capabilities, and thus boards with a larger proportion of independents are able to better monitor management and thus increase the value of the company (Madhani, 2017).

The major issue with corporate governance is lowering agency expenses. Despite the scope and strictness of the laws and rules governing the elimination of agency costs, there is still a need to comprehend how these standards are monitored and enforced (Kandemir, 2019). Although corporate governance has been discovered as a result of financial and administrative corruption processes, weak governance procedures lead to weak governance application, increasing the agency's difficulties, while effective corporate governance has the opposite effect (Ali Shah et al., 2009). The expropriation of minority ownership in a corporation might raise a unique set of agency concerns in emerging economies due to poor governance procedures. When large or majority shareholders seize control of a company, they deprive minority owners' right to get adequate returns on their investment, resulting in ownership disputes. Traditional agency problems based on principal-agent goal conflict are being supplanted by agency problems that are one-of-a-kind, arising from principal-principal goal conflict; however, agency theorists who provide solutions in an advanced economy do not consider these agency problems to be one-of-a-kind (Dharwadkar et al., 2000).

In the public sector, agency problems first appeared in the 1980s, when most countries privatized their companies and turned them into private sector companies, forcing the new owners to bear agency costs when monitoring management procedures, and researchers realized at the time the effectiveness of governance mechanisms in providing agency solutions. They classified these mechanisms into two types: internal mechanisms and external mechanisms (Dharwadkar et al., 2000). Agency theory contributes to assisting in the implementation of multiple governance mechanisms to control the work of agents in joint stock companies (Panda & Leepsa, 2017). Despite the increasing number of corporate governance theories, the agency theory remains the foundation of knowledge in this field; however, the value of

governance lies in explaining the relationships between the structures in the governance structure, so these governance phenomena can be largely embedded in the context of another theory (Udayasankar, 2008).

Audit quality: The emergence of agency problems prompted the demand for audit services (Olojede et al., 2020). It is assumed that the greater the conflict of interests between the administration on the one hand and the stakeholders on the other hand, the higher the agency costs and the greater the need also for auditing companies that provide high-quality services, unlike companies whose degree of conflict of interests is minimal and therefore agency costs decrease (Omer & Al-Qadasi, 2020). Despite the criticisms leveled at scrutiny as a result of previous collapses, it can be said that scrutiny is still important in reducing the intensity of those conflicts between the agency's parties. The more intense the conflicts, the greater the need for a high-quality audit. Therefore, the relationship between agency conflicts and the demand for high levels of audit quality is a direct relationship, according to the findings of many previous studies.

Because information asymmetry exists between the interests of agents and managers, agency theory is frequently used in auditing research. As a result, the auditor's role as an independent third party is that of an observer (Safrihana et al., 2018). As a result, the demand for audit arises from the auditor's supervisory role within the framework of the principal-agent relationship (Talab et al., 2017). The audit process is of high quality if the auditor can detect and report existing material errors (Thijel et al., 2018). The audit services are a means of monitoring potential conflicts of interest between owners and managers, as well as the various kinds of stockholders, and the works of Watts (1977), Watts and Zimmerman (1981), and Benston (1980) have validated the function of audit in mitigating these difficulties. When there are conflicts of interest between owners and management, audited finance is the least expensive contractual response (DeAngelo, 1981).

3. RESEARCH METHODOLOGY

3.1. Research sample

The research sample included thirty out of 44 Iraqi banks listed on the Iraq Stock Exchange from 2014 to 2017. The sum of observations for each dimension clearly varies depending on the number of items required to calculate the main equation of the Beneish M-score model. Thus, the total observations for the calculation of the main equation of the M-score model are 1170 observations. The study presented a hypothetical model for agency problem detection. The study's goal is to look for agency problems by measuring one of the problems that arise from it, which is represented by EM practices (Beneish et al., 2013).

3.2. Mathematical model

The Beneish M-score model is a fraud detection tool and has been adopted to detect EM (Beneish et al., 2002, 2013; Beneish, 1997). This model depends mainly on a set of equations that appear in a form of financial ratios, and the sum of these ratios obtained by entering such results into the equation shows

whether the companies have agency problems or not. In fact, the ratio of financial ratios is commonly used by auditors when conducting financial analysis (Manurung & Hadian, 2013; Izzalqurny et al., 2019).

To estimate the probability of manipulation in the firms of the sample, Beneish's (1999) unweighted model is used in this research, as revised in 2013 (Grimaldi, 2019).

$$M_Score = -4.840 + (0.920 \times DSRI) + (0.528 \times GMI) + (0.404 \times AQI) + (0.892 \times SGI) + (0.115 \times DEPI) + (-0.172 \times SGAI) + (4.679 \times TATA) + (-0.327 \times LEVI) \quad (1)$$

where, the model includes eight dimensions:

- DSRI*: daily forward sales indicator;
- GMI*: gross profit index;
- AQI*: asset quality index;
- SGI*: sales growth index;
- DEPI*: extinction index;
- SGAI*: marketing and administrative expenses index;
- LVGI*: operational companion index;
- TATA*: Total accruals to total assets.

The arithmetic mean is calculated by summing all values and dividing the result by the number of such values which represents the average value in the sample. The results show that the highest values of the mean and the median related to the *DSRI* index are at a value of 3.97, 1.37, respectively. The lowest mean and median values related to the *AQI* index are 0.23 and 0.20, respectively. The standard deviation coefficient and the scattering variance coefficient measure how far the sample is from its arithmetic mean. The results show that the highest value of the standard deviation coefficient and coefficient of variation related to the *SGI* index is 54.91 and 4.82, respectively. The lowest values of the standard deviation coefficient and the coefficient of variation for the *LEVI* index are 0.138 and 0.138, respectively. These results provide a statistical description and there is no specific criterion by which these indicators are compared due to the nature of the applied data.

4. RESULTS AND DISCUSSION

4.1. Descriptive statistics

Table 1 displays the descriptive statistics for each dimension. Table 1 shows the results of descriptive statistics for each dimension of the variables. It is clear that the sum of observations for each of the dimensions is different based on the number of items required to calculate each dimension in the main equation of the M-score model.

Table 1. Statistical descriptive

Variables	<i>DSRI</i>	<i>GMI</i>	<i>AQI</i>	<i>SGI</i>	<i>DEPI</i>	<i>SGAI</i>	<i>LEVI</i>	<i>TATA</i>
Mean	3.9797	1.5280	0.2394	11.3747	2.4381	1.1620	1.0008	1.3715
Median	1.3728	0.7785	0.2418	0.8548	0.5888	1.0300	1.0150	1.2960
Std. dev.	9.70916	4.61631	0.05110	54.91765	9.07352	0.89959	0.13898	0.56546
C.V.	2.43969	3.02121	0.21348	4.82805	3.72150	0.77418	0.13887	0.41229
Minimum	0.00	-1.67	0.03	0.60	0.03	0.06	0.63	0.06
Maximum	53.40	25.80	0.35	302.05	50.08	5.50	1.25	2.40
Obs.	120	120	180	60	120	150	240	180

4.2. Analyzing and discussing the research results

The M-score scale consists of nine indicators that are calculated independently of other equations. The scale's final result is obtained after each equation is solved. These indicators are classified into eight categories.

Days Sales in Receivables Index (*DSRI*): This measures the ratio of days' sales in receivables versus the prior year as an indicator of revenue inflation. The first dimension includes the daily forward sales indicator, which is calculated using equation (2):

$$DSRI = (Net\ receivables_t / Sales_t) / (Net\ receivables_{t-1} / Sales_{t-1}) \quad (2)$$

Gross Margin Index (*GMI*): This is measured as the ratio of gross margin versus the prior year. A firm with poorer prospects is more likely to

manipulate earnings. The second dimension includes the gross profit index, and it is measured according to equation (3):

$$GMI = [(Sales_{t-1} - Cost\ of\ goods\ sold_{t-1}) / Sales_{t-1}] / [(Sales_t - Cost\ of\ goods\ sold_t) / Sales_t] \quad (3)$$

Asset Quality Index (*AQI*): Asset quality is measured as the ratio of non-current assets other than plant, property, and equipment to total assets,

versus the prior year. The dimension includes the asset quality index, and it is measured according to equation (4):

$$AQI = [1 - (Current\ assets_t + Property_t + Plant_t + Equipment_t + Securities_t) / Total\ assets_t] / [1 - (Current\ assets_{t-1} + Property_{t-1} + Plant_{t-1} + Equipment_{t-1} + Securities_{t-1}) / Total\ assets_{t-1}] \quad (4)$$

Sales Growth Index (*SGI*): This measures the ratio of sales versus prior year. While sales growth is not itself a measure of manipulation, the evidence suggests that growth companies are likely to find

themselves under pressure to manipulate to keep up appearances. The dimension includes the sales growth indicator, and it is measured according to equation (5):

$$SGI = (Sales_t / Sales_{t-1}) \quad (5)$$

Depreciation Index (*DEPI*): This is measured as the ratio of the rate of depreciation versus the prior year. A slower rate of depreciation may mean that the firm is revising useful asset life assumptions

upwards or adopting a new method that is income friendly. The dimension includes the extinction index, and it is measured according to equation (6):

$$DEPI = [(Depreciation_{t-1} / (Property_{t-1} + Plant_{t-1} + Equipment_{t-1} + Depreciation_{t-1}))] / [(Depreciation_t / (Property_t + Plant_t + Equipment_t + Depreciation_t))] \quad (6)$$

Sales, General and Administrative Expenses Index (*SGAI*): This measures the ratio of SGA expenses to the prior year. This is used on the assumption that analysts would interpret a disproportionate

increase in sales as a negative signal about firms' future prospects. The dimension includes the marketing and administrative expenses index, and it is measured according to equation (7):

$$SGAI = (Sales, General and Administrative Expenses_t / Sales_t) / (Sales, General and Administrative Expenses_{t-1} / Sales_{t-1}) \quad (7)$$

Leverage Index (*LVGI*): This measures the ratio of total debt to total assets versus the prior year. It is intended to capture debt covenants incentives

for earnings manipulation. The dimension includes the operational escort indicator, and it is measured according to equation (8):

$$LVGI = [(Current liabilities_t + Total long term debt_t) / Total assets_t] / [(Current liabilities_{t-1} + Total long term debt_{t-1}) / Total assets_{t-1}] \quad (8)$$

Total Accruals to Total Assets (*TATA*): This assesses the extent to which managers make discretionary accounting choices to alter earnings. Total accruals are calculated as the change in working capital accounts other than cashless

depreciation. It measures a risk relating to accrual policies being used as a financing mechanism for losses. The dimension includes total receivables to total assets, and it is measured according to equation (9):

$$TATA = (Current assets_t - Cash_t - Taxes payable_t - Depreciation_t - Amortization_t) / (Total assets_t) \quad (9)$$

The standard value of the results of the indicators in a positive value of 45 views is 37% lower than the standard value of the daily forward sales indicator and up to 38% lower than the standard value of the gross profit index that 81 total views are 68% less than the standard value for the asset quality index. In the sales growth index, the number of views less than the standard value is 76 views, 63% less than the standard value. The number of views less than the standard value is 82, which is 68% less than the standard value. The results for the marketing and administrative expenses index, the number of views less than the standard value is 75, which is 63% less than the standard value. While the results of the operational companion index indicate that the lowest mismatch rate, as the number of observations is less than the standard value, is 22 observations, 18% less than the standard value, which is the lowest percentage among those previous indicators. It is noted that

there is convergence in the ratios of the indicators that are related to each other and that deal with convergent items in the financial statements, as the sales growth index is linked with the daily forward sales indicator, given that revenues and debts arise from future transactions, while the fixed assets component is a function of the extinction index and asset quality index.

Finally, the *TATA* indicator reveals how much discretionary accounting policies are used by the company's management to modify earnings. The presence of a large level of receivables may raise the likelihood of manipulating business profits, therefore the higher the percentage of this indicator, the more accounting receivables are used. The results of this indicator show that only the year 2014 had a high *TATA* value compared to the years after that. Table 2 presents a summary of the results of the constitute the M-score equation.

Table 2. Beneish M-score 2014-2017 equation results

Sample	2014		2015		2016		2017	
	M-score	Results	M-score	Results	M-score	Results	M-score	Results
1	0.587	+	-3.59	+	556.627	+	561.37	+
2	0.699	+	-2.18	+	1.495	+	94.61	+
3	1.959	+	8.03	+	0.041	+	0.38	+
4	3.150	+	-2.36	+	15.566	+	0.56	+
5	1.168-	+	-0.48	+	0.673	+	1.16	+
6	0.365	+	25.01	+	1.058	+	-0.34	+
7	3.622	+	326.66	+	0.088	+	5.62	+
8	0.784	+	0.16	+	0.739	+	-1.93	+
9	0.255	+	1.21	+	0.930	+	20.28	+
10	0.881	+	1.41	+	0.216	+	0.39	+
11	0.700	+	176.60	+	1.663	+	6.90	+
12	0.682	+	1.79	+	1.909	+	-0.98	+
13	0.402	+	-0.29	+	4.173	+	0.61	+
14	0.185	+	-0.76	+	2.574	-	-0.75	+
15	1.183	+	-0.04	+	1.180	+	-0.47	+
16	0.627	+	0.26	+	1.266	+	3.47	+
17	0.395	+	0.89	+	8.569	+	4.21	+
18	1.125	+	1.07	+	1.740	+	20.28	+
19	2.586	+	1.64	+	0.418	+	-0.71	+
20	0.881	+	-0.38	+	1.084	+	-1.07	+
21	1.672	+	-0.05	+	1.738	+	0.76	+
22	4.576	+	2.79	+	0.506	+	0.46	+
23	0.178	+	0.81	+	1.047	+	-1.38	+
24	0.081-	+	0.72	+	0.311	+	-1.38	+
25	1.285	+	0.09	+	1.454	+	-2.27	-
26	0.033	+	4.27	+	0.085	+	-0.99	+
27	3.070	+	0.12	+	0.914	+	-0.21	+
28	0.672	+	2.42	+	3.947	-	-1.60	+
29	1.726	+	16.05	+	1.129	+	0.31	+
30	5.056	-	1.20	+	3.175	-	1.03	+

Source: Prepared by the authors based on the data of Iraqi companies listed in the Iraq Stock Exchange.

Although each dimension of the M-score model has implications and results that can be interpreted and analyzed, it can provide information about the items being analyzed, the benefit is greater when calculating the combined result when extracting the final M-score result because there is a related relationship between the dimensions. Each scale or indicator is established by the companies that have issues with the agency based on whether the M-score is positive or negative, with a negative value less than -2.22. On the other hand, if the M-score is negative or higher, and it is clear from Table 1, of the results of applying the equation for the period 2014-2017 that the number of companies with proxy problems has surpassed the number of companies with no indicators of agency problems, only the companies reached the M-score. The number of people who had proxy issues in 2014 climbed by 96.7% while it reached 100% for the year 2015. The percentage of agency problems for the year 2016 decreased by 10% to reach 90% of the companies that have proxy problems, then it rose again to reach 96.7% for the year 2017 again, as happened in 2014.

5. CONCLUSION

Despite the numerous research that has detailed the agency theory, only a handful has looked into doing empirical studies using accounting statistics from financial statements. The goal of this study was to look for agency problems in banks listed on the Iraq Stock Exchange, and we used the financial analysis equations in the Beneish model for bank

data for both the income statement and the financial position to do so. The equations are higher than the estimated standard for each equation, and the results vary from one equation to the next over the course of the study, but the result of using the Beneish model was problems for the agency that were discovered in large numbers, almost affecting all of the banks listed on the market, according to the research sample. Apart from detecting agency problems, the art of financial ratios that have been used can be useful for auditors in conducting financial analyses, and thus they can be used as tools to detect fraud, given that agency problem resulting from profit manipulation are only aspects of fraud in the financial statements.

Future studies can consider the role of the agency to assess their influence on the various dimensions of EM well as their linkage with corporate governance and audit quality. Future studies can consider the role of the agency to assess their influence on the various dimensions of earnings management, well as their linkage with corporate governance and audit quality. Also, the agency model that exhibits varying interactions with corporate governance systems and audit quality dimensions, which may be due to changes in the international, national and institutional framework as well as economic conditions and the type of industry. The determinants of the study were the difficulty of collecting information, as well as the failure to disclose the data completely or harmonious among the various banks in the research sample.

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